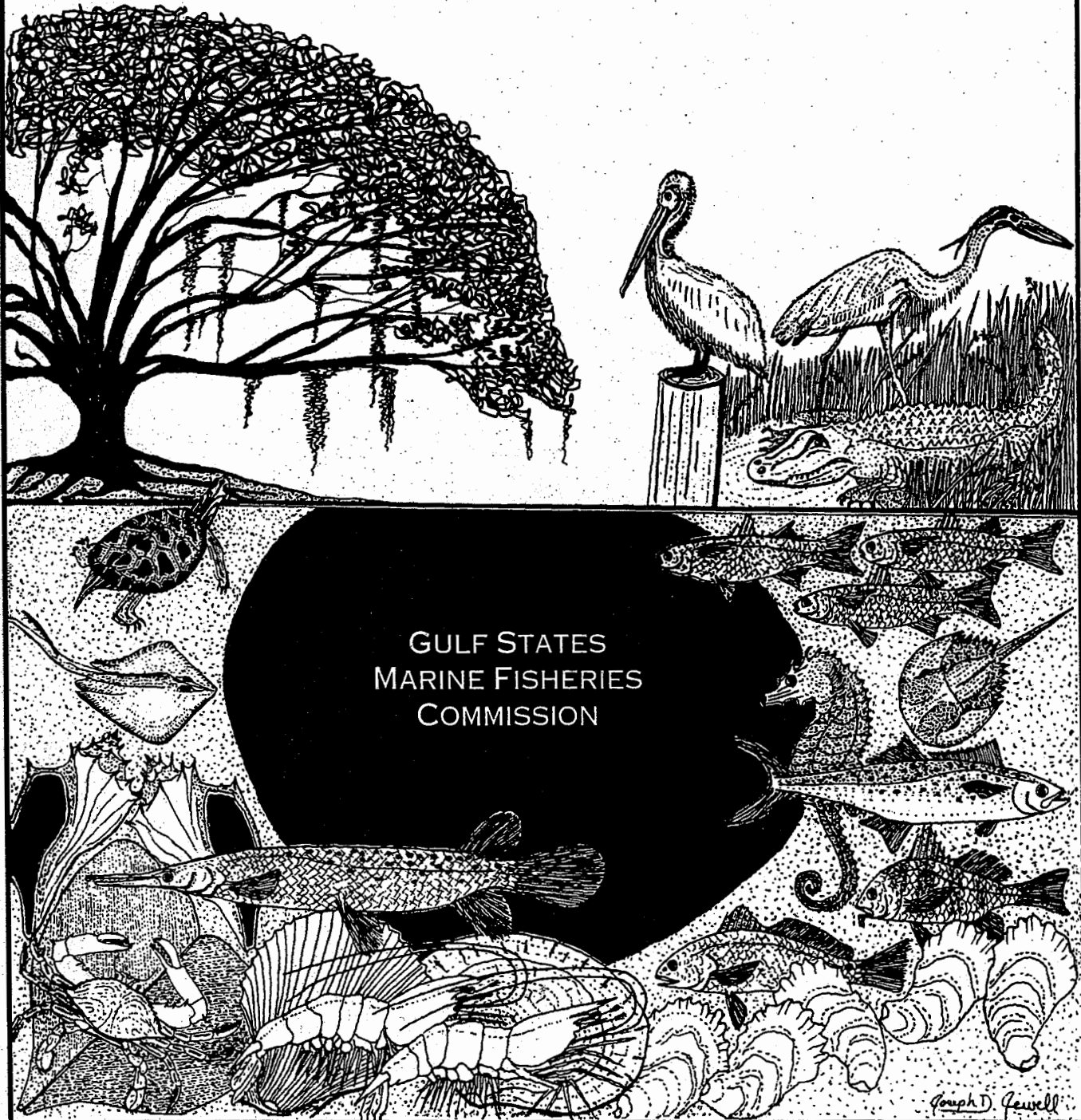


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Forty-Fifth Annual Report
of the
GULF STATES MARINE FISHERIES COMMISSION

FOR THE YEAR 1994



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-FIFTH ANNUAL REPORT
(1994)

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
P.O. Box 726
Ocean Springs, Mississippi 39566-0726
(601) 875-5912

ACKNOWLEDGEMENT

In submitting this Forty-fifth 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-five years could not have been possible without such valued assistance. This acknowledgement 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 toward the realization of the objectives of the Gulf States Marine Fisheries Commission.

Respectfully submitted,

Joe Gill, Chairman
Edwin J. Conklin, 1st Vice Chairman
Larry B. Simpson, Executive Director

Table of Contents

Roster of the Gulf States Marine Fisheries Commission	iv
Commission Officers Elected for Fiscal Year 1994	v
Commission Activities January 1, 1994 - December 31, 1994	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	13
Alabama Department of Conservation and Natural Resources	15
Florida Department of Environmental Protection	19
Mississippi Department of Marine Resources	38
Louisiana Department of Wildlife and Fisheries	43
Texas Parks and Wildlife Department	52
Southeast Region - National Marine Fisheries Service	55
Gulf of Mexico Fishery Management Council	60
U.S. Fish and Wildlife Service	71
Financial Report for the Fiscal Year Ended December 31, 1994	76

Roster of the
Gulf States Marine Fisheries Commission
January 1, 1994 - December 31, 1994

Chairman: Joe Gill

Vice Chairman: Edwin Conklin

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

ALABAMA

Charley Grimsley
AL Department of Conservation and
Natural Resources, Montgomery, AL
Taylor Harper
State of Alabama
Grand Bay, AL
Chris Nelson
Bon Secour Fisheries, Inc.
Bon Secour, AL

Frank Patti
State of Louisiana
Belle Chasse, LA
Leroy Kiffe
Lockport, LA

FLORIDA

Virginia Wetherell
Florida Department of Environmental
Protection
Tallahassee, FL
Allen Boyd
State of Florida
Monticello, FL
Hans Tanzler, III
Tampa, FL

MISSISSIPPI

Joe Gill
Mississippi Department of Marine
Resources
Biloxi, MS
Tommy Gollott
State of Mississippi
Biloxi, MS
George Sekul
Gulf Central Seafoods, Inc.
Biloxi, MS

LOUISIANA

William Perret
Louisiana Department of Wildlife
and Fisheries
Baton Rouge, LA

TEXAS

Andrew Sansom
Texas Parks and Wildlife Department
Austin, TX
Robert Saunders
State of Texas
Austin, TX
Jan 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 D. Bosworth
Staff Assistant

Cheryl R. Noble
Staff Assistant

Commission Officers Elected for
Fiscal Year 1994

Chairman: Joe Gill succeeding Rudy Rosen
1st Vice Chairman: Edwin Conklin
2nd Vice Chairman: William Perret

Committee Chairs

Executive Committee Joe Gill
Technical Coordinating Committee William S. "Corky" Perret
 Anadromous Fish Subcommittee Doug Frugé
 Crab Subcommittee Tom Wagner
 Data Management Subcommittee Henry S. "Skip" Lazauski
 SEAMAP Subcommittee Walter Tatum
Commercial Fisheries Advisory Committee Chris Nelson (moderator)
Law Enforcement Committee Jerald Waller
State-Federal Fisheries Management Committee Larry B. Simpson
 Menhaden Advisory Committee John Merriner

GULF STATES MARINE FISHERIES COMMISSION

ACTIVITIES

The word to best characterize commission activities and marine work in general this year would be "change." In Mississippi, oversight of marine issues was changed by the creation of the new Mississippi Department of Marine Resources and the commission which directs it. The National Marine Fisheries Service changed with the appointment of a new Assistant Director, Rollie Schmitten from the west coast. Change occurred with Congressional and Presidential emphasis on marine resources in the federal budget. Change also occurred in regard to gill net use in state waters. Finally, change occurred within the commission with the appointment of several new commissioners.

Again this year, emphasis on data quality and quantity was in the front of state managers and others. A consensus plan was laid by the commission and states for new and innovative methods to address data of regional and national marine resources. The Recreational Fisheries Information Network (RecFin) and Commercial Fisheries Information Network (ComFIN) programs should be models for future cooperative state/federal data collection and monitoring of our data systems. We look forward to having operational funds for organization next year.

Who would have thought the states would be the leaders in the institution of limited entry programs designed to control effort and overcapitalization in certain fisheries? I didn't but will admit it. The councils are debating use of license limitation and individual transferable quotas (ITQ's) for the red snapper fishery. The state of Texas is considering the use of limited entry for the inshore shrimp fishery, and the state of Alabama is looking into limited entry for gill net fisheries. Next year the management of marine fisheries will be more involved and sophisticated with the possible implementation of these new management techniques.

Larry B. Simpson
Executive Director

MEETINGS/ACTIVITIES OF THE EXECUTIVE DIRECTOR

GULF STATES MARINE FISHERIES COMMISSION

RecFIN/ComFIN meeting with Kemmerer, Brown, & Nichols, Pascagoula, MS - February 1994
Gulf States Marine Fisheries Commission Annual Spring Meeting, Biloxi, MS - April 1994
Barney White, Commission Menhaden Programs, Ocean Springs, MS - June 1994
Gerry Gray of the National Marine Fisheries Service Marine Recreational Fishing Statistical Survey (MRFSS),
Ocean Springs, MS - July 1994
Gulf States Marine Fisheries Commission Annual Fall Meeting New Orleans, LA - October 1994
Conference Call, Interstate Marine Fisheries Commission Executive Directors re: Joint Meeting in Washington DC -
October 1994
Meeting with Scott Nichols re: SEAMAP, Ocean Springs, MS - November 1994
Meeting with Kate Proctor re: Artificial Reef Issues, Ocean Springs, MS - November 1994
Marine Fisheries Advisory Committee (MAFAC), Department of Commerce, Washington DC - December 1994

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL (GMFMC)

January 1994	Shrimp Advisory Panel, New Orleans, LA
January 1994	Clearwater, FL
March 1994	Orange Beach, AL
May 1994	Corpus Christi, TX
July 1994	Islamorada, FL
September 1994	New Orleans, LA
November 1994	San Antonio, TX

MARINE FISHERIES INITIATIVE (MARFIN) PROGRAM STEERING COMMITTEE

May 1994	St. Petersburg, FL
October 1994	Biloxi, MS, Principle Investigators Meeting

OTHER MEETINGS AND ACTIVITIES

Texas Shrimp Association Annual Meeting, Corpus Christi, TX - March 1994
Speaker at Career Day, Gautier Jr. High School, Gautier, MS - March 1994
Speaker at Pathways to Fishing, Department of the Interior, Gautier, MS - May 1994
Mississippi Department of Marine Resources Commission Meeting, Biloxi, MS - July 1994
Retirement of Dr. Tom McIlwain, Ocean Springs, MS - September 1994
GSMFC overview presented to Mississippi Department of Marine Resources Biloxi, MS - September 1994
Conference call, American Fisheries Society Habitat Issues, Ocean Springs, MS - September 1994
Gulf and South Atlantic Fisheries Development Foundation Bycatch Steering Committee, Atlanta, GA - October 1994
Public Hearing re: Gill Nets in Mississippi, Biloxi, MS - December 1994

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 of the National Marine Fisheries Service's Southeast Regional Office (SERO).

In 1994, SEAMAP operations continued for the thirteenth consecutive year. SEAMAP resource surveys included the Fall Shrimp/Groundfish Survey, Louisiana seasonal trawl surveys, Spring Plankton Survey, Spring Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey, and plankton and environmental data surveys. Other 1994 activities included SEAMAP information services and program management.

RESOURCE SURVEYS

In 1994, collection of resource survey information continued for the thirteenth consecutive year. The surveys conducted during the year address distinct regional needs and priorities and provide information concerning the marine resources in the Gulf of Mexico.

Fall Shrimp/Groundfish Survey

The Fall Shrimp/Groundfish Survey was conducted from October 4 to November 22, 1993, from off Mobile, Alabama, to the U.S.-Mexican border. Vessels sampled waters out to 60 fm, covering a total of 410 trawl stations, in addition to plankton and environmental sampling. The main purpose of the survey was to determine abundance and distribution of demersal organisms from inshore waters to 60 fm.

During the survey, the NOAA Ship OREGON II sampled 263 stations in offshore waters and territorial Louisiana and Texas waters. The R/V VERRILL sampled nine stations in Alabama territorial waters. The R/V TOMMY MUNRO sampled 27 stations in Mississippi territorial and offshore waters. The R/V PELICAN sampled 31 stations in Louisiana territorial and offshore waters. Texas vessels sampled 80 stations within their territorial waters.

In addition, ichthyoplankton data were collected by the NMFS and Louisiana vessels at sample sites occurring nearest to half-degree intervals of latitude/longitude. A total of 36 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. The NMFS completed 31 ichthyoplankton stations, and Louisiana completed five stations. The samples, except those taken by Louisiana, will be sorted by the Polish Sorting and Identification Center (PSIC). Once sorted, the specimens and data will be archived at the SEAMAP Archiving Center (SAC).

Louisiana Seasonal Day/Night Surveys

The Louisiana Department of Wildlife and Fisheries (LDWF) conducts seasonal day and night surveys as part of its continuing effort to provide comparative information on the abundance and distribution of critical life stages of major Gulf species, especially shrimp and associated environmental parameters. The sampling design for these surveys has changed little from similar day/night surveys in past years.

Sampling was conducted aboard the R/V PELICAN during four segments: October and December 1993 and March and July 1994. A stratified random station selection design was maintained which varied from the transects previously surveyed. During each segment, 31 stations were sampled during day and night at depths up to 20 fm.

All seasonal trawls were completed with the standard SEAMAP net and doors. All organisms captured were identified, counted, measured, and weighed. Environmental data and plankton/neuston sampling were conducted at trawl stations as well. Plankton samples were archived and sorted at the LDWF Plankton Laboratory. Specimens and data will be shipped to the SAC in St. Petersburg, Florida. The area sampled covered Louisiana territorial and EEZ waters from 28°30' to 29°00' N latitude and from 89°30' to 91°30' W longitude.

Spring Plankton Survey

For the twelfth year, plankton samples were collected during the spring in the northern Gulf of Mexico. The NOAA Ships OREGON II and CHAPMAN and Florida's R/V HERNAN CORTEZ II sampled offshore waters from the western edge of the West Florida Shelf to the Texas-Louisiana border from April 4 to June 10, 1994. A total of 154 stations was sampled. The OREGON II sampled 89 stations, and the CHAPMAN sampled 60 stations. The R/V HERNAN CORTEZ II sampled 19 stations along the west Florida shelf.

Plankton samples were taken with standard SEAMAP bongo and neuston samplers. 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, hydrographic data was collected at all stations.

Right bongo and neuston samples collected from SEAMAP stations will be transshipped to the PSIC. Left bongo samples will be archived at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC). Salinity data from the Florida vessel were sent to the NMFS Mississippi Laboratories for interpretation.

Spring Reef Fish Survey

The third Spring Reef Fish Survey began on June 8 and continued into mid to late fall 1994. Vessels from NMFS, Mississippi, and Florida sampled inshore and offshore waters covering approximately 170 stations in addition to plankton and environmental sampling. Alabama began surveying hard bottom areas in mid to late fall. Texas is procuring the necessary equipment and conducting preliminary work to address any problems. Randomly selected sites from Brownsville, Texas, to Key West, Florida, are chosen from known hard bottom locations. The main purpose of the survey was 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 is 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 will be collected. Also, after the last trap/camera set, one ichthyoplankton station will be 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

During the spring 1994, there was communication between the Shrimp/Groundfish Work Group members to examine the design for the Summer Shrimp/Groundfish Survey and determine the random station locations for each participant. The main purpose of survey was 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 2 to July 18, 1994, where

a total of 351 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 first fall ichthyoplankton survey to assess abundance and distribution of king mackerel eggs and larvae occurred in August 1984. No sampling survey was conducted in 1985; however, expanded surveys in 1986-1993 and in the current year covered Gulf waters from Florida Bay to Brownsville, Texas. Vessels from Florida, Alabama, Mississippi, Louisiana, and the NMFS began surveying September 8 and will continue until October 4, 1994. Stations were located along a 30-minute latitude/longitude grid from inshore waters to the shelf edge.

The NOAA Ship OREGON II sampled 96 stations from Tampa Bay, Florida, to Brownsville, Texas, at depths from 5 to 100 fm. The A.E. VERRILL sampled 9 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. Florida's R/V HERNAN CORTEZ is currently sampling off Tampa Bay south to the Florida Straits area.

Stations were sampled with standard SEAMAP bongo and neuston samplers. In addition, hydrographic sampling was conducted at each station. Right bongo samples collected will be transshipped to the PSIC. Left bongo and neuston samples will be stored at the SIPAC at the Gulf Coast Research Laboratory for possible future sorting. Louisiana plankton samples will be sorted by the LDWF according to SEAMAP protocols and specimens and data provided to the SAC.

Plankton and Environmental Data Surveys

As in previous years, plankton samples and environmental data were collected routinely during most SEAMAP trawling surveys. During the Summer Shrimp/Groundfish Survey, plankton tows were piggybacked on the NMFS and state vessels sampling randomly-generated trawl stations within the standard 30-minute SEAMAP grids. Plankton and environmental data were also taken by Louisiana at all of its seasonal day/night survey stations. Samples were taken by participants with a 60-cm bongo net and a standard SEAMAP neuston net.

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, hydrographic data were collected during the shrimp/groundfish surveys.

Samples from the right side of the bongo nets and neuston samples were shipped to the NMFS-Pascagoula Laboratory for transshipment to Poland where they will be sorted to the family level. 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 1994, as detailed earlier.

INFORMATION SERVICES

Information from SEAMAP activities is provided to user groups through the program administration and three complementary systems: the SEAMAP Information System (SIS), SAC, 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 SIS, SAC, SIPAC, and program information.

SEAMAP Information System

Biological and environmental data from all SEAMAP-Gulf surveys are included in the SIS and are 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 1982-1993 have been entered into the system, and data from 1994 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.

Requested SEAMAP data were used for a multitude of purposes in 1994:

- 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 1992 SEAMAP Biological and Environmental Atlas; and
- Comparing catches of shrimp and groundfish captured by 40-ft versus 20-ft trawl nets.

Data Management

The SIS is decentralized, i.e., distributed. The SEAMAP users are able to locally and directly enter and retrieve data. Software for the system has been distributed to participants for trial runs of data input. This new system overcomes the deficiencies of the old system (i.e., the time necessary to enter and retrieve data) and provides powerful and flexible local data analysis and display capabilities. Under the new system, each SEAMAP site enters, verifies, and edits their data eliminating the mail-oriented loop necessary to enter/edit/verify data under the old system. Secondly, each site has the capability of locally accessing SEAMAP data utilizing a user-friendly system. Local data retrieval allows the data to be accessed in a timely manner with a minimum amount of effort and programming skills. Outside users may continue to 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. Also, SEAMAP participants may use the special request mechanism for data sets too large for economical downloading by telephone.

Real-time Data

A major function of the SIS in 1994 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 the 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 SAC for archiving and loan to researchers. For 1994, approximately 800 vials have been returned from the PSIC. Data entry for most of the returned sorted samples is completed in an improved and simplified DMS. All data are

now managed by a dual microcomputer/mainframe program which eliminates coding errors and facilitates faster data entry. Samples cataloged to date represent 18 orders, 125 families, 234 genera, and 244 species.

The SAC is managed in conjunction with Florida Department of Environmental Protection (FDEP) in St. Petersburg, Florida, and processes both specimen loans and requests for associated plankton survey environmental data. Currently, the SAC is being reorganized and lines of supervisory responsibilities are being changed due, in part, to the departure of Dr. John V. Gartner, Jr., who has done an exemplary job in organizing and running the SAC from its inception. A new collection manager, Ms. Kim Williams, and full-time assistant have been hired. Due to the changing personnel, a backlog of uncatalogued samples has developed, but they are being processed quickly.

SEAMAP Invertebrate Plankton Archiving Center

The SIPAC is in its ninth 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. SIPAC personnel also participate in SEAMAP cruises.

During 1994, a total of 1,085 SEAMAP plankton samples were received and logged into the SIPAC data base. There are 5,836 samples currently catalogued in the SIPAC. Also, there were 47 SEAMAP plankton samples sorted for selected invertebrates using established SEAMAP protocols. A total of 212 lots of specimens were obtained from those samples. To date, a total of 1,358 SEAMAP samples have been sorted for invertebrates, resulting in 5,797 lots.

In an effort to keep the conserve space of the SIPAC collections, sample that have been in the collection for over seven years and duplicate samples received from the PSIC are aliquoted to ¼ their original volume and stored in 100 ml vials. To date, approximately 1,200 samples from 1982-1986 have been aliquoted.

PROGRAM MANAGEMENT

SEAMAP is administered by the TCC SEAMAP Subcommittee 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 program management included the coordinator, data manager, SAC curator, SIPAC curator, and the NMFS-Pascagoula Laboratory director, who serves as program manager.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 1993 and April 1994, in conjunction with the GSMFC Annual Fall and Spring Meetings. All meetings included participation by various work group leaders, the coordinator, the data manager, and the GSMFC executive director. In addition, representatives from the Gulf program also met with the South Atlantic and Caribbean representatives in August 1994 to discuss respective program needs and priorities for 1995.

SEAMAP-Gulf work groups met this past year to provide recommendations to the subcommittee for survey and data management needs. The Red Drum Work Group met in January 1994 to discuss the development of an age and growth study concerning red drum in the northern Gulf of Mexico. The Adult Finfish Work Group met in September 1993 (via conference call) to discuss the election of a new work group leader and development of a sampling protocol for sharks in the Gulf of Mexico. Where additional discussion was needed, the subcommittee also deliberated plans and needs via conference calls.

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 1994. 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.

PROPOSED 1995 ACTIVITIES

Preliminary 1995 program allocations for all three SEAMAP components (Gulf, South Atlantic, and Caribbean) are \$1,340,000. At the August meeting, the SEAMAP components based their allocations on level funding (\$1.34K) for 1995. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be \$602,827.

INFORMATION DISSEMINATION

The following documents were published and distributed in 1994:

- *1994 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, 1993 to September 30, 1994*. 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, 1992 to September 30, 1993*. A summary of 1993 activities and proposed 1994 events for the SEAMAP-Gulf, South Atlantic, and Caribbean programs.
- *Environmental and Biological Atlas of the Gulf of Mexico, 1992*. A compilation of information obtained from the 1992 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.

David M. Donaldson
Program Coordinator

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

The Gulf States Marine Fisheries Commission (GSMFC) provided administrative support for "Cooperative Interstate Fishery Management in the Territorial Sea of the Gulf of Mexico," FWS Grant Agreement No. 14-48-0009-93-1223. The GSMFC furnished services, qualified personnel and materials, equipment, and facilities as needed to perform required duties.

During the period covered by this report (January 1, 1994 - December 31, 1994), the program coordinator sponsored and/or attended/participated in several meetings and planning development activities pertinent to carrying out responsibilities of this grant agreement. The GSMFC arranged and paid expenses for appropriate personnel to attend and participate in selected activities. Minutes, general correspondence, meeting notices, agendas, and other required materials were prepared and distributed to the appropriate persons. Persons authorized to travel have been reimbursed. Minutes of all meetings conducted by the GSMFC under this program are available upon request. Documents completed as deliverables for this grant agreement have been provided to the FWS. A brief report on program progress follows.

Contract Amendment

The original contract provided for the development of stock assessments for spotted seatrout in the Gulf of Mexico region in preparation for the development of a regional, interstate fishery management plan for the species. Funding shortfalls in the GSMFC Interjurisdictional Fisheries Management Program resulted in a slow-down in planning activities; consequently, the development of stock assessments for the species was deemed to be premature. As a result, the program coordinator submitted a contract amendment for a replacement of activities with no change in funding levels. The replacement consisted of deleting the stock assessment language and replacing that activity with organizing the Spotted Seatrout Technical Task Force, initiation of compiling existing data bases, and devising an appropriate strategy for developing stock assessment(s) for the species by the GSMFC Stock Assessment Team. That amendment was approved.

The contract agreement was amended to drop the 1994 stock assessment training workshop, with an agreement to conduct the workshop in 1995. It was learned during 1994 that the National Marine Fisheries Service (NMFS) had received funding from the Environmental Protection Agency's Gulf of Mexico Program to develop a stock assessment primer and hold a training workshop. It was the intent of the NMFS to coordinate with the GSMFC to hold the workshop; however, no one knew the exact time frame that the funding would be available, thus the desire to postpone the activity until 1995 when known funding would be available.

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. As of the close of 1994, a total of 172 samples were collected by the Gulf States and the U.S. Fish and Wildlife Service, approximately 120 of which have been analyzed by Dr. Wirgin as of this report. Preliminary analysis of the data indicate that all fish sampled are of Atlantic coast origin, with the exception of several fish from the Apalachicola River in Florida. This report marks the completion of the second year of a planned three-year effort to collect striped bass DNA data.

Artificial Reef Activities

The TCC Recreational Fisheries Management Subcommittee requested and gained approval to change its name to the TCC Artificial Reef Subcommittee. It consists of the artificial reef program managers in each state, a representative of the Artificial Reef Development Center, 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 develop discussion materials and literature references on a variety of artificial reef materials that have been used in the United States. The ultimate goal of this activity is to produce a report that provides artificial reef program managers and others interested in developing artificial reefs with information on the benefits and drawbacks of using certain materials and recommendations on the most effective and efficient ways to use those materials.

Each subcommittee member has been assigned several material types and have compiled a list of available literature references to the use of those materials. Also, each subcommittee member has developed an outline, as earlier approved by the subcommittee related to the literature references compiled and made contact with individuals that are known to have used the assigned materials in an effort to get information from those individuals. As a reference document, each subcommittee member was provided with a copy of the artificial reef materials document developed by the Atlantic States Marine Fisheries Commission's Artificial Reef Advisory Committee. That document provides a listing of materials that have been used by the Atlantic coast programs, along with a description of their use. As of the end of 1994, the subcommittee has completed about 80% of the first rough draft of the document. During the 1995 project year, the document will be fully reviewed by the subcommittee and other experts and then finalized.

Other important issues discussed by the subcommittee 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 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. Also, the resolution called for the development of a set of guidelines for the proper use of the material. During the December 6, 1994, meeting of the subcommittee in New Orleans, Louisiana, a set of guidelines for using coal combustion fly ash was discussed and approved by the subcommittee. That information will be presented to the GSMFC Technical Coordinating Committee in March 1995 and ultimately at the Commission Business Session for their information and possible action.

The use of army tanks as artificial reef material continues to be an important issue for the subcommittee. It is expected that a large number of tanks and armored personnel carriers will be deployed in the Gulf of Mexico as artificial reefs during 1995. In conjunction with the tank issue, there is a strong possibility that funding will be available from the Department of Defense (DOD) to conduct economic and biological/environmental studies of artificial reefs in the Gulf region. This study will benefit the DOD as well as the state and federal agencies involved in artificial reef development and management. The subcommittee will coordinate that study.

During 1994, special management zones (SMZs) related to artificial reefs became an issue when the state of Alabama petitioned the Gulf of Mexico Fishery Management Council for SMZ designation for the Artificial Reef General Permit areas offshore of Alabama. Special Management Zones are areas in which regulations are in effect that are different from the regulations of surrounding areas. For example, the Alabama proposal asked that the only legal gear to fish for reef fish within the SMZs be hook-and-line with no more than three hooks and spear guns without powerheads. In the Gulf waters surrounding the proposed SMZs, multiple hook lines in excess of three hooks, gill nets, and a variety of other gears are legal for use. The GSMFC Artificial Reef Subcommittee was asked to serve on the SMZ Monitoring Team for the Gulf Council. During that process, the issues surrounding SMZs were fully discussed.

For the past several years, the Sport Fishing Institute in Washington, DC, 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 is in preparation of setting up computer hardware and software to house and maintain the data base as an ongoing activity. 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 this project year, two meetings of the RecFIN(SE) and ComFIN Committees were held, the first January 31 through February 2, in Jacksonville, Florida, and the second on September 26 through 29 in St. Petersburg, Florida. Work is ongoing to complete several activities under the various work groups and subcommittees. 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 1994 RecFIN(SE) and activities will be completed in time for the February 1995 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 1994 program year. Minutes and reports of all RecFIN(SE) and ComFIN activities are available upon request. The program coordinator is currently seeking dedicated funding to support the administrative activities of the RecFIN(SE) and ComFIN.

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 has been collected through SEAMAP for over ten years; however, because of 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 manipulations being done. 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 1994, the R/V TOMMY MUNRO from Mississippi and the R/V PELICAN from Louisiana were involved in the survey study. The vessels trawled side-by-side at designated sites in Louisiana state 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 On-board 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
- the R/V PELICAN was the lead vessel during the survey, with start and end time and depth recorded by the R/V PELICAN for each trawl

The vessels conducted activities on May 9-12, 1994. During this time, a total of 49 comparative trawls was conducted. 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 two vessels. This result is consistent with the results of the first year of the comparative tow study during which the R/V TOMMY MUNRO from Mississippi and the R/V VERRILL from Alabama participated. During that segment of the study, no significant differences between the two vessels was noted.

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

Interjurisdictional Fisheries Management Activities

During this program year, interoffice plans were made to coordinate with the GSMFC Interjurisdictional Fishery Management Program to conduct activities related to the development of an interstate fishery management

plan for spotted seatrout, an important recreational species in the Gulf of Mexico. Ultimately, the plan will result in the development of a stock assessment(s) for the species, as described above. Coordination continues with the GSMFC Interjurisdictional Fisheries Management Program to complete the fishery management plan for spotted seatrout.

The Anadromous Fish Subcommittee initiated efforts to develop a regional, interstate fishery management plan for Gulf sturgeon. That species was listed as threatened under the Endangered Species Act effective October 30, 1991. At that time, the subcommittee agreed to cooperatively develop a recovery/management plan for the species. During this program year, the plan has been completed in final draft form and made available for both technical and broad public review. It is anticipated that the plan will be approved by the appropriate federal agencies through the recovery plan process and by the GSMFC through the interstate fishery management plan process early in 1995.

A stock assessment training workshop planned for the 1994 program year was postponed until 1995 and will most likely be funded through a grant from the EPA Gulf of Mexico Program to the NMFS, as described above.

Miscellaneous

- During the 1994 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 mid-year 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 1994, the Gulf States Marine Fisheries Commission (GSMFC) continued to coordinate and facilitate the development of fishery management plans (FMPs) among the five Gulf States. This effort was authorized by Public Law 99-659, the Interjurisdictional Fisheries (IJF) Act of 1986 and was supported by funding from the Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS).

PROGRAM ACTIVITIES

During 1994, IJF activities were directed toward mullet, menhaden, and spotted seatrout; however, activities associated with interjurisdictional management of other fisheries were also conducted. The following briefly describes the program's activities and accomplishments in 1994.

Mullet

At the end of 1993, the Striped Mullet Fishery Management Plan (FMP) was substantially complete lacking only the economics, sociology/anthropology, stock assessment, and management recommendations portions. Dr. Christopher L. Dyer developed a questionnaire to obtain economical and social data from mullet dealers and processors throughout the five Gulf States. The responses were analyzed, and an initial, rough draft of the section was completed in late October 1994.

A rough draft of the economics section was also completed by Dr. Walter R. Keithly in late December 1994. Following some additional analyses, a complete draft of this section is scheduled for January 1995.

Dr. Behzad Mahmoudi completed a draft of the stock assessment, and it was reviewed by the GSMFC Stock Assessment Team (SAT) at their November 2-3, 1994, meeting in Mobile, Alabama. The SAT determined that various additional data were needed to refine the assessment and made appropriate assignments to gather this information.

The Striped Mullet Technical Task Force (TTF) met on December 8-9, 1994, and conducted an in-depth review of the draft FMP. Numerous assignments were made to "clean-up" previously drafted sections, and the TTF set December 31, 1994, as a target date for completion of all assignments.

Menhaden

Drafts of sections 10, 11, and 12 (management considerations, management recommendations, and research and data needs, respectively) of the Menhaden FMP revision were developed in early 1994 and distributed to the Menhaden Advisory Committee (MAC) for review and comment. Other previously mailed sections were still under review. The FMP revision was reviewed by the MAC at their meeting on April 5, 1994, in Biloxi, Mississippi. Following this meeting, a special work session was held on May 18, 1994, in Baton Rouge, Louisiana. At this meeting of predominantly industry representatives, the entire FMP was reviewed; however, the group focused on data needs for the social and economic sections. A nearly complete draft of the Menhaden FMP revision was developed after the May 18, 1994, work session and mailed to the MAC in September 1994. The draft underwent an in-depth review by the MAC at its meeting in October 1994. The MAC set November 4, 1994, as the target date for completion of all assignments. The stock assessment developed by Dr. Doug Vaughan was reviewed by the SAT at their meeting November 2-3, 1994, and no substantial changes were recommended. The FMP revision has since been prepared for review and approval, and the publication should be available for distribution in early 1995.

Stone Crab

The Profile of the Western Gulf Stone Crab, *Menippe adina*, of the Gulf of Mexico is complete and should be available in early 1995.

Spotted Seatrout

An organizational meeting of the Spotted Seatrout TTF was held on June 21-22, 1994, in Gulf Shores, Alabama. At this meeting, the TTF developed a table of contents and discussed the availability of literature and data to be incorporated into the FMP, particularly the stock assessment(s). Dr. Bob Muller was chosen to coordinate the stock assessment effort in conjunction with task force members, the SAT, the TCC Data Management Subcommittee, and others. Mr. Harry Blanchet was elected chairman of the TTF, and assignments were made for drafting major sections of the FMP. A meeting of the SAT was tentatively discussed for late August 1994 for review of data bases.

Following the organizational meeting, Dr. Muller developed a questionnaire to determine the types and availability of various data to be used in the development of a stock assessment. The questionnaire was distributed to the SAT and others who might help. At their November 2-3, 1994, meeting, the SAT reviewed responses to the questionnaire and also discussed multiple assessments, who would do the assessments, what types of assessments were appropriate, additional data sources, and other questions. They determined that each state would develop an assessment based on available data for the state. The SAT tentatively set June 30, 1994, as the target date for completion of states' assessments and planned to meet in late August or early September 1995 to review results.

The Spotted Seatrout TTF met in Pensacola, Florida, on December 7, 1994, to review progress on assignments from the June 21-22, 1994, meeting. Dr. Muller reported the results of the SAT meeting and other efforts to locate data and develop stock assessments. The TTF reviewed progress by section with the table of contents and noted accomplishments and deficiencies. They revised the target date for completion of assignments to February 28, 1995, and tentatively scheduled their next meeting for March 1995.

SUMMARY

The IJF FMP development and review program of the GSMFC continues to provide the Gulf States with quality information and recommendations for interstate management of fisheries. Additionally, this information is continually being used by the states in their respective programs.

*Dr. Richard L. Leard
Program Coordinator*

ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

MARINE RESOURCES DIVISION

The Alabama 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 40 employees of the administrative, enforcement, and fisheries sections during 1994. A total expenditure of \$2,272,883 was made from the approved budget of \$2,634,284. Revenue of \$2,058,146 was made from federal aid (20%), license fees (58%), marine gas tax (18%), and other sources (4%).

ADMINISTRATIVE SECTION

Responsibilities and Functions

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

Facilities and Personnel

The administrative section consisted of the division director, six clerical employees, one custodial employee, and one mechanical employee for the majority of the year. However, one of the clerical personnel transferred to the enforcement section in August 1994. Offices are maintained at Dauphin Island, Gulf Shores, Bayou La Batre, and Montgomery.

Budget and Expenditures

The administrative section expended \$925,342 on salaries and operational expenses for division activities, part of which was reimbursed under federal aid to fisheries programs.

Accomplishments

Legislation was introduced and passed which established new rules for those licensed as live bait dealers. This bill increased the scope of the law to cover all types of bait. It also established additional areas specifically designated as bait shrimp only, set limits on the amount of shrimp that could be possessed on the boat or truck at one time, and limited live bait shrimping to the hours of 4:00 a.m. to 10:00 p.m. In addition, it set limits concerning the amount of shrimp that could be held in bait shops and the methods by which dead shrimp could be sold as bait. This bill also changed the recreational shrimping limit in waters open to commercial shrimping to 5 gallons per person per day instead of 25 pounds.

A regulation was promulgated changing number and size of red drum which could be caught in Alabama waters. The minimum size is 16" total length (TL), and maximum size is 26" TL. Fishermen are now allowed to keep one fish over 26" but none under 16". This allows fishermen the opportunity to catch a record size fish but affords more protection to the overall stock at the smaller sizes. The king mackerel minimum size was set at 20" TL to coincide with federal regulations and increase stock recovery.

A regulation was also promulgated in a coordinated effort between the Alabama Marine Resources Division and the Alabama Game and Fish Division to address a mutual problem involving the illegal use of saltwater gill nets in areas primarily under the jurisdiction of the game and fish division. This regulation defines areas where nets are prohibited from September 1 to December 31 each year. The regulation will conserve Alabama's fishery stocks by reducing the harvest in areas where, due to behavior, the fish are concentrated and vulnerable to overharvest.

Future Plans

Development of the computerized license system will continue and is projected to be on line in October 1995. Legislation will be introduced to create a lifetime saltwater fishing license. The price for the license will be proportional to the freshwater lifetime license.

ENFORCEMENT SECTION

Responsibilities and Functions

The enforcement section patrols Alabama's coastal waters enforcing state and federal rules on conservation and protection of marine resources. Officers also enforce rules pertaining to boating safety and freshwater fishing and hunting, conduct search and rescue missions, and participate in drug interdiction operations.

Facilities and Personnel

Facilities consist of headquarters at Dauphin Island and district offices in Bayou La Batre and Gulf Shores. At the beginning of 1994, the section consisted of 13 enforcement officers (seven stationed in Mobile County, five stationed in Baldwin County, and the chief enforcement officer stationed at division headquarters). Two officers retired during the year, and two officers were hired.

Budget and Expenditures

Expenditures during the year totalled \$660,081 of which \$25,000 was reimbursed by a grant from the National Marine Fisheries Service (NMFS). Other expenses for shared services and material such as utilities and gasoline were paid by the administrative section.

Accomplishments

Enforcement officers conducted 20,051 hours of boat and shore patrol; made 12,948 boat checks; made 513 seafood shop inspections; and issued 483 citations for illegal activities. Violations of rules concerning finfish made up the majority of citations (55%), followed by oyster (15%), net fishery (12%), shrimp (10%), and other (8%) which include crab, boating safety, hunting, and other state law violations. An officer attended meetings of the GSMFC Law Enforcement Committee, the GMFMC Law Enforcement Advisory Panel, and Interstate Shellfish Sanitation Conference (ISSC) Patrol Committee. An officer was elected chairman of the GSMFC Law Enforcement Committee. Officers attended courses on fish identification, firearms instruction, boating safety, and other state and federal agency law enforcement programs.

Significant Problems 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 the most significant problems.

Future Plans

Programs to upgrade performance of officers, maintain adequate equipment and personnel, and effectively conduct operations are included in 1995 plans.

FISHERIES SECTION

Responsibilities and Functions

The activities of the fisheries section are directed toward management of commercial and recreational fisheries in Alabama's marine waters. These activities are mostly funded through federal aid programs of the

U.S. Departments of Commerce (NMFS) and Interior (U.S. Fish and Wildlife Service). Biological programs not covered by federal aid (i.e., fish kills, oyster management, and pollution investigations) are supported by commercial and recreational license fees.

Facilities and Personnel

Facilities consist of the Claude Peteet Mariculture Center in Gulf Shores and the 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, six biologist aides I, one data entry operator II, one bi-weekly laborer, and one temporary laborer.

Budget and Expenditures

Expenditures in the fisheries section expended \$687,460 which consisted of funds from five federal aid programs and required state matching funds. Federal aid projects varied in state match requirements from 0% to 25%.

Accomplishments

Funds provided by the sale of oyster tags enabled the division to conduct an oyster shell gathering/planting that served both as a biological enhancement to the oyster resource as well as a positive interaction between resource users and management. Both fishery-dependent and fishery-independent data were collected from the resource and resource users and used extensively in development of management strategies.

While the roe mullet fishery is still quite controversial, the progress that has been made in the past year in managing this resource has been quite good. A mullet fishery management plan developed by the division in cooperation with the roe mullet fishermen has been implemented. This plan will allow adequate response time to prevent the over harvest of mullet in coastal Alabama.

Progress is being made towards resolving user conflicts between crab fishermen and an array of other resource users ranging from shrimp fishermen to duck hunters. The division has long viewed this user conflict as a sociological problem and not one with biological solutions. With this in mind, the division contracted with a social anthropologist from the University of South Alabama to develop a series of public meetings with all concerned user groups to present a compilation of suggested solutions to the division. From this information, the division will initiate the development of a blue crab fishery management plan with an intent of establishing management measures which minimize user conflicts while still allowing a viable blue crab fishery.

Federal Aid

Wallop-Breaux - Wallop/Breaux funds are administered through the U.S. Fish and Wildlife Service. Funds used from this source by the division were directed toward the collection of 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; the maintenance of 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 the managing of 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 NMFS, Department of Commerce (DOC), and are presently being used by the division to develop management options for a blue crab fishery management plan and begin writing a profile of Alabama's blue crab fishery.

Cooperative Statistics - Federal aid funds for this program are administered by the NMFS, DOC, and are utilized by the division to collect data on commercial shrimp, oyster, crab, and finfish landings. Additional

information on processed seafood (e.g., 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 this project, and the NMFS has a port agent 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 NMFS.

Southeast Area Monitoring and Assessment Program (SEAMAP) - Funds from this program are administered by the NMFS, DOC, 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. Shrimp landings for Alabama through October 1994 indicated harvest was 10% higher than the same period in 1993. Landings were the highest in the last five years.

NON-FEDERAL AID

Three "fish kills" were investigated by the division during the year. The first was associated with cold water, the second was similar to shrimp trawl bycatch, and the third from insecticide run-off from a golf course.

Biological and enforcement personnel worked together to collect data at oyster check-points, data from which enabled the sound management measures for sustaining the oyster resources. The biological section monitored shell pick-up and planting activities in which 7005 cubic yards of shop shell were planted on Cedar Point Reefs and on plant areas in Portersville Bay.

During the period June-September, 100 obsolete combat tanks were transported from Anniston Army Depot in Anniston, Alabama, and deployed in the waters offshore Alabama as artificial reefs. Nearly 1000 square miles have been designated offshore from Alabama for artificial reef construction. Alabama has the largest artificial reef system in the country. These tanks were inspected to ensure that they met all environmental safety standards before they were deployed. They should enhance the reef fish fishery in Alabama's offshore waters for many years to come. Division personnel worked in cooperation with the U.S. Army, U.S. Navy, U.S. Army Corps of Engineers, Environmental Protection Agency, U.S. Coast Guard, and the Alabama Department of Environmental Management to accomplish this task.

Marking of the public oyster reefs was completed using signs to indicate reef areas to protect them from being damaged by shrimp trawls.

SIGNIFICANT PROBLEMS AND SOLUTIONS

Red snapper fishing off the coast of Alabama in its artificial reef general permit area is the most proficient in the Gulf of Mexico and likely in the entire nation. Problems in administering the program created by a segment of reef builders failure to comply with in-house policies threatened to force the U.S. Army Corps of Engineers to cancel our general permit area. Cancellation of the program would have been a major blow to our very successful artificial reef program and subsequently Alabama offshore fishermen. The division worked closely with the Corps of Engineers and the U.S. Coast Guard in the development of protocol for material inspection used in artificial reefs and for ensuring placement of inspected materials within the designated reef building areas. This protocol spelled out what materials could be used and what was required in preparation and permitting.

FUTURE PLANS

Future plans for the biological section include: the development of a fishery management profile for the Alabama blue crab fishery with recommendations of strategies and regulations for managing the fishery, the establishment of permanent check points in the oyster fishery, the initiation of a trip ticket program for tracking commercial seafood landings, the development of mariculture procedures for commercial important marine organisms, and survey and mapping of the public oyster reefs.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF MARINE RESOURCES

FLORIDA MARINE RESEARCH INSTITUTE

FINFISH

Gamefish and Directed Life History Studies

During 1994, staff provided preliminary stock assessments on pompano, permit, and tripletail to the Florida Marine Fisheries Commission (FMFC). We have examined over 1,500 pompano. Spawning occurs during February-April, and a maximum age of about 7 years is attained. Sampling of juvenile pompano and permit has been conducted in sandy beach habitats since 1992. Staff examined a single sample of 105 tripletail obtained on March 22, 1994, from a commercial fish house on Florida's east coast. Preliminary ages were estimated for 94 fish and ranged from 1-7 years. Only three fish were estimated to be more than 4 years old. Tripletail are fast growing and probably reach sexual maturity at a relatively young age of 1-2 years. We received MARFIN funding to do black grouper research in the Florida Keys. About 30 black grouper were collected.

During 1994, we provided stock assessments on tarpon and snook to the FMFC. These assessments included estimates of life history parameters and mortality rates. In addition, we provided the FMFC with estimates of long-term trends in snook abundance.

Manuscripts on tarpon life history were completed during 1994. Tarpon are capable of living to an age of at least 55 years and reach sexual maturity at a relatively old age and large size. These life history characteristics suggest that tarpon populations could be susceptible to overharvesting. Our mortality estimates and current estimates of the statewide harvest suggest that the highly restricted nature of Florida's fishery is sufficient to prevent overfishing.

We examined 130 bonefish from the Florida Keys in 1994. Studies of age, growth, and reproduction are in progress. Sampling for juvenile bonefish is being conducted on a monthly basis.

About 200 snook were examined from east- and west-coast study areas during 1994. Snook can reach an age of 20 years and attain sexual maturity at 2-3 years. Snook are hermaphrodites; they begin life as males and later transform into females. This previously unreported finding will affect our calculations of total mortality rates. Snook abundance has remained unchanged or has increased over time at east- and west-coast monitoring sites. During 1994, the FMFC considered reducing snook bag limits in Florida but decided that a reduction was unwarranted at this time. The current snook management plan is based principally on the results of FMRI gamefish research.

Four manuscripts resulting from tarpon and snook work have been accepted for publication in peer-reviewed journals, and several others are in preparation or review at the FMRI. We regularly present our results to angler and conservation groups.

Stock Assessment and Population Modeling of Florida's Inshore Species

Since this group began in December 1992, stock assessments for red drum, common snook, spotted seatrout, and sheepshead were completed and forwarded to the FMFC. Of these species, red drum and common snook meet or exceed the FMFC management targets. Sheepshead does not have a management goal yet, but its SPR is about 30%. The current assessment for spotted seatrout used sequential population analysis to estimate regional non-equilibrium SPR (20% on the East Coast, 18% on the Southwest, and 14% on the Northwest) and recruitment trends. Although data were insufficient to evaluate the status of *Paralichthys* flounders, their life history, commercial and recreational landings, and a model to evaluate changes in exploitation were supplied to the FMFC. Other

institute personnel have completed or are working on tarpon, striped mullet, bay anchovy, blue crabs, baitfish, and shrimp. An assessment of Florida pompano is scheduled for early next year. The remaining species in the initial list, Atlantic croaker, is scheduled for later in 1995-1996.

Monte Carlo/bootstrap hybrid models have been developed to estimate harvest reductions associated with bag limits, equilibrium spawning potential ratios (SPR) under different management schemes, and growth of spotted seatrout. These techniques have been used to evaluate over 200 management options for spotted seatrout, evaluating aggregate bag limits, and recovery trajectories for Florida's red drum populations which have been incorporated into reports for deliberations by the FMFC.

A general linear model (GLM) using analysis of covariance has been developed to identify temporal recruitment trends by removing the confounding effects of temperature, salinity, bottom vegetation, different gears, zones, and months within a season, using fishery independent random survey juvenile data. These data were used to tune the spotted seatrout sequential population model. To evaluate whether recruitment trends of juvenile fish indicate later recruitment into a fishery, juvenile sheepshead from the fishery independent survey were compared to estimates of 1-year old fish from a sequential population model. There was some correspondence, although there were only a few years of data.

Other activities include developing an inshore trends report for the FMFC to fulfill a cabinet mandate; participation in the Stock Enhancement Research Facility report to the legislature; participation on federal stock assessment panels such as red drum, mackerels, and reef fish and the SPR Management Strategy Committee; and participation on the GSMFC Stock Assessment Team, Red Drum Task Force, and Spotted Seatrout Technical Task Force. Staff modeled effects of hermaphroditism on red hind SPR for the Caribbean Council.

Baitfish

Spanish sardine data on stock structure (genetic composition), size/age distribution, growth rates, and reproductive and spawning frequency were analyzed for stock assessment. We used information collected on seasonal and spatial distribution of commercial purse seine catch, species composition, fishing grounds, and gear and vessel type to provide a report on description of the purse seine bait fishery in Florida. We completed a hydroacoustic and trawl survey in cooperation with the NMFS's small pelagic program to provide estimates of spatial and temporal distribution and abundance of baitfish stocks along the west coast of Florida. The monthly hydroacoustic-purse seine survey of baitfish stocks in the Tampa Bay region continued.

Data are being processed for future analysis. The adult life history work on thread herring and scaled sardine continued with monthly sampling in the Tampa Bay, Panhandle, and east coast of Florida. These samples are being processed at the present time. Data from the 1994 trawl-acoustic surveys were analyzed to determine spatial distribution and stock abundance of important baitfish species in the eastern Gulf of Mexico. Estimates of stock biomass and potential yield were made for Spanish sardine in the central west coast of Florida. These data were included in a report submitted to the FMFC for management decisions. Data analysis and sampling processing for life history studies of scaled sardine and thread herring were continued during this period.

Mullet

We provided two stock assessment reports on striped mullet to the FMFC. These assessments included estimates of life history and population dynamics parameters, mortality rates, and a fishery simulation model. Based on the results of scientific studies on mullet, the FMFC has adopted several management regulations (i.e., trip limits, area clusters, season closures, and gear restrictions) to protect and manage mullet resources in the state of Florida. We have also analyzed data from the fishery-independent juvenile and adult survey program to assist the FMFC in evaluating the impacts of the management regulations.

Data collected through the fishery-independent adult monitoring program and fishery-dependent catch and effort statistics programs at the FMRI are being analyzed to update assessment of the mullet fishery and to evaluate

the impact of the existing management regulations on fishing effort and the spawning stock biomass. These analyses will be used to prepare an annual stock assessment report to the FMFC later this summer.

BIVALVE FISHERIES RESEARCH

Bay scallop research results have been instrumental to the FMFC in their successful efforts to revise bay scallop management policies in Florida. Stock abundance patterns were applied in determining the location of the fishing closure line. Reproduction and recruitment data were used to support a revision in the season opening and closing dates, and fishing effort survey results were useful in determining bag limits and season opening dates. In addition to the original site at Homosassa Bay, additional research sites in Pine Island Sound, Anclote Estuary, Steinhatchee, St. Joseph Bay, and St. Andrew Bay were established to monitor results of the revised rules. The results have been reported to the FMFC. One peer-reviewed publication has been accepted, and we expect more publications in the future.

Hard clam research results have been used by the FMFC in the development of minimum size limits for harvest of cultured and wild hard clam stocks and for the economic analysis of the Indian River hard clam fishery. Results also have been used by the aquaculture industry and the Bureau of Resource Regulation and Development to determine appropriate lease site locations. Four manuscripts have been published in peer-reviewed journals - one is in press, one is in revision, and two are in preparation.

Calico scallop research results have been used by the industry in their attempts to develop export channels to France. We have one peer-reviewed publication describing the parasite that may be responsible for calico scallop populations collapses that occurred in 1989 and 1991. The information will be used in an attempt to develop a calico scallop parasite monitoring program. One research paper has been published, and additional publications are anticipated as time permits.

CRUSTACEAN FISHERIES RESEARCH

During the year, a manuscript was published describing the population structure and aspects of the life history of blue crabs in Tampa Bay, Florida. A manuscript was published (in collaboration with two researchers from the University of South Florida) documenting the lethal dosage (LD50) for postsettlement juvenile stone crabs of a petroleum-based antifoulant used on stone crab traps. Manuscripts are in preparation describing (1) the effects of temperature and salinity on postsettlement juvenile stone crabs; (2) the timing of spawning and gonad maturation of stone crabs in northwest Florida; (3) the proportion of stone crabs afflicted with a debilitating barnacle gill parasite; (4) the effects of trap soak-time on the catch, population structure, and mortality of trapped stone crabs; (5) the population structure and aspects of the biology of blue crabs in Florida Bay; and (6) the migration patterns of blue crabs in the Florida Gulf of Mexico. Staff provided the FMFC with information on the degradation time of pressure-treated wooden slats used in building stone crab traps and on by-catch in stone crab traps, and we advised the Gulf Council on the configuration of stone crab traps and on stone crab by-catch. Staff presented information concerning population structure and migration patterns of blue crabs and concerning the configuration of blue crab traps to the FMFC, GSMFC TCC Crab Subcommittee, and the South Atlantic States Marine Fisheries Commission Crustacean Work Group. Staff also participated in workshops being conducted statewide, on blue crab trap configuration and by-catch, and participated in the preparation of shrimping-zone maps for the waters off the Big Bend region of Florida. Preliminary maps have been prepared for northeast Florida and southeast Florida waters.

From 1987 to 1994, staff examined over 35,000 stone crabs from northwest Florida waters and the Tampa Bay region. The body size, claw size, sex, reproductive state, injuries, and coloration were documented (for species identification purposes) for all of these crabs. We have documented postsettlement juvenile recruitment grounds in three regions of the Florida Gulf of Mexico. We are developing a long-term database useful for determining whether a stock-recruitment relationship can be developed for stone crabs and whether inter-annual variations in temperature affect reproduction and recruitment on stone crabs. The manuscripts we are preparing that will describe the population structure of blue crabs in Florida Bay and the migration patterns of blue crabs in the Florida Gulf of Mexico are based on field work accomplished from 1982 to 1984 in which we examined and tagged over 15,000 blue crabs.

FISHERIES GENETIC RESEARCH

During 1994, manuscripts were published defining the genetic stock structure of blue crabs and Spanish sardines. Our analysis of blue crabs was performed using only a single, traditional molecular genetic technique. Because controversies rage among states regarding the "ownership" of blue crab stocks, staff are continuing the analysis of blue crabs using state-of-the-art genetic techniques to further clarify blue crab genetic stock structure. Staff conducted morphometric analysis of the Spanish sardines and discovered the underlying reasons for morphological differences seen between juvenile sardines found in embayments and those found in the open ocean. Elucidating the nature of the morphological variation in these fish resulted in a second manuscript currently in review. Also in review is a manuscript comparing the utility of two molecular genetics markers (allozymes and mitochondrial DNA restriction fragment patterns), coloration, and morphometrics in identifying stone crab species and their hybrids and a manuscript describing the genetic stock structure of common snook. Manuscripts describing the genetic stock structure of tarpon (two manuscripts), hard clams (one manuscript), and deep-sea lobsterettes (one manuscript) are in preparation. The FMFC are provided copies of all manuscripts for management considerations upon their acceptance to journals. Copies of our papers will be provided to our management agencies if they are considering management of any targeted species. Regularly scheduled presentations are made to present research results at public forums including meetings of user-groups.

The FMRI staff are defining the genetic variation in wild redfish populations by identifying the genetic variability of each brood released by the hatchery in 1993. Progress has been made toward defining genetic tags for the broods. A hatchery breeding protocol has been drafted, designed to maximize genetic diversity of hatchery-reared fish.

FISH AND INVERTEBRATE ASSESSMENT

The Florida Bay Faunal Assessment Program, designed and initiated in 1994, includes four components: (1) a throw-trap study to compare fish and crustacean assemblages of seagrass-covered banks at six locations with assemblages sampled at the same locations a decade ago, (2) a study to define benthic faunal zones using macromollusks as indicators, (3) a survey of potential juvenile nursery habitat for common snook, (4) a study of the role of tidal creeks in faunal exchange between Florida Bay and freshwater habitats of the Everglades. Throw-trap samples have been obtained as scheduled for both wet and dry seasons, and samples are being processed. Fifteen benthic core samples for mollusks were taken at each of 101 stations evenly distributed throughout the bay for analysis of faunal zonation, and samples are being processed. Three surveys of potential snook nursery habitat have been conducted currently with negative results. Preliminary results of these studies were presented at the Florida Coastal Management Conference in September 1994.

Little Manatee River Fish Community Survey consists of two related components: (1) fish distribution along the salinity gradient in the estuarine portion of the river and (2) fish community structure in seagrass beds at the mouth of the river and in nearby Cockroach Bay. From the first component, 115 species of fish were identified after examination of 1.6 million individuals captured in 1,440 seine hauls and 1,160 trawl hauls. Preliminary results have been presented in eight meetings and symposia, and one paper was published in the Tampa BASIS II symposium proceedings volume. From the second component, 57 species of fish were identified based on examination of 364 collections. Preliminary results have been presented at two meetings.

The East Coast Benthic Faunal Mapping Study sampled over 400 stations with trawls and dredges between 1983 and 1987. All echinoderms, crustaceans, and mollusks from the samples have been identified and enumerated, and the data for crustaceans and mollusks have been computerized and verified. Data for the echinoderms for which identifications were completed during 1994 will subsequently be computerized. Analyses will begin immediately after all data have been verified. All computer files verified to date were submitted to the funding agency (NOAA) this year.

A SEAMAP Hard-Bottom Mapping Study has just begun. A work plan was developed during October 1994, and the identification of data sources has commenced.

In the SEAMAP Reef Fish Assessment Program, fourteen trips to evaluate reef-fish assessment methodology and enumerate species abundance were made from 1989 to 1994. A report on assessment methodology has been completed. Analyses of community dynamics are underway.

The Gulf of Mexico Ichthyoplankton Survey was initiated in 1982. The institute is the designated specimen repository for this program which is funded by SEAMAP. Thus far, more than 150,000 lots of larval fishes have been archived. Three cruises were successfully completed this year. All samples collected during 1992/1993 were received from the sorting center recently, and data are being entered into computer files. All environmental data collected to date have been archived in the NOAA database management system.

During summer 1994, work began on the EPA Environmental Monitoring and Assessment Program - Estuaries. Invertebrates from 38 benthic crab samples taken at 19 estuaries and tidal freshwater sites along the eastern coast of Florida will be identified and counted. Currently, all benthic invertebrates have been extracted from the samples and sorted to higher taxon levels in preparation for identifying them to the lowest possible taxon.

The institute's fish and invertebrate collections contain approximately 75,000 catalogued lots of about 5,000 species. Specimens are lent to other investigators for reference, research, or educational purposes. Last year, 3,347 invertebrates specimens were lent to 22 investigators at 11 domestic and 4 foreign institutions, and 5 other loans of 122 specimens were used for educational purposes. Similarly, 24 loans of fishes (including 3 to foreign institutions) were sent for reference or research uses, and 15 loans were made for educational purposes. Data from collection records, indicative of hardbottom areas, were also provided to the South Atlantic States Fisheries Management Council, and other collection data were provided to other organizations and individuals as requested.

A guide for the identification of colomastigid amphipod crustaceans of the eastern Gulf of Mexico was submitted for publication in 1994 and is currently undergoing final revisions after peer review. The illustrations for a guide to the identification of lysianassoidean amphipod crustaceans of Florida were completed in 1994, and the rough-draft manuscript is nearing completion. Similarly, the illustrations for a guide to the identification of juvenile fishes in the families Sciaenidae, Cyprinodontidae, and Gerreidae have been drafted and are undergoing revision. Several other guides to identify Florida fishes and invertebrates are in preparation as time permits.

CORAL REEF AND HARDGROUND MONITORING AND ASSESSMENT

During the year, monitoring continued at all current sites at Tortugas National Park. Selected sites at Looe Key, sampled in 1983, were re-established and sampled in July 1994. We continued to monitor a transplanting experiment at the MAVRO VETRANIC grounding site at Dry Tortugas where a small area of reef was transplanted to evaluate effects on recruitment (settlement) of organisms onto sacrificed habitat. The hypothesis was that the transplanted organisms would provide progeny or their chemical signals would provide a stimulus for outside settlement. The transplanting procedure proved to be successful; however, survival of transplants was influenced by a major storm during March 1993 which dislodged many organisms and excavated the control site and one experimental site.

We also surveyed damages to coral reefs caused by groundings to the motor vessel MS. BEHOLDEN, attack submarine SSN MEMPHIS, the motor yacht JACQUELYN L, and the research vessel COLUMBUS ISELIN. The legal proceedings in the case of the MS. BEHOLDEN were completed. SSN MEMPHIS actions include a damage assessment and an effort to negotiate with the Navy to pay for damages and restoration. The damage assessment for the JACQUELYN L grounding is a joint state/federal responsibility, and the case is currently in litigation. We are currently participating in evaluations of damages to coral reefs caused by groundings of the freighters SEA LAND ATLANTIC and FIRAT off Broward County.

In cooperation with the EPA and NOAA, a long-term monitoring program for coral reefs and hardgrounds has been initiated. Monitoring sites have been selected. Methodology has been preliminarily tested. A quality control/quality assurance plan is in preparation. Numerous meetings and conferences have been held with staff of EPA, NOAA, consultants, and contractors toward development of a work plan.

Nine liverock aquaculture site surveys were compiled this year, and we participated in numerous hearings, meetings, and workshops on liverock issues.

The National Park Service was provided with a report on trends in coral populations at Dry Tortugas from 1989 to 1993. Reports on our research were published in the *Proceedings of the 7th International Coral Reef Symposium*, Guam; *Proceedings of the Florida Keys Regional Ecosystem*, Miami; and *Proceedings of the Colloquium on Global Aspects of Coral Reefs: Health, Hazards, and History*, Miami.

FISHERIES STATISTICS

Fisheries Independent Monitoring Program

Fisheries independent monitoring of fishes continues in the Tampa Bay, Charlotte Harbor, Indian River, and Ft. Walton Beach areas. The Florida Bay 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 is currently 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 East Coast Gill Net Observer Program, the federally-run EMAP Program, the Mercury Concentration in Fish Program, and the Recreational Survey and Angler Interview programs.

Commercial Landings Statistics

Information on commercial harvest of fish and invertebrates is processed into Florida's Marine Fisheries Information System through which approximately 400,000 trip tickets are processed annually. 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 determination of participation in fisheries. These data were used to help qualify fishermen for red snapper federal permits in 1992-1993 and 1994-1995, an analysis of fishermen and dealers potentially affected by the amendment which places limits on marine net fishing as well as numerous analyses of landings, effort, and gears used in a wide spectrum of Florida fisheries were completed in 1994. 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, Ft. Charlotte, Marathon, Melbourne, and Ft. Walton Beach with program expansion to the Cedar Key Field Laboratory and Jacksonville area scheduled for FY 1995-1996. This program provides for many 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 participation, and measurement of more than 172,000 fish from 2,423 trip interviews over the last 3 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 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, and management issues and other purposes.

SOUTH FLORIDA REGIONAL LIBRARY

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. During the 1993-1994 fishing season, we completed 192 onboard surveys and received 351 mail surveys from the 718 fishermen who own over 100 trap certificates. Total commercial harvest was 5.4 million pounds. Over 1,000 recreational surveys were returned. The surveys indicate that 320,000 pounds of lobster were landed in the special two-day sport season, and 1.4 million pounds was harvested in the first month of the regular lobster season. Estimates for the 1994-1995 fishing season indicate that commercial landings may exceed 8 million pounds, and the recreational harvest appears to have increased. The third group in the fishery are holders of the special recreational crawfish license, and in 1994 they were required to report their landings. Landings for these 492 license holders were approximately 51,000 pounds during August.

The queen conch research program continued to focus on monitoring populations, larval and juvenile production, and stock rehabilitation. The overall stock abundance changed little since the surveys began. However, the sizes and densities of local aggregations continued to fluctuate widely. An artificial conch diet was developed in cooperation with Purina Mills. The diet significantly decreases the cost of juvenile husbandry. Juvenile cage culture systems were developed which enhanced growth and limited shell damage caused by routine handling. Water quality controls including a computer-controlled ozone injection system were instituted in the larviculture water system and resulted in enhanced production. Approximately 750 juvenile conch were released in nearshore experiments. As in previous releases, mortality was greatest at the period of the full moon. Plans for 1995 are to release several thousand conch in an expanded evaluation of release success.

PLANKTON BLOOMS

Florida Bay is still experiencing persistent and dense microalgal blooms often (but not always) dominated by cyanobacteria (= blue-green algae). These blooms were mapped and studied monthly in order to gather information on possible indicator species and their distribution. Researchers also collect data and performed analyses to determine chlorophyll concentrations, total particulate loads, and nutrient concentrations. Plans were made to include additional analyses in 1995. With the nearly year's worth of data collection during 1994, data synthesis is expected to begin in 1995.

A red tide bloom caused by the dinoflagellate *Gymnodinium breve* began in September 1994 and lingered into January 1995 at which time the bloom was still causing fish kills south of Sanibel Island (southwest Florida coast). In previous years, bloom in this position at this time of year has occasionally been transported to the Atlantic coast of Florida or as far north as North Carolina; shellfish authorities have been alerted about the possibility of a bloom coming ashore on Florida's east coast, and North Carolina personnel have also been notified although they believe that their local temperatures may be sufficiently reduced to make a bloom event unlikely.

STOCK ENHANCEMENT RESEARCH

The Cooperative Marine Fish Stock Enhancement Research Program concluded eight years of enhancement and assessment research with a Legislative Executive Summary and Report in March 1994. The report was positive and well received. The research in Volusia County and Tampa Bay was reduced, and all of our enhancement efforts with red drum were shifted to the restoration of Biscayne Bay for the next three years. In July 1994, a new cooperative snook enhancement and assessment project was initiated for three years with a possible two year extension to develop snook enhancement technology.

Hatchery Operations

Fingerling Production (from 1993 production) - In March 1994, 4,844 phase III west coast fingerlings were harvested from two ¼-acre ponds, tagged by SERF and juvenile fish personnel (½ with T-bar and ½ with dart tags), and all but 300 (held for a tag-retention study) were released into the Alafia River. There were 1,410 phase III fingerlings internal anchor tagged and released into Tampa Bay at a surface water improvement and management (SWIM) restoration site at E.G. Simmons Park north of Ruskin, Florida. The remaining phase III fish were freshwater-dipped as a treatment for the parasitic copepod *Caligus* and restocked in another ¼-acre pond until May 19 when the fish were used for the Florida Boating and Fishing Buddies event at Ford DeSoto Park, Florida.

In March 11, 1994, 20,000 phase II east coast red drum fingerlings were transported to the University of Miami Experiment Hatchery (UMEH) for growout. On March 16, an additional 11,675 phase II were sent to UMEH. On March 11, 16,200 phase II fingerlings were transferred to the Florida International University (FIU) for phase III growout.

In April 1994, 491 phase III west coast red drum were harvested from a 1-acre pond. Fifty fish went to the FMRI genetics and 441 were tagged with internal anchor tags and released at a SWIM site, Mangrove Bay, in northeast St. Petersburg.

Spring 1994 Production

Egg Production - The total spring east coast red drum egg production was 90,106,000 from 2 brood tanks of red drum. There were 60,000 eggs shipped to the University of Florida (UF) Whitney Lab, and 120,000 eggs were shipped to the UMEH by Federal Express.

Fingerling Production - Seven 1-acre ponds were stocked with 1,242,000 2-day old fry between May 28 and June 17 to supply fingerlings to the UMEH, the FIU, and for direct release into Biscayne Bay. The ponds were stocked during the evenings to avoid high temperatures.

A total of 351,355 phase I fingerlings were harvested from the 7 ponds (a mean of 50,194/pond; mean survival of 28.1%/pond). Of this total, 288,136 were transferred to the UMEH; 20,085 to the FIU; and 66,106 were used by fish health for oxytetracycline studies.

Fall 1994 Production

Egg Production - The fall 1994 east coast red drum egg production was 170,582,000 from 5 tanks of broodstock. Photoperiod regimes were modified from traditional methods so that egg and fry production improved and less manpower was required. The 10 hour photoperiod was set back to begin at midnight.

Fingerling Production - Fourteen 1-acre ponds were stocked by December 1 with 2,383,399 2-day old fry. Two innovative methods were initiated to maximize production and the use of the facility. Pond stockings were started in August and continued to December; some ponds were stocked and harvested twice. A total of 658,287 phase I fingerlings were harvested from 9 ponds (a mean of 73,143/pond; mean survival of 40.5%/pond). There were 41,000 phase I fingerlings into 6 ¼-acre and 5 1-acre ponds. There were 44,000 phase II fingerlings harvested, tagged with coded wire, and released into Biscayne Bay. There were 4 1-acre phase I ponds remaining to be harvested and 5 1-acre and 6 ¼-acre ponds in phase II production.

Three ¼-acre ponds were filled, fertilized, and maintained from the end of July to the beginning of September 1994 for culturing zooplankton for larval snook rearing at Mote Marine Laboratory and for possible pond stocking of pre-fed snook if the larvae were available. No ponds were stocked with snook.

Assessment

Primary stock enhancement assessment areas are Volusia County, Tampa Bay, and Biscayne Bay. Volusia County field sampling by biological crews was terminated in February 1994, but fishery-dependent returns continue to be received from anglers. A total of 16,001 internal anchor tagged red drum were released into Volusia County waters, and 513 returns or 3.2% have been recovered. One particular release of 952 fish into the primary Volusia County assessment area of Spruce Creek has currently yielded 100 recaptures (10.5%). Tampa Bay releases have yielded about 1% returns, and Biscayne Bay has yielded about 0.4% recaptures to date.

The emphasis for red drum enhancement will be on Biscayne Bay for the next three years. The FMRI has four fishing-license funded contracts in place with Biscayne Bay area cooperators including the UMEH and FIU. Current plans are to release over 400,000 one inch; 114,000 three inch; and 35,000 six to seven inch fingerlings into Biscayne Bay from the fall 1994 production season. Assessment will be fishery-independent means through UMEH and FIU under contract and by fishery-dependent means through angler recovery.

ENDANGERED SPECIES

Sea Turtles

The 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 (research) and to minimize human impacts which result in increased mortality, degrade habitat, and impede recovery of listed turtle species (management). The current program is divided into six major components: (1) recovery program planning, management, and administration; (2) biological/ecological research and population assessment; (3) coordination of research and management activities; (4) assessment of mortality factors; (5) habitat protection; and (6) education.

Research carried out by program staff during 1994 addressed the following topics (1) the distribution, abundance, life history, and ecology 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.

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 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 six permits were issued for 1994 including 23 in-state and 8 out-of-state permits issued to public aquaria or marine science centers to display marine turtles for public education. The management program included drafting a revision of FAC Rule 62R-1 which regulates the permitted "take" of marine turtles for research, conservation, and educational purposes. 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 FDEP continued to coordinate the Florida portion of the Sea Turtle Stranding and Salvage Network (STSNN), an 18-state program coordinated at the federal level by the NMFS. During 1994, 759 stranded turtles were recorded by the Florida network. Department staff coordinate statewide activity of permitted volunteers, as well as data entry and verification. Data analyses contribute significantly to management decisions such as the regulation of fisheries that impact marine turtles.

The marine turtle program contributes to the protection of marine turtles and their habitat by staff participation 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. The only dedicated funding for the program consists of revenue generated from the sale of marine turtle decals, primarily associated with boat registrations.

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 programs areas include carcass salvage and necropsy, population assessment/aerial surveys, satellite telemetry, and geographic information systems (GIS).

During 1994, the manatee carcass recovery program documented 192 manatee deaths in Florida. This level of annual mortality is unprecedented and represents approximately 10% of the estimated population. Moreover, this mortality was not associated with any catastrophic event such as extremely cold weather. A total of 49 manatees died as a result of collisions with watercraft. Sixteen manatees died in water control structures this year. This is the highest level of structure-related mortality on record. The increase in this mortality category is associated with extremely high water levels requiring greater gate activity. Serum samples collected from wild manatees were submitted for serologic studies of various potential pathogens. Some analyses measuring concentration chemicals in tissues were completed. It appears that few chemicals persist in manatee tissues. 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 were conducted twice-monthly in 1994 in several areas including St. Johns River and tributaries in Duval, Clay, Putnam, St. Johns counties, Tampa Bay, Lee County, and the Wakulla and St. Marks Rivers in Wakulla County. During August 1994, strip-transect aerial surveys were conducted in the Banana River to develop survey procedures for measurement of manatee population trends in the warm season. Scientists from the FMRI and the University of Wisconsin conducted statistical analyses of winter manatee counts of power plants from 1977 to 1992. Trends in counts were assessed after adjusting counts for temperatures prior to each flight.

Telemetry project staff monitored 16 manatees along Florida's west coast during 1994. Six of the manatees tracked during the year were rehabilitated animals. As in previous years, manatees tagged in Tampa Bay ranged as far south as the Ten Thousand Islands. Other research projects that occurred in conjunction with the capture of manatees for tagging included: blood collection for genetic analyses, hematology studies and sera for manatee serum bank, the taking of photographs for a 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 individual animals. PIT tags were implanted in 20 animals during 1994.

Processing and analysis capabilities of the GIS project were expanded with the purchase of another work station, two large hard drives, a CD reader, and an optical drive. Project staff continued to build and maintain databases of manatee aerially-surveyed locations, telemetry, mortality, and maps representing physical features of Florida. Analyses conducted during 1994 focused on estimating manatee abundance from aerial survey data and deriving manatee travel paths from satellite telemetry data. The multi-agency GIS Coordinating Team and the Manatee GIS Working Group each met twice during 1994.

COASTAL VEGETATIVE HABITAT ASSESSMENT

Projects in this study are designed to restore, enhance, or assess vegetative marine fisheries habitats such as seagrass beds, saltmarsh communities, and mangrove stands. Construction on plant production facilities at the Port Manatee hatchery have progressed very well; the minimum requirements for the hatchery's waste water permit are almost complete. A grant was received that will allow additional plans to be put in place. Restoration research in St. Joe salt marshes that had experienced a plant die-off continued; plants from different resources and stock were planted to determine which would be most successful for larger scale restoration. Researchers have successfully generated plants from tissue of the seagrass *Rangia* that have survived in the field so far. The benefit of generating plants from tissue is that less destruction of natural beds is necessary because culture from tissue requires fewer plants than transplanting does. Studies in Florida Bay continue: investigation of the seagrass and mangrove die-offs and the effect of present environmental conditions on selected plant and animals that are closely associated with seagrass beds.

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 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 the 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. In August 1994, the FMRI staff took computers and these databases to a FMFC meeting in Ft. Walton Beach 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 the FMFC, the FDEP, citizens, and industry representatives. The representation of the shoreline conditions relative to the proposed zones reduced confusion and fostered more expedient policy analysis. CAMRA continues to develop these computer capabilities as well as additional databases and traditional maps for additional regions and issues.

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. In 1994, the Shellfish Assessment and Enhancement Section collected 261,756 bushels of shucked oyster shells and processed calico scallop shells and deposited 245,000 bushels of shells to restore public oyster reefs in Apalachicola Bay; 210,000 bushels were deposited as part of an emergency assistance project to aid dislocated oystermen following tropical storm Alberto.

The Florida Legislature appropriated \$459,400 as part of a statewide commitment to rehabilitate and develop productive shellfish resources for FY 1994-1995. Funding was allocated among seven coastal counties including

Levy, Dixie, Wakulla, Franklin, Bay, Okaloosa, and Santa Rosa. During 1994, 166,613 bushels of live oysters and 105,120 bushels of dredged shell (mud clam and oyster) were planted during resource development projects.

Marine resources information system statistics (unedited data) showed statewide oyster landings in 1993 were 3.1 million pounds valued at \$7.5 million. Franklin County landings accounted for 2 million pounds and were valued at \$4.7 million in 1993. Landings in 1994 are expected to decline as a result of flooding and associated low salinity in Apalachicola Bay resulting from the passage of tropical storm Alberto in July 1994. To date in 1994, the department has issued 749 Apalachicola Bay oyster harvesting licenses generating \$74,900 in user fees for the Apalachicola Bay Conservation Trust Fund (FY 1994-1995).

Preliminary reports indicated that hard clam landings in 1993 remained relatively stable at about 1.37 million pounds with an approximate value of \$6.8 million. Production trends suggest that landings will remain relatively stable over the short term as harvesters continue to harvest from a set of hard clams in Body C of the Indian River. Brevard County, which produces the majority of Florida's hard clam landings, is also the center of the hard clam aquaculture industry. This emerging industry was expected to contribute substantially to hard clam production during 1994.

Hard clams harvested from waters classified as restricted or conditionally restricted must be processed through relaying and depuration activities rigorously controlled by the Florida 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 1994, the division issued 33 special activity licenses to relay shellfish to private leases, and one license was issued to a depuration facility using controlled purification methods.

During 1994, 320 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 10 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 1994, there were 150 shellfish leases in effect totalling 2,000 acres. Additionally, 187 aquaculture leases issued under the provisions of Chapter 253, F.S., are in effect (750 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% of Florida's 2.4 million acres of coastal waters have been classified in 58 shellfish harvesting areas (SHAs). In 1994, ten comprehensive shellfish surveys were completed, and two shellfish management areas were reclassified as part of continuing efforts to maintain proper classifications in SHAs. The shellfish laboratory analyzed 198 shellfish meat samples; 31 crab meat samples; 23,186 SHA water samples; and 380 potable water and ice samples to insure shellfish quality during 1994. Additionally, 7,959 SHA water samples were analyzed by independent laboratories that contract with the department. The division certified 133 shellfish processing plants in 1994.

OFFICE OF PROTECTED SPECIES MANAGEMENT

The FDEPs manatee program is funded principally by the Save the Manatee Trust Fund which receives the majority of its funds from voluntary contributions. Additional support is provided by the USFWS, the Save the Manatee Club, the Marine Mammal Commission, and other groups in the form of equipment loans.

RULE MAKING

Prior to 1994, manatee protection speed zone rules were approved in 11 of the 13 counties designated by the Governor and Cabinet in 1989 as key counties - Brevard, Broward, Citrus, Collier, Dade, Duval, Indian River, Martin, Palm Beach, Sarasota, and Volusia counties. During 1994, rules were approved for St. Lucie County and development continued for Lee County. A preliminary rule for Lee County was further refined in 1994. A

comprehensive, county-wide rule is anticipated to be promulgated by the summer of 1995. Additional rulemaking was also undertaken in Volusia and Brevard counties.

In 1993 following a local court ruling nullifying the original Volusia County rule and passage of an emergency rule to reinstate the rule and provide clarifying language, the FDEP proposed a modified rule to replace the original rule. This rule (16N-22.0121, Florida Administrative Code) was approved in 1993 but was subsequently repealed after the local court ruling which had nullified the original rule was overturned by the Fifth District Court of Appeals in favor of the FDEP. Concurrent with the repeal of Rule 16N-22.0121, F.A.C., the FDEP amended the original rule to incorporate most of the changes included in Rule 16N-22.0121, F.A.C. with the exception of zones within the vicinity of the Lake Woodruff National Wildlife Refuge where the original slow speed zones were retained. Approval of the amendments and repeal occurred in May 1994. Volusia County and a local boating group appealed the FDEP's actions to the Florida Land and Water Adjudicatory Commission; the commission ruled that the rule properly implemented the Manatee Sanctuary Act (Section 370.12(2), F.S.).

Also in 1994, the FDEP initiated rulemaking to amend the Brevard County manatee protection rule to increase protection in the vicinity of the Canaveral Barge Canal and Sykes Creek. The proposal was published and finalized in 1994.

Numerous conditional exemptions were issued during 1994 to commercial fishermen and professional guides in accordance with provisions provided in the specific county rules and Rule 16N-22.003, F.A.C. Site-specific exemptions were also issued to several boat/motor manufacturers for testing purposes as well as to individuals for access to residences located within state-designated "No Entry" or "Motorboats Prohibited" 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. As of 1989, approximately 20 such areas had been designated and posted, and more areas were proposed. Prior to 1983, the Florida Marine Patrol was responsible for posting and overseeing the maintenance of regulatory signs. Between that time and late 1990, the marine mammals section of the Florida Marine Research Institute (FMRI) assumed the responsibilities and recommended zone designations, posting of approved areas, and maintenance of signs. 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.

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, and 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.

In 1993, responsibility of the FDEP manatee sign posting program was transferred from the Office of Protected Species Management (OPSM) to the Office of Waterway Management. Posting regulatory signs on waters of the state of Florida, particularly those in or adjacent to federally maintained channels, requires cooperation from a host of state and federal agencies and is often complicated by jurisdictional ambiguity. Disagreement between

agencies over the number of signs needed as well as the location, size, and text of some signs has caused unfortunate delays in the completion of posting these zones.

During 1994, zones in Indian River and Brevard counties were completed. Maintenance and improvement of sign plans in other counties were also done, although much work still needs to be done in most counties. An unexpected benefit from the combined efforts on rule-making and sign posting has been an increase in public awareness with the signs serving not only as reminders of the speed zones but also as educational and informational reminders of the existence of this endangered species in the posted waters.

MANATEE PROTECTION PLANS

The FDEPs manatee protection plan (MPP) staff continued coordinating the development of county-wide MPPs and assisting counties with these efforts. The focus of the 1994 effort was again to concentrate time and resources in the 13 key counties. In Citrus County which has an adopted MPP, staff efforts have focused on implementing the plan, attending local coordination meetings by the USFWS, coordinating aquatic plan management efforts, and making recommendations on various permits.

The MPP program is unique in that it is a cooperative program and not one established under a mandate with a dedicated funding source. This has been one factor influencing priorities for funding and staff allocations over the past three years. Priorities have been set based on known mortality problems, interest from key counties, pressure from development interests, and local funding. Due to the cooperative nature of the program, changing priorities, and limited resources, there is much variety in the status of the 13 county programs.

Brevard, Dade, Collier, and Duval counties have been the most active; all but Brevard County have draft plans. Broward County's Board of County Commissioners approved a MPP in April 1993 and implemented some provisions of the plan such as speed zones and education programs. However, since the plan did not address boat facility siting, it cannot be approved by the FDEP.

Boating studies were completed in two counties, Brevard and Dade, prior to 1994; two are underway in Indian River and Volusia counties; and two others in Collier and Palm Beach counties were completed during 1994. Additionally, the draft of a boat facility siting study for Palm Beach County was submitted to the FDEP by the Treasure Coast Regional Planning Council.

Although only Citrus County has an official plan, substantial progress has been made in the process of developing the other plans. For instance, through this program areas of mortality problems have been identified and steps taken to correct them. The Miami Airport Canal deaths offer one example; two permanent barriers were installed to prevent access to the underground canals at the Miami Airport where manatees were getting trapped and drowning or starving to death. Other issues come up that are addressed without having to be included in a MPP.

One of the most positive spinoffs of the MPP is that the OPSM has developed local awareness and expertise in each of the 13 key counties. The OPSM either hired someone temporarily or the county-dedicated staff, who are gaining technical expertise in manatee and ecosystem concerns. The OPSM has initiated dialogue and coordination meetings with local planners and environmental staff, permit issuers, aquatic preserve staff, and others having marine resource concerns. Through the MPPS, the OPSM has facilitated interagency coordination among all levels of government from federal to local. Another positive result of MPP development is MPP education committees are coming up with many ideas which address not only manatee mortality but environmental preservation as well.

PERMITTING

The OPSM continued the evaluation of permit/lease applications for marine and coastal projects and events and the preparation of protection recommendations for those projects/events which could result in significant adverse effects to manatees and/or manatee habitat during 1994. Mortality, abundance, and distribution data were used in the review of proposed projects to determine potential adverse effects. SA and ArcView software and GIS-generated maps were used to access these data. Meetings with applicants and their agents as well as other government agency

personnel were also part of the review process. Data entry of project information for tracking purposes was accomplished by an OPS staff assistant using dBase IV.

A total of 441 permit/lease applications, developments of regional impacts, marine events, and associated correspondence were received, and 378 were reviewed in 1994. Of these projects, 127 were determined to be "critical" because of size, location, complexity, or potentially deleterious effects of manatees or manatee habitat. Of the 378 applications reviewed, 50 were sent to the department of community affairs (DCA), regional planning councils, the U.S. Coast Guard, the Tampa Port Authority, water management districts, counties, or municipalities.

HABITAT CHARACTERIZATION, ASSESSMENT, AND PROTECTION

The manatee habitat protection section is responsible for coordinating reviews of manatee habitat-related issues for the FDEP including collection and assimilating reference information concerning manatee habitat issues, review of pertinent inter- and intradepartmental efforts dealing with manatee habitat protection, coordinating agency working groups in areas of special concerns 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 continue to be obtained and assimilated to provide managers with access to information needed for manatee habitat management efforts. The FDEP staff also coordinated with the FMRI and water management district offices to obtain GIS information for the development of seagrass maps in regions of the state used by manatees.

Staff of the FDEP began the development of an administrative rule for the protection of seagrass as manatee foraging habitat under the authority provided in Section 370.12(n), F.S., and 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 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 Plant Management, and Office of Protected Species Management.

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 1994 CARL proposal list. The habitat section also acted as an information resource by reviewing and providing comments or requested information for numerous extra and intradepartmental projects dealing with manatee habitat concerns.

MARINE RESOURCES GEOGRAPHICAL INFORMATION SYSTEM

"Geographical Information System" (GIS) is generic terminology for a computer system that analyzes and handles spatial or geographical data. It is designed to handle large volumes of such data from different sources; the data is then manipulated, analyzed, and displayed as directed by the user. A key function is utilizing coreferenced layers of data to create files that either pictorially or numerically present answers to queries.

The marine resources geographical information system (MRGIS) is a geographic information system containing spatial databases dealing with marine, freshwater, and wetland natural resources in Florida. It also contains certain hydrologic and human-related features. The complete system will give other agencies access to data to be used in project planning and review with a view toward minimizing negative effects on the manatee population and its habitat. Local governments are using the geographic information system in the production and implementation of their comprehensive growth management plans.

Within the endangered and protected species program, the MRGIS allows research and management personnel to explore protection and management options more fully before they are implemented. Layers available

for manatee-related uses may include aerial sighting locations, radio and satellite telemetry locations, carcass recovery sites, water depths, vegetation coverage, channel and regulatory sign locations, boating speed zones, and shoreline development characteristics. The data and mapping provided by the GIS are used extensively in the preparation of manatee protection speed zone rules and manatee protection planning efforts.

The Manatee GIS Coordinating Team met in February 1994. The group is comprised of representatives from the FDEP, USFWS, National Biological Survey, the Marine Mammal Commission, and an independent GIS expert. The team was created to develop and implement an operational plan for the Manatee GIS. To assist in this task, the team organized the Manatee GIS Working Group and held an initial meeting in June. The working group is composed of representatives from agencies and organizations likely to contribute to or use the Manatee GIS. Goals for the first meeting were to inform working group participants about the Manatee GIS and identify issues that members want to resolve. These issues fell into categories including database development and use, analytical techniques, ecosystem management, and participants expectations for the group. Over 70 people attended the working group meeting; future meetings will deal with GIS topics identified at the initial meeting. Database development continued with routine entry of monthly mortality records. Data for most of the aerial surveys flown within the state over the last ten years have been entered, and the verification process is nearly complete. Additional small waterways were digitized to extend the statewide base map. Other relevant spatial data sets continue to be created and incorporated into the MRGIS including the 42 aquatic preserve boundaries and aerial survey flight paths from historic data. Integration of coordinates from global positioning system receivers was also used to create data layers for ongoing aerial surveys. Data from the ongoing west coast satellite telemetry project were also processed and preliminary analyses were initiated.

Spatial analyses of mortality, aerial survey sightings, and telemetry data were tested, reviewed, and refined in conjunction with input from project scientists, managers, and the GIS Coordinating Team. Aerial survey data analysis focused on transforming data points indicating individual sightings to abundance patterns within the survey route. A similar approach using mortality data was conducted. Both analyses show potential for increasing the ability of both research and management personnel to better visualize and quantify the distribution of deaths and sightings. Refinement of the techniques is ongoing. Using telemetry data, programs were developed to estimate minimum travel distances between known animal locations while keeping the travel path in the water. Travel distances were used to test the effect of spatial filter size on the aerial survey analyses and to examine the relationship between animal size and movement patterns.

The manatee program's Tallahassee GIS section received GIS data from the FMRI as they completed it. Map format was standardized using criteria established by the Manatee GIS Coordinating Group. An OPS CAD technician was hired in May 1994. In addition to working on AutoCAD rule maps, the position will be used to work with the newly acquired 35 mm slide maker and several newly acquired graphic programs. The Tallahassee GIS section distributed 540 GIS maps, 30 AutoCAD maps, 42 SA prints, and 41 digital data sets. The process of converting speed zone maps from AutoCAD to ARC/INFO has been started and should be finished in the 1995 fiscal year. In addition, technical assistance was provided to GIS groups in Law Enforcement, Recreation and Parks, State Lands, and the Georgia Department of Natural Resources.

PUBLIC INFORMATION AND EDUCATION

During 1994, many steps were taken by staff to educate the public concerning the endangered manatee. Close to 1,000 requests from around the world was responded to; press releases were issued on a regular basis addressing issues such as annual mortality figures, the Voluntary Contribution Campaign, and Manatee Awareness Month. Educational materials were updated on a continuing basis throughout the year. Manatee information was distributed to newcomers through interested local chambers of commerce. Samples of our educational and informational materials were supplied to various county governments for their use in preparing the educational components of their manatee protection plans.

In April, a press conference with Governor Chiles and Jimmy Buffet was held on the steps of the Capitol to emphasize the importance of continued support of the "Save the Manatee" license plate.

The information specialist spearheaded a very successful voluntary contribution campaign (VCC) with the enthusiastic participation of county registration offices. In order to promote sales of the manatee decal, a contest between county tax collectors is held every June, the month vessel registrations are renewed. This year over \$92,000 was raised through sales of the decal and voluntary contributions at tax collector's offices; Palm Beach County won the contest by collecting over \$21,000. Additional decals will continue to be sold. Approximately 40% of the funds raised through sale of the decals are disbursed to the oceanaria for their efforts in the rescue, rehabilitation, and release of wild manatees.

MARINE TURTLE PROGRAM

The 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 (research) and to minimize human impacts which result in increased mortality, degrade habitat, and impede recovery of listed turtle species (management). The current FDEP program is divided into six major components: (1) recovery planning program, management, and administration; (2) biological/ecological research and population assessment; (3) coordination of research and management activities; (4) assessment of mortality factors; (5) habitat protection; and (6) education.

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 by, for example, assisting in educational seminars for harbor pilots and the port community. The FDEP received \$14,999 from the NMFS for the period October 1994 through September 1995 to assist in right whale recovery efforts, and the FMRI continues to work on a cooperative agreement with the NMFS that will provide additional funding for future efforts.

Research carried out by program staff during 1994 addressed the following topics: (1) the distribution, abundance, life history, and ecology 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.

Coordination research and management activities are accomplished through various means including the administration of a marine turtle permit system. Through a cooperative agreement with the 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 six permits were issued for 1994 including 23 in-state and 8 out-of-state permits issued to public aquaria or marine science centers to display marine turtles for public education. The management program included drafting a revision of Rule 62R-1, F.A.C. which regulates the permitted "take" of marine turtles for research, conservation, and educational purposes. Coordination of research and management activities was also accomplished through the continued participation of the FDEP staff on local, state, federal, and international conservation panels, recovery teams, and specialist groups.

The FDEP continued to coordinate the Florida portions of the Sea Turtle Stranding and Salvage Network (STSSN), an 18-state program coordinated at the federal level by the NMFS. During 1994, 759 stranded turtles were recorded by the Florida network. The FDEP staff coordinate statewide activity of permitted volunteers as well as data entry and verification. Data analyses contribute significantly to management decisions such as the regulation of fisheries that impact marine turtles.

The FDEP's marine turtle program contributes to the protection of marine turtle's and their habitat by staff participation 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 bean 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 an participation in coastal related conference and forums; providing slide shows and lectures to groups; and general promotion of the program and its fund raising activities. The only dedicated funding for the program consists of revenue generated from the sale of marine turtle decals, primarily associated with boat registrations.

THE BUREAU OF COASTAL AND AQUATIC MANAGED AREAS

The Bureau of Coastal and Aquatic Managed Areas (BCAMA) was created in the Florida Division of Marine Resources upon reorganization of the FDEP on July 1, 1994. The bureau administers the National Estuarine Research Reserve (NERR), the National Marine Sanctuary (NMS), and the state's aquatic preserve (AP) programs. The NERR Program was created under the Coastal Zone Management Act of 1972, and Florida has designated sites at Apalachicola and Rookery Bay. The NMS Program is authorized under the Marine Protection, Research, and Sanctuaries Act of 1972. The 2,800 square nautical miles Florida Keys National Marine Sanctuary is Florida's representative site. The AP Program has 43 designated sites throughout the state under the authority of Chapter 258, F.S. Each of these programs are involved with protection of the natural resources on the sovereign submerged lands and the uplands within their boundaries.

Apalachicola National Estuarine Research Reserve (ANERR) research staff assisted University of Georgia Southwestern Department of Geology and Physics on a project entitled "Effects of the 1994 Flood on Sedimentation and Trace Metal Concentrations in Apalachicola Bay." Work continues on the "Shoreline Stabilization Demonstration Project." Two monthly profiles were performed this quarter to monitor changes in the shoreline behind the breakwater. Staff meet with the U.S. Army Corps of Engineers and the Florida Game and Freshwater Fish Commission and agreed upon the construction of a 23 acre island south of the John Gorrie Bridge on the east side of the intercoastal waterway channel in Apalachicola Bay. The island will be constructed of dredge material removed from the channel as part of the COEs on-going maintenance dredging project. Research staff conducted the Cape St. George Island portion of the 1994 Apalachicola Bay Christmas Bird Count. Seventy-three species were observed for this portion, and 129 were observed overall. The Estuarine Walk Visitor Center was closed for renovation and maintenance in mid-December. During the months of October through December when the Estuarine Walk was open, 634 people visited the live native habitat and aquatic wildlife interpretive walk. Two scheduled Guest Lecture Series 1994-1995 presentations were filmed, documented, and presented to the public on Tuesday and Thursday evenings.

The Florida Keys National Marine Sanctuary (FKNMS) held meetings and general grounding response protocol discussions continued as a result to the earlier grounding of the Columbus Iselin. G.P. Schmahl was designated the state of Florida's liaison in the development and implementation of Water Quality Protection Program (WQPP) for the FKNMS. The Sounding Line newsletter, "Waterways Production" and weekly spots on a local radio call-in program continued. Presentation given and manned booths were set up during "Cayo" and "Island Jubilee." Sanctuary officers issued 110 verbal warnings, 34 written warnings, and 3 citations; 10 state citations and 6 written warnings were issued outside the Looe Key area. Sanctuary visitations totalled 15,687.

The Rookery Bay National Estuarine Research Reserve (RBNERR) education staff conducted 56 programs reaching a total of 2,037 people. Programs include both on-site field study trips and off-site outreach presentations. The research staff is planning and implementing watershed restoration plans exotic plant removal and permit review. The RBNERR has conducted six exotic plant removal work projects and has completed coordination and chairing the Belle Meade Work Group with the presentation of the report to the Land Acquisition Advisory Council. The report provided a series of recommendations to resolve long-standing issues of concern over the land acquisition project.

A third site in Florida on the Atlantic Coast near St. Augustine in St. Johns and Flagler counties has been selected for NERR designation. Florida's Governor and Cabinet nominated the site which includes the sovereign submerged lands of Guana, Talomato, and the Matanzas Rivers and the surrounding publicly-owned uplands. A management plan will be developed prior to formal site designation as a NERR by NOAA which is expected to occur within approximately two years.

OFFICE OF FISHERIES MANAGEMENT AND ASSISTANCE SERVICES

The responsibilities of the Office of Fisheries Management and Assistance Services (OFMAS) are: (1) to serve as FDEP liaison to the FMFC, (2) administration of the state artificial reef program, (3) to monitor and evaluate the compliance with the marine fisheries trip ticket reporting system requirements and accuracy of the reporting through audits of applicable fish house records, (4) to improve and expand distribution of information on marine resources and fishing regulations 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 commercial fisheries managed by quota with closure of the fishing season as quotas are reached, (8) aquatic resource education, and (9) to act as FDEP technical liaison with the local government mosquito control programs.

The OFMAS staff continued to provide information on fishing license requirements (both commercial and recreational), fishing opportunities and locations, fish identification, and generation and expenditure of revenues generated from the sale of fishing license as well as general marine resource issues. Over 20,000 copies of posters aiding in the identification of common snappers, groupers, and pelagics were distributed. Staff assisted in the distribution of nearly 600,000 copies of "Fishing Lines, Angler's Guide to Florida's Marine Resources," now in its second printing. The latest issue of the OFMAS newsletter, "Fishing Forum," discussed marine research conducted by the FMRI and funded by Federal Aid in Sport Fish Restoration and saltwater license revenues. Development of "EcoVentures," an interactive aquatic resource education video computer program for use in middle schools, was nearly completed, and staff began planning for a series of teacher-training workshops.

The artificial reef program staff participated in the civil-military cooperative Reef-Ex project leading to the placement of 40 surplus army tanks in waters off three panhandle Florida counties. An additional 19 artificial reef construction projects were completed, and 26 new ones initiated in cooperation with local governments during this time period. Permits for large area reef sites were obtained for three areas off Escambia and Okaloosa counties in the panhandle. Staff also conducted 24 on-site observations and evaluations of OFMAS sponsored reef projects, worked for legislation to facilitate oversight and enforcement of conditions stated in permits authorizing reef construction, served on reef committees of the Gulf and Atlantic States Marine Fisheries Commission committees, and completed editing of the "Proceedings of Artificial Reef Summit '93" for an anticipated distribution in early 1995.

The OFMAS audited first-time landings totalling 8,703,934 pounds from 10 seafood product businesses, including restaurants as well as wholesale and retail dealers. Staff continued to monitor those fisheries managed by quota in state waters and coordinate with the National Marine Fisheries Service for oversight of Florida's fisheries affected by federal management actions; closures were announced as necessary.

The rule governing the Lobster Trap Certificate program was finalized after a series of public workshops; the final public hearing is scheduled for early 1995. Several informal hearings to consider evidence presented by lobster fishermen convicted of violations of lobster regulations to show just cause why the department should not deny them a lobster license were conducted.

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

MISSION STATEMENT AND PROGRAM OBJECTIVES

The Mississippi Department of Marine Resources (MDMR) 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 regulation of the use and harvest of coastal, estuarine, and marine resources.

DEPARTMENT OBJECTIVES

Although the MDMR'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 MDMR offers technical assistance to the Department of Environmental Quality and the Office of the Governor with regard to environmental issues pertaining to offshore oil and gas exploration and development activities. The MDMR 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 MDMR 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 are, however, diverse. 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 MDMR'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 sports 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. Regulations of wetlands activities are similarly accomplished in cooperative fashion as the MDMR 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 MDMR's strong enforcement program - a cooperative agreement with the the Mississippi Department of Wildlife, Fisheries, and Parks Enforcement Division - 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 Lacy Act and investigation of incidents involving both marine mammals and endangered marine turtles has gained increased emphasis in recent years.

The following narrative provides a brief description of the major programs and projects within the MDMR highlighting the principal objectives and accomplishments.

ADMINISTRATIVE DIVISION

The principal objective of this program is to provide the necessary administrative support services for the MDMR 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 that will ultimately serve to improve overall agency function.

Support services included data-processing and microcomputer support for day-to-day department activities. Acquisition of additional computer support was accomplished. Additional equipment should enable the MDMR to increase both the timeliness and efficiency of its response to both in-house and public requests for support assistance.

Routine staff meetings and briefings were also conducted to provide staff with updates on legislative developments and other information relevant to the overall mission of the MDMR.

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 division provides this level of specialization to the Mississippi 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.

MARINE FISHERIES MANAGEMENT

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 stock 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.

Public notices were published on opening and closing commercial fishing seasons for king mackerel, large coastal sharks, red drum, and red snapper. Saltwater fisheries personnel served on regional management activities of the Gulf States Marine Fisheries Commission including: the Technical Coordinating Committee (TCC); the Black Drum and Mullet technical task forces; the Artificial Reef, TCC Data Management, and Recreational Fishery Management Subcommittees; and the State-Federal Fisheries Management Committee. Saltwater 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 through the Marine Fisheries Initiative (MARFIN), Sport Fish Restoration Act, Cooperative Fishery Statistics Program, and the Interjurisdictional Fisheries Act. Division personnel also responded to various requests from other governmental agencies and the general public.

MARINE FISHERIES STATISTICS

Projects and activities coordinated through this division include:

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.

Fisheries landings data have been collected weekly and monthly according to schedule. The data was processed, edited, and submitted to the National Marine Fisheries Service 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.

SHRIMP POPULATION MONITORING AND ASSESSMENT

Projects and activities coordinated through this division include:

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

Shrimp sampling was conducted for commercial, recreational, and live bait shrimping. Shrimp season north of the Intracoastal Waterway was opened for commercial and recreational shrimpers in April after sampling showed that shrimp present were of legal size. The regular shrimp season was opened in June after data analyses of an extensive sampling program projected the date shrimp would reach the required 68 shrimp-per-pound count. A few areas where shrimp remained sublegal-size were kept closed as sampling of those areas continued. These areas were eventually opened.

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.

SHELLFISH SANITATION

Oysters, as sessile organisms, are subject to a great deal more to the whims of the environmental conditions than are the mobile fisheries. Consequently, oyster landings over the last ten years have fluctuated from 365,000 sacks in 1983 to a low of 5,000 sacks in 1988. In addition to fluctuations caused by either too much or too little rain, are the problems with upland pollution rendering even plentiful supplies unusable. Water quality samples were obtained throughout the year to classify shellfish growing waters significant rain events until it was determined that water quality samples were obtained throughout the year to classify shellfish growing waters. Oyster harvesting was closed after significant rain events until it was determined that water quality had improved to allow continued harvesting.

MISSISSIPPI SOUND CREEL SURVEY

The primary objective of this program is to conduct a point access creel survey of sportboat fishermen. Specifically, this program is designed to provide information on relative pressure at boat launch site 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 effort (CPUE).

MISSISSIPPI SOUND MONITORING AND ASSESSMENT

Program objectives are the monitoring and assessment of adult and large juvenile finfish species comprising fisheries resources in Mississippi's estuarine and marine territorial waters.

The MDMR received federal funds made possible from the Interjurisdictional Fisheries Act of 1986 (P.L. 99-659) and subcontracted with the Gulf Coast Research Laboratory for the work conducted by this program. This is an ongoing program that samples the estuarine and marine biota with gill nets, dredges, trawls, 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 program 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; live bait and commercial shrimp monitoring; and analysis of the roe mullet fishery in Mississippi waters.

OIL AND GAS TECHNICAL ASSISTANCE

Primary objectives include 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 impacts 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.

COASTAL ZONE MANAGEMENT ASSISTANCE

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.

The MDMR 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 beach 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.

The MDMR contracted for part-time assistance in marine debris efforts. Management staff made an assessment of the MCP as required by the amended Coastal Zone Management Act. This assessment is a precursor

to strategies to improve the MCP through program enhancement or program changes. Work on the assessment and strategy will continue into the next fiscal year. Major efforts were made to develop a "Coastal Preserves" system for the state which includes 20 potential sites in the coastal area. These areas provide unique habitat, erosion control and storm buffers, groundwater, and recharge areas. These sites also provide habitat for rare and endangered plant and animal life.

A contract was developed with Mississippi State University to monitor size and nesting phenology of the least tern colonies on the Mississippi sand beaches. Results of this study will be evaluated and recommendations incorporated into the management of the least tern colony. A contract was also developed with the National Audubon Society to develop a publication for wetlands.

WETLANDS EDUCATION AND PROTECTION

The primary objective of this program 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 Coastal Management staff achieved program objectives by administering the provisions of the Coastal Wetlands Protection Law and the Mississippi Coastal Program. Staff reviewed project applications for dockside gaming facilities in coastal areas during this reporting period and anticipated similar reviews to follow. Significant staff efforts were made to develop aquaculture guidelines to address permitting requirements for both net pen operations proposed for an area south of Horn Island and for oyster culture near Cat Island. These guidelines resulted from the publication "Offshore and Sub-tidal Aquaculture Environmental Activities." There was a high level of cooperation among state and federal resource agencies and significant emphasis was placed on habitat restoration and enhancement activities. The wetlands staff developed a research project that will address historic erosion rates at Bellefontaine in Jackson County as well as continuing a cooperative effort in determining the value of wetlands via an EPA grant in Jackson County for future mitigation or wetlands replacement purposes.

Part of the state's fledgling "Coastal Preserves" reported under Coastal Zone Management Assistance and one of the first actions of the program was the transfer from the Nature Conservancy to the MDMR of approximately 575 acres of wetlands within the Graveline Bay system of Jackson County. Graveline Bay is a small estuarine system that serves an important role as a nursery area for commercial and recreationally important species. The staff conducted site inspections and environmental assessments, sponsored meetings, and acted on a wetland cases.

PUBLIC TIDELANDS TRUST

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

Portions of tidelands funds were used to match a U.S. Fish and Wildlife Service grant for pine savanna acquisition and for a wetlands research project.

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, a special spring pink shrimp season for a portion of Breton and Chandeleur sounds and a special white shrimp season for Calcasieu Lake were set.

SHRIMP SEASONS

Offshore

The state's offshore territorial waters remained open during most of 1994. The offshore area from the Inside-Outside Shrimp Line out to three miles was closed from the Louisiana/Mississippi State Line westward to South Pass of the Mississippi River and from Bayou Lafourche westward to the Atchafalaya River Ship Channel from February 12 through May 1, 1994. Also, offshore waters from the Atchafalaya River Ship Channel westward to Freshwater Bayou were closed from February 12 through May 15, 1994.

Inshore

The 1994 Spring Inshore Shrimp Season opened in Zone 2 (South Pass of the Mississippi River west to the western shore of Vermilion Bay) on May 16; Zone 1 (East of the Mississippi River) and Zone 3 (the western shore of Vermilion Bay to Texas State Line) opened on May 30. Catches were poor throughout most of Zone 2 and much of the shrimp taken were small (80/100 and 100+ count per pound). Catches in Zone 1 were better and sizes were larger (60/70 count per pound on average). Catches in Zone 3 were the best overall. However, this zone produced the smallest shrimp with the average being much smaller than 100 count per pound. Catches improved in all zones as the season progressed, but overall this season produced less shrimp than 1993.

The 1994 Fall Inshore Shrimp Season opened statewide on August 15, 1994. Catches throughout the state were poor during the early part of the season, but weather conditions allowed for prolonged catches and overall landings were good. The mild fall and early winter temperatures allowed for rapid growth and large white shrimp began showing up about the last week of September and continued in good numbers through most of December. These late season catches resulted in an annual production of approximately 88.4 million pounds. This is below the long-term average, but slightly ahead of 1993.

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, 1995.

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 1993/1994 oyster season on the public oyster seed grounds not currently under lease and the Hackberry Bay, Bay Gardene, Bay Junop oyster seed reservations opened one-half hour before sunrise September 8, 1993. The Sister Lake Oyster Seed Reservation remained closed during the 1993/1994 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 October 1, 1993, and remained open until one-half hour after sunset on April 30, 1994, with the Secretary of the LDWF having the authority to extend the season to compensate for health closure days.

Oyster production for 1993-1994 was above the average, particularly on the public grounds east of the Mississippi River.

Lease Auction

During the 1993/1994 year, 656 oyster lease applications for survey and 350 new oyster leases were issued. Five-hundred and seventy-nine oyster lease applications were processed. Oyster lease rental and application fees totaling \$1,017,260 were collected.

All remaining oyster lease surveys tied to the Louisiana State Plane Coordinate System were entered into the oyster lease geographic information system.

An auction of all delinquent oyster leases was held March 29, 1994. The auction included oyster leases on which rent was delinquent. Opening minimum bid for each lease was rental and penalty due. One-hundred and fourteen leases totaling 3,816 acres were auctioned. Of that total, 86 leases were sold totaling 2,791 acres for \$11,970.

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. During 1993-1994, Sister Lake public grounds were mapped to identify buried reefs and to ensure optimal placement of cultch material, and 62,000 cubic yards of cultch material was deposited at this site.

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 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 1/4" bar, 1/2" stretched, Delta 44 knotless mesh. A gill net is used to sample juvenile, sub-adults, 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', 1/4" bar, 2 1/2" stretched mesh, 0.52 mm diameter filament; (3) 150'x10', 1/2" bar, 3" stretched mesh, 0.52 mm diameter filament; (4) 150'x10', 1 3/4" bar, 3 1/2" 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 net has a 2:1 sag, and the mesh sizes are as follows: inner wall - 1 5/8" bar, 3 5/8" 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, and 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 are 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 harvest of spotted seatrout in state territorial waters was halted at 12:01 a.m., March 6, 1994. The closure prohibited the commercial harvest, purchase, barter, trade, and sale of spotted seatrout taken from Louisiana waters but did not prohibit dealers from possessing spotted seatrout legally taken prior to the date of the closure if appropriate records were maintained. Commercial mesh sizes for gill nets, trammel nets, and seine nets other than strike nets increased to a minimum of 4 1/2" once the commercial spotted seatrout season was closed. Commercial harvest for the 1993-1994 season was 1,082,645 lbs.

Recreational harvest of spotted seatrout in 1993, as measured by the Marine Recreational Fishery Statistics Survey, was near average for the period since the imposition of the present length (12" TL) and creel (25/person) limits in 1987. The harvest was estimated as 5,447,324 fish with an average weight of about 1.03 lbs. The average size was smaller than any other year since 1987.

Red Drum

Red drum is designated as a recreational fish in Louisiana. Recreational harvest of red drum in 1993, as measured by the Marine Recreational Fishery Statistics Survey, was substantially above average for the period since the imposition of the present length (16" TL) and creel (5/person) limits in 1988. The harvest was estimated as 1,998,313 fish with an average weight of about 3.8 lbs. The weight was near the mean of years since 1987. The size of the recreational harvest was attributed to the very large 1990 and 1991 year-classes.

Menhaden

In addition to opening and closing the shrimp seasons, information from the LDWF trawl samples is used each year to develop a forecast for menhaden production. Annual forecasts for the Louisiana menhaden fishery have

been made since 1982. However, the department's forecasts could not be made until one or two months prior to the season opening in mid-April because juvenile menhaden indices were based upon January/December data for the preceding year. A comprehensive research project was begun to improve the department's 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.

A meeting was held with menhaden industry personnel in November 1993 to present the preliminary 1994 harvest forecast using multiple regression predictive models based on preliminary results of the project described above. Anticipated 1994 fishing effort, newly developed juvenile menhaden indices, environmental factors, and other commercial harvest statistics were used as input data.

A forecast was made for an average class of age two fish and an average or above average class of age one fish in the menhaden fishery in 1994. The projected Louisiana menhaden landings were in the range of 350,000 to 400,000 metric tons (MT). The 1993 forecast was for the fishery to be comprised of a slightly above average 1992 year class (age one's in 1993) and a below average 1991 year class (age two's in 1993) to be in the fishery. The projected Louisiana menhaden landings were in the range of 300,000 to 350,000 MT. Actual 1993 Louisiana landings were 471,700 MT.

Black Drum

A fishery management plan for the black drum fishery in Louisiana was completed and implemented in early 1990. Permanent rules, effective September 1, 1990, established a recreational minimum size limit of 16" total length with possession of no more than one over 27" total length. The recreational daily creel limit and possession limit was set at 5. The commercial fishery is required to operate under two separate annual quotas. A quota of 3.25 million pounds was established for 16" to 27" fish and a 300,000 fish quota for fish over 27". Commercial fishermen who harvest black drum over 27" are required to possess an annual "Special Black Drum Permit" and are also required to report monthly the number of black drum taken during the previous month. The fishing year was established as September 1 to August 31 of each year.

In fishing year 1993-1994 (September 1993-August 1994), figures from bull drum permit reports indicate a harvest of about 64,536 drum over 27". At an average of 15 lbs each, this translates to 968,040 lbs of bull drum. No figures for harvest of drum less than 27" are available from this source. Data from landings reports of black drum are not reliably separable by size. Estimates of the numbers of black drum included in the harvest are subtracted from dealer reports, based on average prices and knowledge of the fishery. These estimates do not precisely coincide with the reports from the bull drum permit reports. Based on these estimates, about 2,322,478 lbs of drum under 27" were landed over the fishing year. Preliminary landings data indicate total landings of about 3,290,518 lbs of black drum for the September 1993-August 1994 period.

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 1993-1994, the board elected officers, accepted bylaws, and began a strategic planning process 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 \$6.4 million into Louisiana's Artificial Reef Trust Fund. 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 the National Marine Fisheries Service. Landings are 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 the 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 1993-1994, 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 LDWF continued its long-term environmental monitoring program 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 are collected. Sediment quality and the benthic community are sampled quarterly. The LDWF also conducts monitoring during environmental incidents such as controlled operational discharge of supersaturated brine solutions and oil spills. The department also participates in contingency planning for oil spill response.

The program is now 16 years old. Through the Program Review Committee, the LDWF began an initiative to conduct a comprehensive external review of the monitoring program. This review, which will take place during calendar year 1995, will examine program goals and objectives in relation to the current monitoring program and LOOP's operations and record. The department is also compiling a summary technical report of program data and analyses to date.

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 begin once discharges have ceased for 12 consecutive months.

Southeast Area Monitoring and Assessment Program (SEAMAP)

This NMFS-funded cooperative program continued in its fourteenth year. Louisiana participated in subcommittee planning and special-issue work group meetings and conducting seasonal sample surveys. Shrimp/groundfish, zooplankton, and associated environmental parameters are measured. The study area is the Louisiana territorial sea and nearshore EEZ from the Mississippi River to Atchafalaya Bay. Summer and fall surveys coincide with the NMFS annual shrimp/groundfish resource survey cruises in the northern Gulf.

Department personnel collected water samples during the 1994 summer survey to aid in identifying and quantifying dinoflagellates suspected of killing fish along the Louisiana and Texas coasts. Personnel also collected samples in coastal bays and over shellfish beds because the suspected causal organism was associated with low salinity waters.

Oil Spill Contingency Planning and Response

The LDWF was active in oil spill contingency planning and response activities during 1994 through the actions of its intradepartmental oil spill task force. The task force developed and implemented an emergency notification and response system. They also developed a framework for a departmental contingency plan that is consistent with the format developed for statewide application by the Louisiana Oil Spill Coordinator. The LDWF received notifications of over 750 oil spills in Louisiana and mounted a response whenever a spill threatened wildlife or fisheries resources. The department's response capabilities also were tested during numerous government- and industry-sponsored drills.

Caernarvon Biological Monitoring

The U.S. Army Corps of Engineers, with support from the Louisiana Department of Natural Resources and the Louisiana 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 fresh water 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 LDWF 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 1991 the department began the first year of the four-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 first year the Caernarvon Freshwater Diversion Structure was in operation for an entire year was 1992. During this year, a minimum flow rate of 500 cubic feet per second was adopted by the Caernarvon Interagency Advisory Committee in order to achieve maximum benefits to the upper marsh.

In 1993, the Caernarvon Interagency Advisory Committee modified the operations schedule for the Caernarvon Freshwater Diversion Structure. Louisiana Department of Wildlife and Fisheries biologists were instrumental in the development of this schedule and its anticipated effects on the wildlife and fisheries resources in the area. The new schedule called for the structure to be operated at maximum flow during December through February and maintain at least a minimum flow of 700 cfs during the remainder of the year.

The effects of this new operational schedule were closely monitored in 1994. Preliminary results seem to indicate a dispersal of some estuarine species with some freshwater species, particularly largemouth bass, becoming more abundant than in previous years. The Corps of Engineers, along with the Louisiana Department of Natural

Resources, has agreed to contract the Louisiana Department of Wildlife and Fisheries for an additional year of biological monitoring through 1995.

Bonnet Carre' Controlled Freshwater Diversion Project

During 1994, the LDWF continued to work with the U.S. Army Corps of Engineers and the state of Mississippi on the development of the Bonnet Carre' Freshwater Diversion Project.

The re-analysis of the project was completed in November 1994. During this process, data collected indicated that as much as 8,500 cubic feet per second could flow through wetland areas in the existing spillway and adjacent wetlands and obtain an approximately 1 day retention time. Additional modeling efforts indicated that water diverted at Bonnet Carre' would act like a steering mechanism for the Pearl River discharge. Other information indicated that not as much water would be needed to achieve project benefits as was originally thought.

Extensive water quality analysis of Mississippi River water in the vicinity of the diversion site was conducted. These analyses indicated that the Mississippi River water quality has continued to improve. Nutrient levels were identified as possible areas of concern. However, additional analysis indicated that the basin could assimilate these additional nutrients.

The possible impact of the diversion on fisheries resources was evaluated. This evaluation indicated that some of the more marine resources that have encroached into the area as a result of saltwater intrusion may be relocated slightly to the east. It was noted that most estuarine fisheries resources tolerate a wide range of salinity regimes. Additionally, many of the historical freshwater fisheries would be enhanced.

Work is continuing on the overland flow and other design features of the project.

Coastal Wetlands Restoration

In 1994, the LDWF assumed a greater role in the planning of the overall strategy for the restoration of Louisiana's coastal wetlands. The department has actively participated in the activities of the Federal Coastal Wetlands Planning, Protection, and Restoration Task Force, as well as the State Coastal Wetlands Conservation and Restoration Task Force. During the year, Louisiana developed a coastal wetlands restoration strategy which contains many of the features of the plan that the federal task force submitted to Congress in 1993.

The LDWF developed a marsh management policy during 1994. This policy will be used by the department to guide development of its own marsh management projects as well as comments on private marsh management plans.

In 1994, the LDWF produced a series of wetlands articles for the Conservationist Magazine describing the current status of Louisiana's wetlands loss problem, the value of these wetlands to the state's fish and wildlife resources, what is being done to stop wetlands loss, and what might have to be done in the future if Louisiana is to stem the tide of wetlands loss.

Davis Pond Freshwater Diversion Project

The LDWF has begun working with the U.S. Army Corps of Engineers on design for the biological monitoring of the project. The Davis Pond Project is in the construction phase and pre-construction monitoring for the project is scheduled to begin in January 1996.

RESEARCH PROGRAM

Lyle S. St. Amant Marine Laboratory

The Lyle St. Amant Marine Laboratory's primary mission is to conduct the research needed to manage the marine fisheries of Louisiana. In addition, there is also a need for the use of the facility by other sections of the department and by non-department groups engaged in marine research.

The major marine finfish research project programs included: the state-of-the-art age and growth laboratory gathered information needed for age-structured stock assessments, and a comprehensive study on the survival rates of hooked-and-released spotted seatrout and red drum continued. In addition, two major cooperative projects with Louisiana State University researchers and two short-term feasibility analysis projects were conducted.

Age and Growth Lab

To increase accuracy of stock assessments, the division engaged in an extensive project for obtaining age, growth, and fecundity data on spotted seatrout and red drum. The information will also be used to investigate the need and feasibility of areal management strategies. This activity was funded by Sport Fish Restoration funds.

Age and growth laboratory personnel obtained measurements and otoliths from spotted seatrout and red drum obtained from the Marine Finfish Monitoring Program's fishery independent samples and from the commercial and recreational fisheries. Lab personnel also obtained data from samples taken for this and other studies. Otoliths were removed, prepared, sectioned, and examined for annular rings. Aging was accomplished using the latest computer image-analysis technology. Lab personnel took extensive measurements and samples from red drum and trout for fecundity analysis; preserved samples were analyzed by Louisiana State University's Coastal Fisheries Institute scientists. The institute has operated age, growth, and fecundity laboratories since 1985 and conducted a training program for project personnel. Continuing consultation and verification services were provided to ensure that correct procedures were used. Institute researchers also investigated new technologies and transferred those technologies to the project.

To date, 1,400 red drum and 2,700 spotted seatrout have been sampled for the age and growth laboratory. Age analysis on the majority of these samples was begun.

Hook-and-Release Mortality Project

Size limits and creel limits for marine species bring up the question, "How many fish survive after being hooked and released?" The survival rates of these fish has long been a point of argument for fishermen and for resource managers. Information on this effect is also vital in detailed population modeling efforts and for the setting of regulations.

Limited studies have been conducted with red drum and spotted seatrout in other locales with widely varying results. No controlled studies of hook-release mortality have previously been conducted in Louisiana.

The comprehensive study at the marine lab examined conditions similar to typical sportfishing capture, handling, and release except that fish were kept in flow-through tanks to assess survival rates. Four fishing techniques were evaluated: single hook with bait, treble hook with bait, single hook lures, and treble hook lures. After being removed from the hook, fish were held in five-hundred gallon tanks through which fresh bay water is constantly pumped. Salinity, temperatures, and dissolved oxygen were monitored while the fish were held. All fish were held for at least three days while some were held up to seven days to check for delayed mortality. Nearly 1,500 trout and 600 red drum have been tested to date. Preliminary results indicate that about 90% of all released trout survive and that over 95% of released red drum probably live.

Other Projects

Two Louisiana State University groups conducted cooperative projects at the lab. A study of gypsum/concrete material as a possible artificial reef substrate made use of lab ponds. Laboratory ponds and hatchery facilities were also used by a group interested in cryopreservation techniques for sciaenid sperm and cold tolerance of hybrid red drum/black drum fingerlings.

Short-term projects conducted included: examination of a method of trapping juveniles of valuable species in hard-to-sample areas and testing different artificial substrate materials for pond breeding of cocahoe minnows.

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 saltwater fishery resources within the bays and estuaries and out to nine nautical miles in the Gulf of Mexico. Texas has four million acres of saltwater environment utilized by approximately 20,000 commercial and 1,000,000 recreational fishermen with an estimated economic impact of \$1.9 billion annually.

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, 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 1994, a total of eight 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 slip counts are used to assess relative pressure at sampling sites. Relative pressure is used to determine how often a site should be selected for a survey; higher use sites are surveyed more often than low 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 1994 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 Texas Parks and Wildlife Commission (TPWC) to ensure stability of the resource. Exceptions to the statewide daily bag, possession, and length limits for king mackerel by licensed chartered vessels was eliminated to correspond to regulations implemented by the federal government in the exclusive economic zone. The TPWC approved a special regulation on red drum which allowed anglers to harvest, within a license year, up to two fish that exceeded the stated maximum size limit (28 inches) by using red drum tags. This was allowed because red drum stocks have recovered to a level where a modest allowance for increased harvest is justified. Likewise, a rule change allowed (during the license year) the possession of one tarpon 80 inches in total length or larger with a tarpon tag. The minimum length of red snapper was increased from 13 to 14 inches to correspond with the regulation implemented by the Gulf of Mexico Fishery Management Council in federal waters. In addition, modification of trawl regulations exempted persons shrimping with an individual shrimp trawl from the provision requiring the non-game finfish portion of the trawl catch not to exceed 50% by weight of the total trawl catch, except for species with size or bag limits to allow sport fishermen to use more finfish as bait. In commercial fisheries, the state legislature made changes to eliminate individual licenses for crew members of shrimp vessels and gave the TPWC authority to prescribe requirements necessary to clarify license transfer procedures, forms to be used, and fees charged for the transfer of licenses.

A total of 1,014 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 8,169 fishes was tagged and released. About 8% were returned for rewards. The percent of tags returned was consistent with prior years.

Storage of monitoring data was converted from a tape-based system to a disk-based system featuring online data entry that allows direct updating of data through programmed personal computer screens. This conversion should allow for more efficient and timely update of the database.

Data on mullet utilization as bait was collected in conjunction with the ongoing harvest monitoring program. Information will be used to estimate importance of mullet used by sport fishermen in angling activities.

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

Gulf of Mexico waters from Alabama to the Rio Grande were sampled to a depth of 300 feet during November 1993 and June-July 1994 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 southern 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 southern flounder were continued to estimate age structure of these populations in Texas waters and to develop age-length keys for the three fishes. Analyses of life history data of tarpon and snook were completed.

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 were begun. One study characterized the specialized night water pink shrimp fishery. A second study used paired-trawling to assess size of shrimp caught and bycatch in three trawls: 1 3/8-inch, 1 1/2-inch, and 1 3/4-inch stretched meshes. The third study addressed the commercial shrimp catch rate (lbs/trip), size and species composition of shrimp landed, and characterization of gear and methods used.

Effort directed toward spawning and rearing marine fish was continued. Controlled photoperiod and temperature regime to induce sexual maturity and spawning resulted in about 30 million red drum fingerlings, 206 million red drum fry, 2 million spotted seatrout fingerlings, and 4.5 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.

Texas placed as artificial reefs in the Gulf of Mexico, 13 donated rig jackets from petroleum companies, 100 (4,000-12,000) concrete anchors from the U.S. Coast Guard, and 46 concrete box culverts from a private company. Included in these donations were over \$161,800 to the Texas Artificial Reef Fund. These monies were used to operate the program, maintain the sites, conduct artificial reef research, and cover liability.

A persistent algal (brown tide) continues to bloom 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 (NOAA). The mission of the NMFS is stewardship of the nation's living marine resources. Through conservation and wise use, these resources and their habitats can be managed to benefit 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. The program includes 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 Texas to North Carolina (including Louisiana, Mississippi, Alabama, Florida, Georgia, 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 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 program 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 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 center 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 1994 fishery actions include:

FISHERY RESOURCE CONSERVATION AND MANAGEMENT

Approved Amendment 5 to the fishery management plan (FMP) for the stone crab fishery of the Gulf of Mexico. Included is a measure to place a four-year moratorium on the issuance of federal numbers and color codes by the regional director for use on stone crab vessels and gear.

Approved Amendment 9 to the reef fish FMP (red snapper data collection and extension of permit moratorium and endorsement provisions).

Approved Amendment 7 to the FMP for the shrimp fishery of the Gulf of Mexico. Included are definitions of overfishing and recovery plans for brown, pink, and white shrimp and elimination of TALFF for royal red shrimp.

Implemented a cooperative shrimp closure with Texas from May 13 through July 6, 1994.

Approved Amendment 2 to the FMP on coral and coral reefs of the Gulf of Mexico and South Atlantic that begins the phase out of wild live rock harvests and replacement thereof with aquaculture products.

Implemented two interim emergency rules and an extension of an interim rule with modifications to control live rock harvesting in the Gulf of Mexico and off the Florida Keys.

Federal regulations amended to eliminate the need for federal permits for the spiny lobster fishery in the EEZ off Florida under the FMP for spiny lobster of the Gulf of Mexico and South Atlantic.

Developed a coordinated permit system for live rock aquaculture operations in federal waters that involves NOAA's Sanctuary and Reserves Division, the Gulf of Mexico Fishery Management Council, and the U.S. Army Corps of Engineers.

For 1994, issued 5,411 multiple species fishing vessel permits and 475 multiple species dealer permits. Deposited into the U.S. Treasury \$289,921 in permit application fees.

Approved Amendment 7 to the FMP for coastal migratory pelagic resources of the Gulf of Mexico and South Atlantic. Amendment 7 suballocates the eastern zone commercial quota for Gulf group king mackerel equally between Florida's east and west coast fisheries, establishes two equal quotas for the Florida west coast subzone for fishermen using hook and line and gill net gear, and requires that vessel fishing under the gill net quota obtain an endorsement on their commercial mackerel permit.

PROTECTED SPECIES MANAGEMENT

Conducted TED training and certification workshops in Brazil, Mexico, Venezuela, Honduras, Colombia, Guyana, Panama, Trinidad, and Tobago. The use of TEDs in these countries will foster sea turtle protection and recovery.

Continued a multi-year study as required under the ESA by the COE in the Gulf of Mexico to determine the distribution and abundance of sea turtles in selected channels. This will serve to minimize takes of sea turtles during channel dredging in the Gulf.

Monitored oil rig removals in the Gulf of Mexico to ensure sea turtles are not taken.

Issued a supplemental biological opinion for shrimp fishing to require TEDs and other protective measures to enhance sea turtle protection.

Established a major enforcement effort off Texas to ensure TED compliance and reduce the take of sea turtles in the shrimp trawl fishery.

Sponsored a comprehensive workshop in Texas to present results of cooperative studies related to a major sea turtle and fish stranding event off Texas in spring 1994.

Developed a rule to require the use of flotation on TEDs to ensure there is proper release of sea turtles from TED equipped trawls.

In response to significant sea turtle strandings on Texas beaches initially assumed to be due to environmental conditions (toxic algae and red tides), conducted independent assessment of effectiveness of

enforcement and current TED regulations. This led to development of a new rule to improve the effectiveness of TEDs and a greatly expanded OJT TED training and technology transfer program which, with added enforcement, greatly reduced strandings. Industry leaders publicly endorsed the program which was a first.

Conducted an expanded observer program on Gulf shrimp trawlers, observer coverage of menhaden purse seiners in response to concerns about takes of turtles. The menhaden fishery was not shown to take turtles.

Initiated observer coverage of seismic vessels off Texas.

HABITAT PROTECTION

More than 3,000 individual actions were reviewed - all within established time limits. These included requests for federal permits or licenses, federal water development projects, and review of NEPA documents. The NMFS recommended the protection, restoration, or creation of thousands of acres of wetlands proposed for alteration. The SEO elevated the first policy issue nationally under the new Clean Water Act Memorandum of Agreement with the Corps of Engineers (marsh management issue in Louisiana). This issue is being successfully resolved in favor of the NMFS because the Corps has agreed to conduct an environmental impact analysis.

The SERO worked in cooperation with the Fish and Wildlife Service to more definitively determine the effects of marsh management on fishery resources in Louisiana. The SERO also has been coordinating with the COE and the Galveston Laboratory on studies related to the Galveston Bay ship channels project. Issues involving Florida Bay have also been national prominent this calendar year.

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

Under CWPPRA, the NMFS received approval for most of the projects it sponsored. Significantly, the Department of Commerce issued a press release on August 26, 1994, announcing that the NMFS had received \$4.79 million associated with the Big Island Mining Restoration Project and the Atchafalaya Sediment Delivery Project that will result in over 5,000 acres of new and restored fishery habitats. An announcement was issued by Senator Breaux in coordination with the AA for Fisheries.

INDUSTRY SUPPORT SERVICES

Coordinated regional trade efforts with Headquarters F/TS for trade analysis and trade negotiations. Worked with USDOC-ITA and the U.S. trade representative to achieve trade goals which reduce tariff and non-tariff trade barriers to southeast fishing products. Examples included NAFTA (substantially reduced Mexican barriers), GATT (although not yet enacted, will achieve favorable tariff reductions [i.e., shrimp tariff in E.C. reduced from 18% to 12%]), bilateral negotiations with Japan (increased import quota for amberjack), Korea (liberalized import license requirements for crabs, eels, and fish roe).

Improved the capability to manage assigned southeast federal aid programs by providing all applicants formal guidelines and applications packages for noncompetitive (IJ, AFC, ES, councils, SEAMAP, statistics) and competitive (MARFIN, S-K regional) programs.

Participated in southeast SEAMAP and statistics planning meetings and provided guidance on preparing grant applications.

Completed the FY 1994 MARFIN and S-K selection process that resulted in the selection of 20 MARFIN and 15 S-K applications that address high-priority southeast topics. All are being negotiated by the NMFS

officials so that the NMFS Southeast scientists and administrators can cooperate with recipients in these projects.

Distributed a Status Report of Ongoing FY 1994 Grants and Cooperative Agreements in the NMFS Southeast to constituencies throughout the nation.

Distributed the 1993 MARFIN Annual Report to constituencies.

Conducted the 1993 MARFIN Conference in Atlanta and distributed conference proceedings to constituencies.

Arranged to have the FY 1994 MARFIN Conference to be a part of the annual meeting of the Southeast Association of Fish and Wildlife Agencies.

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. Regulation actions included: the use of floats on hard TEDs, increased enforcement off Texas to ensure proper TED use, and feed the dolphin programs.

Designed and implemented a computer-based information hotline designed to handle around the clock public requests for information on a broad range of topics including fishing regulations, protected species, services, education materials, and related reports and publications. The majority of materials can be retrieved directly via FAX-on-Demand; all materials are available via mail.

Regional office staff supervised the updating and reprinting of the 9-poster NOAA marine life series. Approximately 96,000, 24"x36" posters and 45,000, 30"x48" posters were printed and distributed to a very enthusiastic and diverse range of organizations for public education purposes.

Communicated on a regular basis with southeast fishing industry organizations, the U.S. trade representative, state fisheries and agriculture agencies, and U.S. embassies on a number of matters involving NAFTA, GATT, and other trade issues of importance to the southeast and U.S.

TEAMWORK AND COOPERATION

Appropriate actions were coordinated with fishery management councils.

We routinely coordinated with other entities within NOAA and NMFS. We have established ties with NOS, CS/EC, DARP, Strategic Assessment Branch, NOAA GC, NOAA Sanctuaries, OCRM, NOAA Congressional Affairs, etc. We coordinated on an ad hoc basis with other NOAA elements as well.

The SERO represented NOAA on the Galveston Bay, Barataria/Terrebonne Bay, Tampa Bay, Sarasota Bay, and National Estuary Planning groups.

Continued to maintain and promote good relationships and communications with a broad range of industry groups including Concerned Fishermen of Florida, Southern Offshore Fishermen'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 normal meetings, telephone calls, small group meetings, and correspondence.

The SERO worked on numerous interagency agreements this FY. The Federal Highway Administration, Minerals Management Service, COE, and other state and federal agencies were involved. Various agreements involving interagency cooperation, mitigation, and mitigation banking are in place. A generic area-wide local operating agreement, required in the Clean Water Act Memorandum of Agreement with the

COE was finalized. The Fish and Wildlife Service and the Environmental Protection Agency also participated in the development of this agreement.

Cooperated with the U.S. Department of State and Foreign Fishery Departments to institute the use of TEDs by 12 Caribbean nations.

Collaborated with the Texas Shrimp Association to hold a press conference to urge support for increased enforcement of TED use off Texas. Coordinated enforcement actions with influential environmental groups to reduce the probability that NMFS would be sued.

Developed cooperative sea turtle research and protection programs with the COE, MMS, Navy, and Coast Guard.

All available avenues were used to communicate and work effectively with partners and the public to address shared concerns. Examples included:

- assisting the Gulf States Marine Fisheries Commission in addressing RecFIN (SE) annual operating plan tasks and other commission committee projects.
- providing leadership and technical assistance to the Defense Logistics Agency in developing and implementing a pilot program to utilize surplus tanks and other military equipment for artificial reef construction. The first "tank reefs" were deployed offshore of Alabama in May with additional deployments following in July.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

STATUS REPORT ON FMP RULES¹

Notice of control date for entry into the fishery for live rock and notice of availability of Amendment 2 to the Coral and Coral Reefs FMP was published. An emergency interim rule for regulation of live rock harvest (the extension of effectiveness with modifications) was published. The proposed rule to implement Amendment 2 to the Coral and Coral Reefs FMP was also published.

The final emergency rule for allocating Eastern Zone Gulf group king mackerel between northern and southwestern areas was published. The Gulf group king mackerel commercial trip limit for the southeastern area of the eastern zone was reduced to 50 fish per day. Also, the commercial fishery for Gulf group king mackerel off Florida was closed. The proposed rule for Mackerel Amendment 7 was published. The proposed rule was published which would change the commercial vessel trip limits for king mackerel, and the final rule for Mackerel Amendment 7 was also published. The NMFS announced closure of the commercial fishery for the western zone of the Gulf migratory group of king mackerel.

Proposed rules for Reef Fish Amendments 5 and 7 were published; and the proposed rule, TAC, bag limits, and commercial quotas for the 1994 red snapper season were also published. The final rules were published which implemented Reef Fish Amendments 5 and 7. Proposed and final rule for Reef Fish Amendment 9 was published.

The notice of shrimp closure in EEZ off Texas was published. An adjustment to the ending date (changed to July 7, 1994) for the shrimp Texas closure was announced, and the proposed rule for Shrimp Amendment 7 was published.

Notice of proposed rule as part of Stone Crab Amendment 5 was published. This would place a four-year moratorium of federal numbers and color codes for use on stone crab vessels and gear.

COUNCIL ACTION ON FMPs

Billfish FMP*

Council and staff members attended a workshop on the overfishing definition for billfish. The NMFS scheduled scoping meetings on Amendment 1 in the Gulf area. Council reviewed billfish stock assessment and bycatch information and commented to the NMFS on measures for Amendment 1 during the scoping period.

Butterfish FMP

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

Coral FMP

Council approved Draft Amendment 2 to regulate live rock for public hearings. The amendment was reviewed by the SSC. The Council and SAFMC scheduled public hearings and AP reviews in January. The Council scheduled public hearings (3) and reviews by AP and SSC on Draft Amendment 2 addressing harvest of live rock. In January, the Council took actions on the provisions of the amendment and submitted it to SAFMC for action at their February 1994 meeting. In March, the Council readdressed the amendment and alternatives selected by

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

SAFMC, adopted revised management measures, and resubmitted the amendment to SAFMC for action. The Council requested that the NMFS implement an emergency rule to prohibit wild live rock harvest in the area west of the Pasco/Hernando County, Florida, border to the Mississippi/Alabama border. This provision has been included in the revised amendment. The Council held public hearings (2) on Draft Amendment 2/SEIS addressing harvest of live rock. In May the Council approved the SAFMC amendment. The NMFS implemented an emergency rule to prohibit wild live rock harvest in the area west of the Pasco/Hernando County, Florida, border to the Mississippi/Alabama border. This provision has been included in the revised amendment for action in July. The Council approved Draft Amendment 2/SEIS addressing harvest of live rock and submitted it to the NMFS for implementation. The Council requested extension of the emergency rule and modified it to allow wild live rock harvest in the area west of the Pasco/Hernando County, Florida, border to the Mississippi/Alabama border. Staff was instructed to develop Amendment 3 to establish a TAC of live rock for the Gulf area.

Mackerel FMP

Public hearings (3) and AP and SSC reviews were held on Draft Amendment 7 which proposes commercial trip limits for Gulf group king mackerel in Northern and Southwestern areas of the Eastern Allocation Zone. The Council voted to request extension of the emergency rule dividing the eastern zone commercial king mackerel quota equally at the Dade/Monroe County, Florida, boundary. In January, the Council adopted the measures in Draft Amendment 7 which proposes commercial trip limits for Gulf group king mackerel in Northern and Southwestern areas of the Eastern Allocation Zone and submitted the amendment to SAFMC for action. Representatives of the Council attended the SAFMC February meeting to discuss the amendment. In March, the Council readdressed Amendment 7 and took final action on the amendment which was submitted to the NMFS for implementation. The Council scheduled stock assessment panel (SAP) and socioeconomic panel (SEP) meetings to review the 1994-1995 stock assessment prepared by the NMFS. The Council adopted Amendment 7 which proposes commercial trip limits for Gulf group king mackerel in Northern and Southwestern areas of the Eastern Allocation Zone and submitted the amendment to NMFS for implementation. SEFSC prepared the stock assessments for the mackerels and cobia. The Stock Assessment Panel (SAP) reviewed the stock assessments and drafted a report specifying the ABC ranges. The Socioeconomic Assessment Panel (SEP) reviewed the assessments and SAP report, recommended TAC levels, and analyzed the social and economic impacts of the levels. The SSC and AP reviewed the assessments and reports of the SAP and SEP and made recommendations to the Council including levels of TAC, bag limits, and quotas (by AP only). The Council, after public testimony, set TAC, bag limits, and quotas for Western Zone and for north and southwest areas of the Eastern Zone. A regulatory amendment to implement these measures for the 1994/1995 season was submitted to the NMFS. The Council requested the NMFS select members for a scientific panel of experts on stock identification to review the genetic and tag/recapture information on king mackerel and recommend a boundary between Gulf and Atlantic groups (stocks) of king mackerel. The Council instructed staff to establish a select scientific panel of experts to develop SPR strategy for management of mackerels and other finfish including overfishing and OY thresholds and strategies to achieve OY. The Council instructed staff to prepare an options paper for Draft Mackerel Amendment 8 (joint with SAFMC) which will consider changes to TAC framework measure, king mackerel stock boundaries, OY statement, permitting requirements, trip limits, gear restrictions, species managed, and other management measures. The NMFS approved Amendment 7 which proposes commercial trip limits for Gulf group king mackerel in Northern and Southwestern areas of the Eastern Allocation Zone and submitted the amendment to the NMFS for implementation. The NMFS approved the TAC, bag limits, and quotas for Western Zone and for north and southwest areas of the Eastern Zone. A scientific panel of experts on stock identification met, reviewed the genetic and tag/recapture information on king mackerel, and recommended the boundary between Gulf and Atlantic groups (stocks) of king mackerel remain the same. A select scientific panel of experts was selected to develop SPR strategy for management of mackerels and other finfish including overfishing and OY thresholds and strategies to achieve OY. Their meeting was scheduled for December.

Red Drum FMP

The GSMFC Red Drum Committee prepared a research protocol for determining the age structure of the offshore population.

Reef Fish FMP

The Council reviewed the recommendations of the Reef Fish Advisory Panel (AP), Ad Hoc Allocation AP, Law Enforcement AP, and Scientific and Statistical Committee (SSC) on the revised draft of Amendment 8 which addresses limited access for the commercial red snapper fishery. The Council revised portions of the amendment addressing limited access for further public review at workshops to be scheduled in the summer of 1994. Proposed rules for Amendment 7 and Amendment 5/SEIS were published for comment. The Council instructed staff to prepare Draft Amendment 9 to collect commercial red snapper landings data from vessel permittees and historical captains for the years 1990-1992 to establish their eligibility and potential shares under limited access systems and to extend the vessel permit moratorium and red snapper endorsement system for one or more years. The regulatory amendment setting TAC, bag limits, and commercial quotas for shallow-water grouper and red snapper were submitted to the NMFS for implementation. The Council withdrew a regulatory amendment previously submitted to the NMFS for implementation that would modify the boundary of the longline/buoy restricted area off Florida. The Council decision to withdraw this amendment was based on a NMFS presentation of updated information on 1993 shallow-water grouper landings and public comment (2 hearings) on the issue. The Council held hearings (11), AP and SSC reviews, and took final action on Draft Amendment 9 to collect commercial red snapper landings data from vessel permittees and historical captains for the years 1990-1992 to establish their eligibility and potential shares under limited access systems and to extend the vessel permit moratorium and red snapper endorsement system for one or more years. The amendment was submitted to the NMFS for implementation. Based on recommendations of an Ad Hoc Trap Definition AP and the Law Enforcement AP (LEAP), the Council developed and approved for public hearings a Generic Trap Definition Amendment that defines traps for reef fish, stone crab, spiny lobster, and blue crab fisheries. The draft amendment will be submitted to the NMFS for review. The LEAP reviewed reef fish regulations revised by the NMFS, and the Council took action on their recommendations. Based on discussions with fishermen denied permit endorsements to fish traps for reef fish, the Council requested the following actions be implemented by emergency action:

- Change the cut-off date to qualify for trap endorsements from November 19, 1992, to February 7, 1994.
- Authorize the NMFS to establish a Council appeals board for the fish trap endorsement to review cases and recommend to the RD whether an endorsement should be granted based on demonstrated fiscal hardship resulting from certain persons being unaware of the proposed moratorium. Appeals must meet the following criteria:
 - 1) Fish trap tags must have been purchased between November 19, 1992, and February 7, 1994; and
 - 2) Monthly landing reports must have been filed for all months that one was required, even if they were negative landing reports; and
 - 3) Between November 19, 1992, and February 7, 1994, investments in trap fishing must be shown by receipts and federal income tax forms, or the appeal applicant must be able to demonstrate that he had an incapacitating illness that prevented him from fishing traps between November 19, 1992, and February 7, 1994.

The actions were taken to alleviate financial and other hardships for fishermen who were unaware of the impending moratorium on vessel fish trap endorsements implemented by Amendment 5 and who had invested in trap fishing gear and had been issued permits to fish with traps by the NMFS. The emergency rule will be followed by Draft Amendment 10 to establish these measures for the duration of the three-year moratorium. Based on recommendations of an Ad Hoc Trap Definition AP and the Law Enforcement AP, the Council developed and held public hearings (6) on a Generic Trap Definition Amendment that defines traps for reef fish, stone crab, spiny lobster, and blue crab fisheries. The draft amendment will be acted on by the Council in July. The LEAP reviewed reef fish regulations revised by the NMFS, and the Council took action on their recommendations. The Council held public hearings (5) on Draft Amendment 10 to extend the following emergency action for the duration of the moratorium on fish trap endorsements:

- Change the cut-off date to qualify for trap endorsements from November 19, 1992, to February 7, 1994.

- Authorize the NMFS to establish a Council appeals board for the fish trap endorsement to review cases and recommend to the RD whether an endorsement should be granted based on demonstrated fiscal hardship resulting from certain persons being unaware off the proposed moratorium.

After reviewing public, federal, AP, and SSC comments, the Council rejected the amendment. The Council instructed staff to prepare 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 Council convened its Special Management Zone (SMZ) Monitoring Team to address a request by the state of Alabama to establish one or more SMZs in federal waters. The monitoring team assessed the scientific information related to this request and held a public workshop/scoping meeting. The public was invited to provide information at the workshop that would be of use to monitoring teams in developing a report to the Council. The SMZ monitoring team will be convened next quarter to complete its report. The Council developed the Generic Trap Definition Amendment that defines traps for reef fish, stone crab, spiny lobster, and blue crab fisheries. Based on NMFS comments on the draft amendment, action was deferred until staff revised the amendment and review by the Stone Crab and Spiny Lobster APs. The Ad Hoc Red Snapper AP reviewed revised Draft Amendment 8 which includes limited access systems for the red snapper fishery. The AP recommended changes to the Council in the amendment. The Southeast Fisheries Science Center (SEFSC) completed stock assessments on red snapper, gag, and red grouper. The Reef Fish Stock Assessment Panel (RFSAP) reviewed the assessments and set the acceptable biological catch (ABC) range for red snapper and recommended maintaining status quo for grouper stocks. The Socioeconomic Assessment Panel (SEP) reviewed the RFSAP report and economic assessments prepared by the NMFS Economic and Trade Analysis Division. They developed alternatives for the Council on total allowable catch (TAC) and likely social and economic impacts. The SSC and AP reviewed the assessments, RFSAP report, and SEP report and developed recommendations to the Council. The Council set TAC for red snapper for 1995 including reductions in the recreational fishing mortality necessary to prevent catch from exceeding the recreational allocation. They deferred the issue of changes in red grouper size limit to the November meeting when data from observer programs will be available. The staff continued preparation of 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 options paper will be acted upon in November. The Special Management Zone (SMZ) Monitoring Team completed its report addressing a request by the state of Alabama to establish one or more SMZs in federal waters. The Council deferred action on the report until November.

Shark FMP*

Council and staff members served on the Shark Operations Team.

Shrimp FMP

Staff prepared Draft Amendment 7 addressing overfishing definitions for royal red shrimp and white shrimp for review in January by AP, SSC, and Council prior to scheduling public hearings. The Council reviewed presentations by the NMFS and discussed the shrimp vessel effort collection system and deferred the issue for review by a panel of experts in 1994. The Council approved Draft Amendment 7 addressing overfishing definitions for royal red shrimp and white shrimp for public hearings. The draft amendment was reviewed by the AP and SSC and public hearings (5) were held. Based on recommendations of the AP and SSC, the Council retained the geographical extent of the 45-day, cooperative shrimp closure off Texas to 200 miles for the 1994 season. The Council approved Amendment 7 addressing overfishing definitions for royal red shrimp and white shrimp and submitted it to the NMFS for implementation. A panel of experts convened by the Council reviewed the NMFS effort data collection system and analysis methodology and reported to the Council. The Council scheduled a Progress Report on the Cooperative Shrimp Trawl Bycatch Research Program. Included were discussions of the following topics:

- Background and overview of the Bycatch Research Program;
- The Bycatch Research Plan;
- Bycatch characterization, including bycatch composition and CPUEs as a function of area and time, the precision of these estimates, and completeness of the data base;

- Finfish mortality estimates, including estimation methods and report on the most recent and best estimates of shrimp trawl induced mortality for selected finfish species with emphasis on red snapper. Also included were estimates of bycatch reduction (red snapper) attributable to the Texas closure, TEDs, and changes in fishing effort. An assessment of changes in red snapper mortality and stock rebuilding timetables resulting from the use of bycatch reduction devices (BRDs) were included;
- Bycatch reduction by TEDs;
- BRDs, including presentations on BRD development and testing protocol, overall BRD evaluation results to date, and review significant evaluation results with emphasis on red snapper exclusion and shrimp retention;
- Social and economic research, including sociological and economic descriptions of the shrimp fishery; an overview of bio-economic modeling efforts, and initial assessments of the impacts of BRDs and other management measures on shrimp fleet size, the shrimp fishery, and shrimp processors;
- Predator/prey bycatch reduction model, including progress made in developing and refining an ecological model for use in evaluating bycatch reduction strategies;
- Research program recommendations.

After the conclusion of the presentations, the Council recommended that emphasis be placed on BRD development during the final year of the research program. They felt that the characterization information collected correlated well with estimates of red snapper bycatch derived from research vessel sampling. The NMFS published proposed rules for Amendment 7 addressing overfishing definitions for royal red shrimp and white shrimp. The Council reviewed reports by the NMFS on the status of shrimp stocks in relation to overfishing and on the Tortugas pink shrimp fishery. The NMFS presented an update on BRD development and analyses of the escapement rates of Age 1 juvenile red snapper. Since several types of gear reduced trawl mortality on these juvenile snappers by 50 percent, the Council acted to begin developing an amendment to reduce shrimp trawl bycatch of finfish using BRDs.

Spiny Lobster FMP

Based on recommendations of an Ad Hoc Trap Definition AP and the LEAP, the Council approved a draft Generic Trap Definition Amendment for public hearings which would define traps used in reef fish, spiny lobster, stone crab, and blue crab fisheries. The advisory panel (AP) and Scientific and Statistical Committee (SSC) reviewed a Draft Generic Trap Definition Amendment which would define traps used in reef fish, spiny lobster, stone crab, and blue crab fisheries. The Stone Crab and Spiny Lobsters committees reviewed permit sanctions being taken by the Florida Department of Environmental Protection (FDEP) for violation of fishing rules. The Council requested the FDEP provide them with a proposed rulemaking which will set the level of violations which would result in sanctions against permits. The rulemaking will be reviewed by the Stone Crab and Spiny Lobster APs. The committee reviewed a Draft Amendment (4) prepared by the SAFMC for implementing bag limits of spiny lobster off Georgia through North Carolina.

Stone Crab FMP

Based on recommendations of an Ad Hoc Trap Definition AP and the LEAP, the Council approved a draft Generic Trap Definition Amendment for public hearings which would define traps used in reef fish, spiny lobster, stone crab, and blue crab fisheries. The Council reviewed and approved for public hearings (4) and for reviews by AP and SSC Draft Amendment 5. The amendment proposed (1) a four-year moratorium on registering vessels under the FMP while the commercial industry and state of Florida examine effort limitation systems and (2) a protocol and procedure (framework measure) under which certain types of rules adopted for the fishery by the state of Florida can be implemented in the EEZ by regulatory amendment with the concurrence of the NMFS and the Council. The AP and SSC reviewed a Draft Generic Trap Definition Amendment which would define traps used in reef fish, spiny lobster, stone crab, and blue crab fisheries. The Council held public hearings (5) and reviews by AP and SSC on Draft Amendment 5. The amendment proposed (1) a four-year moratorium on registering vessels under the FMP while the commercial industry and state of Florida examine effort limitation systems and (2) a protocol and procedure

(framework measure) under which certain types of rules adopted for the fishery by the state of Florida can be implemented in the EEZ by regulatory amendment with the concurrence of the NMFS and the Council. The Council approved the amendment and submitted it to the NMFS for implementation. The Stone Crab and Spiny Lobster committees reviewed permit sanctions being taken by the Florida Department of Environmental Protection (FDEP) for violation of fishing rules. The Council requested the FDEP provide them with a proposed rulemaking which will set the level of violations which would result in sanctions against permits. The rulemaking will be reviewed by the Stone Crab and Spiny Lobster APs. The Council requested SAFMC agree to allow the Council to continue managing stone crab in the EEZ south of the Florida Keys. The original FMP extended management to that area which subsequently became SAFMC jurisdiction.

Swordfish FMP*

Council Chairman participated as member of the ICCAT Advisory Committee. A Council representative participated as member of the ICCAT Working Group.

Tuna FMP*

Council Chairman participated as member of the ICCAT Advisory Committee. A Council representative participated as member of the ICCAT Working Group. Council representatives attended the Bluefin Tuna Working Group meeting.

*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.

OTHER ACTIONS

Habitat

Council reviewed information on the impacts of the environmental degradation of Florida and prepared a resolution citing these biological, social, and economic impacts. The resolution was submitted to all affected state and federal agencies urging a coordinated effort to restore that ecosystem. The Corps of Engineers was notified that the Council opposes a proposal to install a system of artificial reefs and fish processing facilities on non-producing petroleum platforms in the Gulf off Mexico based on the lack of definitive information contained in the permit application and the applicants' personal presentation. The Corps of Engineers was advised that the Council will reconsider its position during its regular meeting in May 1994, if new and more definitive information is presented by the applicant. Fishery aspects of a marsh management research project being conducted by the NMFS Galveston Laboratory were recommended to be reviewed by the Texas Habitat Protection Advisory Panel during its April 27, 1994, meeting. Those invited to participate in the meeting included Louisiana/Mississippi Habitat Advisory Panel members representing Louisiana Department of Wildlife and Fisheries, Louisiana Department of Natural Resources, U.S. Fish and Wildlife Service, and the NMFS. The NMFS headquarters was notified that the Council strongly supports Galveston Laboratory involvement in the Department of Interior, National Biological Survey, Marsh Management Study and urged funding beyond the current one year appropriation. The National Biological Survey was urged to continue their study into the management phase. State and federal planning and resource agencies in Texas and Louisiana were urged to coordinate with each other, the public, and key user groups concerning the Trans-Texas Water Plan. Appropriate state and federal resource agencies in Texas and Louisiana were urged to investigate methods of protecting estuarine functions and habitat values potentially affected by the Trans-Texas Water Plan. The state of Texas was urged to make the health and well-being of the Texas coastal bays and estuaries an objective of the Trans-Texas Water Plan. The Galveston District, Corps of Engineers and the Houston Port Authority were complimented for their joint venture in creating a demonstration marsh area on a Houston ship channel dredged material disposal site. The Council expressed concern over spoil disposal in Laguna Madre and that no alternative solution to open water disposal has been found. The Council considers open water disposal as an alternative of last resort in Laguna Madre and requested to be advised if further open water disposal is planned. The Texas Habitat Protection AP and the Louisiana/Mississippi Habitat Protection AP were convened separately to address habitat

protection issues for those respective states. Two Council members and one staff person participated in the EPA's marsh management workshop. The Council urged the Corps of Engineers to sufficiently fund the completion of the Programmatic EIS that is currently underway. The Florida/Alabama Habitat Protection AP and the Joint Habitat Protection AP were convened separately to address habitat protection issues.

OPERATIONAL AND OTHER ACTIVITIES

Budget

The Council reviewed the FY 1993 budget status and the activities to be included in the FY 1994 budget amendment which will be submitted in January. The Council approved obtaining property damage insurance for Council equipment. A Premium Only Plan was adopted for staff resulting in a cost savings in employer FICA. The Council approved having staff prepare Council salary checks in-house and discontinuing the payroll service. The Council submitted an amendment to the FY 1994 budget. Staff drafted the FY 1995 budget which was approved by the Budget Committee and submitted to the NMFS. The Council selected Rivero, Gordimer, and Company to conduct the audit for the FY 1993 and FY 1994 cooperative agreements. The Council approved, and staff prepared an amendment to the FY 1994 budget.

SSC Selection

The committee appointed persons to the Select Scientific Committee to examine SPR management strategies.

Other Meetings

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

- EPA Living Resources Committee
- MARFIN Conference and Program Board
- ICCAT Advisory Committee
- GSMFC
- OCS Policy Committee
- Council Member Orientation Meeting
- Ad Hoc Trap AP
- MMS Advisory Committee
- Operations Plan Meeting
- ICCAT Working Groups
- Shrimp Effort Workshop
- GSMFC Data Management Subcommittee
- NMFS Social Information Task Team
- SAFMC Workshop on FKNMS Fishing Rules
- MARFIN Program Management Board
- Council Chairmen's Meeting in Washington, DC
- NMFS Review of MRFSS Methodology
- GSMFC RecFin Meeting
- Program Effectiveness Review of the NMFS
- MexUS Gulf Meeting
- Florida CZM Symposium
- Grouper Quota Monitoring Team
- Mackerel Stock I.D. Panel
- SMZ Monitoring Team

STATUS OF PLAN DEVELOPMENT - OCTOBER 1, 1993 THROUGH SEPTEMBER 30, 1994

Fishery Management Unit	Completed Implementation as of September 30, 1994	Target Date	Remarks
*Billfish Plan ^{2,3}		1988	Amendment 1 being developed.
Butterfish			Development of Draft FMP deferred indefinitely.
Coastal Herring	Final profile completed.	None	No further action.
Coral ³	Amendment 1 implemented.	1984	Draft Amendment 2 for live rock submitted for implementation. Draft Amendment 3 proposed.
Groundfish	Draft completed, FMP development suspended.	None	
Mackerel ^{1,2,3}	Amendments 3, 4, 5, 6, and 7 implemented.	1983	Draft Amendment 8 proposed.
Reef Fish ^{2,3}	Amendments 1 through 9 implemented. Amendment 10 withdrawn.	1984	Draft Amendment 11 being prepared. (**) Draft Amendment 8 being revised.
Red Drum ^{1,2,3}	Amendments 1, 2, and 3 implemented.	1986	
*Shark		1993	Amendment 1 proposed.
Shrimp ^{1,2,3}	Amendments 1, 2, 3, 4, 5, and 6 implemented.	1981	Amendment 7 submitted for implementation.
Spiny Lobster ^{1,2,3}	Amendments 1, 2, and 3 implemented.	1982	(**) SAFMC draft Amendment 4 prepared.
Stone Crab ^{1,2,3}	Amendments 1, 2, 3, and 4 implemented.	1979	Amendment 5 submitted for implementation. (**)
*Swordfish ^{2,3}		1986	Amendment 1 proposed.
*Tuna		1995	Scoping meetings scheduled.

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, 1993 THROUGH SEPTEMBER 30, 1994

TYPE OF MEETING **NUMBER OF MEETINGS**

Council 6

Public Hearings:

Coral 7
 Florida Keys National Marine Sanctuary 1
 Generic Amendment 7
 Mackerel 2
 Reef Fish 19
 Shrimp 5
 Stone Crab 5

S&S Committee:

Standing SSC 4
 Coral 1
 Mackerel 2
 Reef Fish SSC 4
 Shrimp 1
 Spiny Lobster 1
 Socioeconomic Panel 2
 Stone Crab 1

Stock Assessment Panels

Mackerel 2
 Reef Fish 1

Advisory Panels:

Ad Hoc Allocation 1
 Ad Hoc Red Snapper 1
 Ad Hoc Trap Definition 1
 Coral 1
 FL/AL Habitat Protection 1
 Joint Habitat Protection 1
 LA/MS Habitat Protection 1
 Law Enforcement 2
 Mackerel 2
 Reef Fish 3
 Shrimp 1
 Spiny Lobster 1
 Stone Crab 1
 Texas Habitat Protection 1

Fishery Management Committees*:

Butterfish 0
 Coastal Migratory Pelagic (Mackerel) 3

Coral	3
Migratory Species	3
Red Drum	0
Reef Fish	6
Shrimp	5
Spiny Lobster	1
Stone Crab	3

Council Committees*

Administrative Policy	0
Advisory Panel Selection	0
Artificial Reef	0
Budget	3
Data Collection	0
Habitat Protection	4
Law Enforcement	1
Personnel	0
SSC Selection	3
Pension Plan Trustees	0

*Meetings usually held in conjunction with Council meetings.

COMMITTEE AND PANEL MEMBERS AS OF SEPTEMBER 30, 1994

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	9
Special Reef Fish	6
Special Shark	5
Special Shrimp	6
Special Spiny Lobster	3
Special Stone Crab	3
Mackerel Stock Assessment Panel	7
Red Drum Stock Assessment Panel	7
Reef Fish Stock Assessment Panel	8
Shrimp Stock Assessment Panel	7
Socioeconomic Assessment Panel	9

Advisory Panels

Billfish	15
Butterfish	8
Coastal Migratory Pelagic	15
Coral	8

Habitat Protection	
Florida/Alabama	8
Mississippi/Louisiana	10
Texas	10
Law Enforcement	10
Red Drum	15
Reef Fish	15
Shark	8
Shrimp	17
Spiny Lobster	8
Stone Crab	8
Swordfish	8
Tuna	8
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

Lower Mississippi River Conservation Committee

The Gulf Coast Fisheries Coordination Office (FCO) continued to act as a point of contact and facilitator for the Lower Mississippi River Conservation Committee (LMRCC) during the first part of the year. A Lower Mississippi River Fisheries Coordinator was appointed in April and stationed in Vicksburg, Mississippi.

The third annual LMRCC meeting was held in conjunction with the American Fisheries Society, Southern Division's mid-year technical session in Little Rock, Arkansas, in March. The Missouri Department of Natural Resources signed the LMRCC constitution and by-laws in January, bringing the total voting members to 11.

Apalachicola-Chattahoochee-Flint Rivers Coordination

The Panama City Fisheries Resource Office (FRO) continued serving as coordinator of the Apalachicola-Chattahoochee-Flint (ACF) River Striped Bass Restoration Committee. The 11th Annual *Morone* Workshop was sponsored by the Florida Game and Freshwater Fish Commission in Chattahoochee, Florida, in February to discuss progress in restoring striped bass in the Apalachicola River system. Decisions were made regarding definition of Gulf striped bass and the need for better defining restoration goals.

The Panama City FRO began conducting a roving creel census in the lower Apalachicola River, Florida, for the Florida Game and Fresh Water Fish Commission. This cooperative project will help quantify striped bass restoration goals and objectives by measuring angler success.

Striped bass broodfish collection began in March in the Apalachicola River by the Panama City FRO. Broodstock were also supplied by local sport fishermen and from Florida and Georgia Fish and Game Commissions. The Panama City FRO prepared an ACF Striped Bass Restoration Plan for review during the year.

Striped Bass Fry and Fingerling Production

U.S. Fish and Wildlife Service (FWS) personnel assisted state agencies with broodstock collection for striped bass fry production. Welaka and Mammoth Spring National Fish Hatcheries (NFHs) produced approximately 6,000,000 Gulf race striped bass fry. Over 1,800,000 Phase I striped bass fingerlings and over 30,000 Phase II striped bass fingerlings were produced by Carbon Hill (AL), Natchitoches (LA), Private John Allen (MS), Warm Springs (GA), and Welaka (FL) NFHs and stocked in various streams and reservoirs as part of the Gulf-wide anadromous striped bass restoration effort. Additionally, Uvalde and Inks Dam NFHs in Texas and Tishomingo NFH in Oklahoma grew Phase I striped bass for stocking into coastal Texas rivers. Approximately 856,000 fingerlings were stocked in Trinity Bay and 865,000 in Sabine Lake.

Striped Bass Phase II Stocking Evaluation, Lower Apalachicola River

The Panama City FRO fisheries staff, with assistance from hatchery staff and Florida Game and Fresh Water Fish Commission (FCFWFC) marked approximately 30,000 phase II striped bass in November. The fish were stocked at four sites in the lower Apalachicola River. The FCFWFC has an ongoing study on the success of stocking Phase II versus Phase I fish.

Striped Bass Movements and Habitats in the Sabine River

The Baton Rouge FRO concluded the striped bass radiotelemetry study on the Sabine River below Toledo Bend Dam that was begun in 1992. Twenty-one adult striped bass were implanted with radio transmitters and

released in the Sabine River (Louisiana and Texas) below Toledo Bend Dam during March and May 1992 (11) and January 1993 (10). Implanted fish were radio-tracked by boat, air, and land reconnaissance.

The last radiotagged striped bass signals were detected near the Toledo Bend Dam spillway in April by ground reconnaissance. The signals were barely detectable, as the 60-week batteries were into their 65th week of operation. No further radiotracking trips were made, and a final report on the study was in preparation during the remainder of the year.

Other Striped Bass Activities

A proposal for a joint project with the Gulf Coast Research Laboratory, Ocean Springs, to compare growth and survival of Gulf race vs Atlantic race striped bass in the Pascagoula River was submitted to the FWS regional office in June in response to a notice concerning funding available for field projects. A similar challenge cost share proposal was submitted to the regional office in November.

U.S. Fish and Wildlife Service personnel met with Florida Game and Freshwater Fish Commission personnel in January at Crestview and Holt, Florida, to discuss various issues regarding Gulf striped bass restoration. A major outcome of that meeting was a decision to develop a budget initiative and memorandum of agreement with the five Gulf States regarding Gulf striped bass restoration. A draft budget initiative on Gulf anadromous fish restoration was prepared in March. The Gulf Coast FCO drafted a cooperative agreement in October between the FWS, NMFS, GSMFC, and the Gulf States on striped bass restoration.

Gulf Sturgeon Recovery Activities

The Gulf Sturgeon Recovery Team met at the Panama City FRO to review comments submitted during the technical review of the draft "Recovery/Management Plan" for the Gulf sturgeon. The document was submitted to the regional office in April for agency review.

In April, a meeting was held at the Ecological Services Field Office in Daphne, Alabama, for FWS field offices to discuss the effects of dredging on all sturgeon species in Gulf drainages.

The Panama City FRO and Gulf Coast FCO conducted sampling for Gulf sturgeon in the lower Mobile River and bay during March. A 30-pound sturgeon was caught by a commercial fisherman at the mouth of Bayou LaBatre in the Mississippi Sound and was radio tagged and released near the capture site. Hopefully, telemetry monitoring will document the fish's movement and habitat use in the Mobile River system. Gulf sturgeon sampling also was conducted in the Escambia and Ochlockonee Rivers, Florida.

The Panama City FRO and Mississippi State University personnel sampled for Gulf sturgeon during March in the Pascagoula River, Mississippi. One sturgeon weighing four pounds was collected, tagged, and released.

A draft Corps of Engineers (CE) plan for Gulf sturgeon monitoring in the West Pearl River, Louisiana, was received on May 13 and distributed to the Gulf Sturgeon Recovery Team for review on May 17. Comments were compiled and submitted to the Ecological Services Field Office in Vicksburg, Mississippi, on June 12. Copies of a revised monitoring plan were distributed to the Gulf Sturgeon Recovery Team in September. Additional comments on the monitoring plan were developed and submitted to the Vicksburg Ecological Services Field Supervisor in November.

Gulf Sturgeon Stock Identification

The FWS contracted with the GSMFC for a study by Dr. Ike Wirgin of the New York University Medical Center (NYUMC) to conduct analyses of mitochondrial DNA from Gulf sturgeon collected in river drainages of the northern Gulf of Mexico. The goal was to collect at least 20 samples from 10 river systems. Results from the first 60 fish analyzed (Suwannee, Ochlockonee, Apalachicola, and Choctawhatchee rivers in Florida and the Pearl River in Louisiana) indicated a difference between the Apalachicola, Ochlockonee, and Suwannee river populations

compared with populations to the west. They also indicated that the Choctawhatchee River population may be discrete and that a third subdivision may exist in western Gulf rivers. Dr. Wirgin suggested that Gulf sturgeon populations may be region-specific and perhaps river-specific. Samples collected in 1994 were from the Pascagoula River, Mississippi; Pearl River, Louisiana; Choctawhatchee and Escambia rivers, Florida; and Mobile Bay, Alabama. All were shipped to NYUMC, but none were analyzed during 1994.

Gulf Sturgeon Population Survey in the Choctawhatchee River

The Panama City FRO collected 25 Gulf sturgeon in Choctawhatchee Bay and equipped them with external radio transmitters in 1994. This project to develop a population assessment model for Gulf sturgeon in the river was initiated through a cooperative research work order with North Carolina State University. This model will help to evaluate the status of Gulf sturgeon populations and will provide information on statistically valid population sampling designs.

Radio tracking for Gulf sturgeon in the Choctawhatchee River, Florida, continued through the summer and was completed for the season in the fall of 1994. The radios are designed to turn off after six months of use and will remain off while the fish are in salt water. The signals will reactivate as the fish begin to migrate into fresh water.

Gulf Sturgeon Riverbank Holding/Hatching Facility on the Choctawhatchee River

The temporary Gulf sturgeon river bank hatchery was set up on the lower Choctawhatchee River in March. However, no eligible fish were collected, and the river bank hatchery was dismantled in May.

OTHER COASTAL FISHERIES

FISH HABITAT PROTECTION/ENHANCEMENT

Ecosystem Management

In 1994, the FWS began developing an ecosystem approach to fulfilling its mission. A total of 13 ecosystem units, developed primarily on a watershed basis, were delineated for Gulf of Mexico watersheds. Self-managing teams, composed of field station personnel, were charged with developing ecosystem management strategies for FWS trust resources in each of the ecosystem units. This was an ambitious task given the time available, and strategies were in place by October 1994. It is envisioned that these strategies will be refined in future iterations involving more effective input and involvement of states and other natural resource management partners.

National Estuarine Research Reserve System

In December FWS personnel participated in a meeting held by the Mississippi Department of Marine Resources and the Mississippi State University Coastal Research and Extension Center to discuss beginning a process that may lead to designation of a National Estuarine Research Reserve (NERR) in Mississippi.

Gulf of Mexico Program

The FWS continued involvement with the Gulf of Mexico Program (GMP) at various levels during 1994. These included the Policy Review Board, Management Committee, Coastal and Shoreline Erosion Committee, Freshwater Inflow Committee, Habitat Degradation Committee, Living Aquatic Resources Committee, Nutrient Enrichment, Public Education and Outreach Committee, Marine Debris Committee, and the Toxics and Pesticides Committee.

Other Habitat Protection Activities

The FWS's Ecological Services Field Offices, Fisheries Resource and Coordination Offices, and Refuges and Wildlife personnel were involved in various anadromous and coastal fisheries habitat issues during the year. These included:

- a proposed low-flow study for the lower Pascagoula River;
- the West Pearl River Navigation Project;
- two proposed offshore "aquaculture" projects (Marine Artificial Habitats, Inc. and Watermark, Inc.);
- the Vicksburg District Corps of Engineers (Corps) proposed Pearl River Gulf sturgeon monitoring plan;
- Mississippi Gulf Coast permit problems related primarily to casino-related/induced situations;
- planting marsh grass at the upper end of Mobile Bay;
- a section 7 review for Gulf sturgeon at the Florida Power outfall on the Suwannee River, Florida;
- comments on a National Marine Fisheries Service research proposal to evaluate fisheries impacts as part of the National Wetlands Research Center's marsh management study;
- scoping for feasibility studies of barrier island restoration and major Mississippi River sediment diversions;
- Coastal Wetlands Planning, Protection, and Restoration Act activities;
- participation in developing long term management strategies for dredge spoil along navigation channels in the Louisiana coastal zone;
- participation in an Environmental Protection Agency (EPA) sponsored meeting in Baton Rouge, Louisiana, to discuss a strategy for resolving marsh management conflicts in coastal Louisiana;
- participation in *ad hoc* work group meetings on the Mississippi and Louisiana Estuarine Areas Freshwater Introduction Project;
- coordination with the Natural Resources Conservation Service, U.S. Army Corps of Engineers, and the EPA regarding wetland mapping conventions as required by the 1994 Interagency MOA on jurisdictional wetlands; and
- a Section 10 (Rivers and Harbors Act) permit by Watermark Corporation to use an offshore oil and gas platform for a mariculture operation in the Gulf of Mexico south of Grand Isle, Louisiana.

PUBLIC OUTREACH/EDUCATION

The Gulf Coast FCO participated in the Mississippi Environmental Workshop in February at the University of Southern Mississippi Gulfport Campus, Gulfport. The workshop was designed to increase public awareness of important Gulf of Mexico environmental issues. Presentations were given on nutrient enrichment and habitat degradation.

Gulf Coast FCO personnel coordinated an Earth Day event at Gulf Islands National Seashore (GINS), Ocean Springs, in April.

The Gulf Coast FCO coordinated a "Pathway to Fishing" event in Gautier, Mississippi, in May. The event's purpose was to teach young people basic techniques and ethics of sport fishing. Forty-nine adults and 57 youth participated in the event.

The Gulf Coast FCO personnel authored and designed an educational coloring book, *Fishing ABCs*, in 1991. The coloring book was approved for printing in late April 1994 and was distributed to other FWS offices nationwide. The coloring book was designed to be an informational and educational tool for children and to increase their knowledge and interest in fishing and the aquatic environment.

Gulf Coast FCO personnel assisted the J.L. Scott Marine Education Center and Aquarium in Biloxi, Mississippi, with the *Sea Camp* program in June. They assisted with teaching 6-8 and 11-12 year old students about the marine environment and gave presentations on endangered species, freshwater fish biology, and the Gulf sturgeon.

The Coastal FRO in Corpus Christi, Texas, and the Gulf Coast FCO coordinated a transfer of juvenile Gulf sturgeon from the University of Florida to the Texas State Aquarium at Corpus Christi for display purposes during July.

The Gulf Coast FCO staffed an information booth at the "Pass Christian Celebrates the Gulf" festival in Pass Christian, Mississippi, in October. The exhibit was visited by a large number of people. Many brochures on coastal resources were distributed and personal contacts made.

The Gulf Coast FCO helped coordinate a special fishing event for mentally handicapped adults during the first week of October in celebration of National Hunting and Fishing Week. A t-shirt featuring striped bass was provided to the participants.

FEDERAL AID FUNDING

The FWS continued providing funds to Gulf of Mexico states for a number of anadromous, 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, 1994

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

**GULF STATES MARINE FISHERIES COMMISSION
DECEMBER 31, 1994**

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
POST OFFICE BOX 6247
D'IBERVILLE, MS 39532

(601) 392-2675

J.E. Fountain, Jr., E.A., A.T.A.
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R.P. Seymour, P.A.
National Society of Public Accountants
Mississippi Society of Public Accountants

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, 1994, 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, 1994, and the results of its operations and cash flows for the year then ended in conformity with generally accepted accounting principles.

Fountain, Seymour, Mosher & Associates.
D'Iberville, Mississippi
May 12, 1995

**GULF STATES MARINE FISHERIES COMMISSION
BALANCE SHEET
DECEMBER 31, 1994**

	UN- Restricted Fund	Restricted Funds	TOTAL All Funds
ASSETS			
CURRENT ASSETS:			
Cash	136,932		136,932
Certificate of Deposit	25,405		25,405
Due from other Funds	<u>21,354</u>		<u>21,354</u>
	183,691		183,691
PROPERTY AND EQUIPMENT			
Fixed Assets	93,644	40,230	133,874
Less Accumulated Depreciation	(55,407)		(55,407)
Less Contra Account		<u>(39,581)</u>	<u>(39,581)</u>
	<u>38,237</u>	<u>649</u>	<u>38,886</u>
TOTAL ASSETS	<u>221,928</u>	<u>649</u>	<u>222,577</u>
LIABILITIES AND FUND BALANCE			
CURRENT LIABILITIES:			
Note Payable	25,405		25,405
Due to Other Funds		21,354	21,354
Accrued Payroll Withholding	<u>3,779</u>		<u>3,779</u>
TOTAL CURRENT LIABILITIES	29,184	21,354	50,538
FUND EQUITY			
Fund Balance Unrestricted	192,744		192,744
Fund Balance Restricted		<u>(20,705)</u>	<u>(20,705)</u>
TOTAL FUND EQUITY	<u>192,744</u>	<u>(20,705)</u>	<u>172,039</u>
TOTAL LIABILITIES AND FUND EQUITY	<u>221,928</u>	<u>649</u>	<u>222,577</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, 1994**

	UN- Restricted Fund	Restricted Funds	TOTAL All Funds
<u>REVENUES</u>			
Member State Appropriations	106,875		106,875
Grants and Agreements		383,584	383,584
Interest Earned	4,235		4,235
Miscellaneous Income	<u>6,074</u>		<u>6,074</u>
Total Revenue	117,184	383,584	500,768
<u>EXPENSES</u>			
Salaries	59,222	182,052	241,274
Health Insurance	9,574	28,878	38,452
Retirement	4,805	14,678	19,483
Office Rental	4,537	19,073	23,610
Equipment Rental	149	465	614
Office Supplies	4,071	6,743	10,814
Postage	406	8,522	8,928
Travel	5,083	47,996	53,079
Telephone	1,568	9,269	10,837
Copying Expense	1,058	4,074	5,132
Printing	446	3,290	3,736
Meeting Cost	7,965	6,574	14,539
Dues and Subscription	1,226	1,029	2,255
Auto Expense	554	386	940
Insurance	1,359	2,712	4,071
Maintenance and Repairs	1,143	3,528	4,671
Courtesies	398		398
Professional Services	1,101	3,399	4,500
Depreciation	9,328		9,328
Taxes-Payroll	4,530	13,927	18,457
Other Taxes	330	929	1,259
Contractual		51,832	51,832
Interest	<u>151</u>		<u>151</u>
Total Expenses	<u>119,004</u>	<u>409,356</u>	<u>528,360</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, 1994**

	UN- Restricted Fund	Restricted Funds	TOTAL All Funds
Excess of Revenue over Expenses	(1,820)	(25,772)	(27,592)
Fund Balance, Jan. 1, 94	<u>199,045</u>	<u>42,016</u>	<u>241,061</u>
Transfers In (Out)	(7,082)	7,082	0
Prior Period Adjustment Accounts Receivable Transfers	<u>2,601</u>	<u>(44,031)</u>	<u>(41,430)</u>
Fund Balance, Dec. 31, 94	<u><u>192,744</u></u>	<u><u>(20,705)</u></u>	<u><u>172,039</u></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, 1994**

CASH FLOWS FROM OPERATING ACTIVITIES:	
Net Decrease in Fund Balance	(69,022)
Adjustments to Reconcile Net Decrease in Fund Balance to Net Cash Used By Operating Activities -	
Depreciation	9,328
Changes in Operating Assets and Liabilities -	
Decrease in Receivables	31,155
Decrease in Deferred Amounts	17,796
Increase in Accrued Payroll Withholding	<u>2,835</u>
Net Cash Used by Operating Activities	(7,908)
 CASH FLOWS FROM FINANCING ACTIVITIES:	
Proceeds from loan	25,405
Principal payments on loan	<u>(4,861)</u>
Net Cash Provided by Financing Activities	<u>20,544</u>
 CASH FLOWS FROM INVESTING ACTIVITIES:	
Purchase Fixed Assets	<u>(20,966)</u>
Net Cash Used by Investing Activities	<u>(20,966)</u>
Net Decrease in Cash	(8,330)
Cash at Beginning of Year	<u>170,667</u>
Cash at End of Year	<u><u>162,337</u></u>

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

**GULF STATES MARINE FISHERIES COMMISSION
NOTES TO FINANCIAL STATEMENTS
December 31, 1994**

**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, 1994, was \$9,328.

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, 1994 are as follows:

1995	15,720
1996	15,720
1997	15,720
1998	15,720
1999-2002	<u>62,880</u>
TOTAL	125,760

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, 1994 was \$19,483.

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

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

ACCOUNTANTS & AUDITORS
POST OFFICE BOX 6247
D'IBERVILLE, MS 39532

(601) 392-2675

J.E. Fountain, Jr., E.A., A.T.A.
National Association of Enrolled Agents
Mississippi Association of Enrolled Agents

R.F. Mosher, C.P.A.
American Institute of C.P.A.'s
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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, 1994, and have issued our report thereon dated May 12, 1995. 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.

Fountain, Lyman, Mosher & Co.

D'Iberville, Mississippi
May 12, 1995

**GULF STATES MARINE FISHERIES COMMISSION
 SCHEDULE OF FEDERAL AWARDS
 For The Year Ended December 31, 1994**

<u>Federal Grantor/Program Title</u>	<u>Award #</u>	<u>Federal CFDA Number</u>	<u>Program Award Amount Federal Share</u>
<u>MAJOR PROGRAMS</u>			
<u>Department of Commerce</u>			
Southeast Area Monitoring and Assessment Program	NA47F0038	11.300	94,781
Interjurisdictional Fisheries Management Plans	NA26FI0026-03	11.300	<u>98,333</u>
TOTAL DEPARTMENT OF COMMERCE			<u>193,114</u>
<u>Department of Interior</u>			
Cooperative Interstate Fishery Management in the Territorial Seas of the Gulf of Mexico	14-16-0009-90-1211	15.605	270,155
Sports, Fish Restoration Program	14-48-0009-93-1231	15.605	181,947
	14-48-0009-94-1223	15.605	<u>200,000</u>
TOTAL DEPARTMENT OF INTERIOR			<u>652,102</u>
TOTAL MAJOR PROGRAMS			<u>845,216</u>
<u>NON-MAJOR PROGRAMS</u>			
<u>Department of Commerce</u>			
Gulf of Mexico Fishery Management Council	94-65-07600	11.300	27,410
	95-65-07600	11.300	25,000
<u>Department of Interior</u>			
The Development and use of Restriction Fragment Length DNA Polymorphism Probes for Striped Bass Identification	14-16-0004-91-920	15.605	65,000
Cooperative Agreement to Provide Clerical Support	14-16-0004-95-904	15.605	12,000
	14-16-0004-94-904	15.605	<u>12,000</u>
TOTAL NON-MAJOR PROGRAMS			<u>141,410</u>

See accompanying Independent Auditor's Report on Federal Awards.

Accumulated Revenue at Jan. 1, 1994 Federal Share	Current Federal Revenue Received	Accumulated Disbursements/ Expenditures at Jan. 1, 1994 Federal Share	Current Disbursements/ Expenditures Federal Share
	83,439		89,379
<u> </u>	<u>79,670</u>	<u> </u>	<u>90,209</u>
<u>98,476</u>	<u>163,109</u>	<u> </u>	<u>179,588</u>
270,155		268,912	1,243
175,529	6,418	175,529	6,418
<u> </u>	<u>162,057</u>	<u> </u>	<u>176,474</u>
<u>445,684</u>	<u>168,475</u>	<u>444,441</u>	<u>184,135</u>
<u>544,160</u>	<u>348,744</u>	<u>538,287</u>	<u>368,980</u>
16,340	12,500	21,112	16,141
	12,500		4,392
47,000		57,624	
<u> </u>	<u>12,000</u>	<u>3,310</u>	<u>3,119</u>
<u>63,340</u>	<u>37,000</u>	<u>82,046</u>	<u>8,661</u>
			<u>32,313</u>

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

ACCOUNTANTS & AUDITORS
POST OFFICE BOX 6247
D'IBERVILLE, MS 39532

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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 1994 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.

Fountain, Seymour, Mosher & Assoc.

D'Iberville, Mississippi
May 12, 1995

GULF STATES MARINE FISHERIES COMMISSION
SCHEDULE OF REVENUE AND EXPENSES - RESTRICTED FUNDS
For The Year Ended December 31, 1994

	Council Funds			Fish & Wildlife Services	
	Fy 94	Fy 95	DNA	Fy 94	Fy 95
REVENUES					
Grants & Agreements	<u>12,500</u>	<u>12,500</u>	<u>15,000</u>	<u>12,000</u>	<u>0</u>
Total Revenue	12,500	12,500	15,000	12,000	0
EXPENSES					
Salaries	11,078	3,195	0	3,036	979
Payroll Taxes	847	244	0	232	75
Health Insurance	1,793	354	0	497	159
Retirement	991	235	0	245	79
Office Rent	860	263	0	3,668	1,636
Equipment Rental	5	2	0	8	0
Office Supplies	57	8	0	318	4
Postage	6	0	0	3	0
Travel - Committee	0	0	0	0	0
Telephone	208	33	0	151	27
Copy Expense	197	4	0	366	134
Printing	0	0	0	0	0
Meeting Costs	0	0	0	0	0
Subscriptions & Dues	10	0	0	9	0
Auto Expense	0	0	0	1	0
Maintenance	0	0	0	80	0
Professional Services	0	54	0	0	26
Other Taxes	89	0	0	20	0
Contractual	0	0	13,320	0	0
Insurance	<u>0</u>	<u>0</u>	<u>0</u>	<u>27</u>	<u>0</u>
TOTAL EXPENSES	<u>16,141</u>	<u>4,392</u>	<u>13,320</u>	<u>8,661</u>	<u>3,119</u>
Excess of Revenue over Expenses	(3,641)	8,108	1,680	3,339	(3,119)
Fund Balance, Jan. 1, 1994	3,916	0	3,522	(3,310)	0
Transfers In (Out)	(275)	<u>0</u>	<u>0</u>	(29)	<u>0</u>
Fund Balance, Dec. 31, 1994	<u>0</u>	<u>8,108</u>	<u>5,202</u>	<u>0</u>	<u>(3,119)</u>

See accompanying Independent Auditor's Report on Additional Statements

Inter Juris- dictional	SEAMAP Funds	Sportfish Restoration			Total All Funds
		FY 92	FY 93	FY 94	
<u>79,670</u>	<u>83,439</u>	<u>0</u>	<u>6,418</u>	<u>162,057</u>	<u>383,584</u>
79,670	83,439	0	6,418	162,057	383,584
52,922	43,930	0	0	66,912	182,052
4,049	3,361	0	0	5,119	13,927
8,360	7,082	0	0	10,633	28,878
4,182	3,586	0	0	5,360	14,678
4,086	3,401	0	0	5,159	19,073
108	110	0	0	232	465
1,790	2,095	0	0	2,471	6,743
2,461	3,389	0	0	2,663	8,522
3,948	12,718	0	0	31,330	47,996
2,412	2,341	0	0	4,097	9,269
887	1,238	0	0	1,248	4,074
446	946	1,243	0	655	3,290
1,859	2,407	0	0	2,308	6,574
92	284	0	0	634	1,029
169	52	0	0	164	386
830	842	0	0	1,776	3,528
799	810	0	0	1,710	3,399
257	231	0	0	332	929
0	0	0	6,418	32,094	51,832
<u>552</u>	<u>556</u>	<u>0</u>	<u>0</u>	<u>1,577</u>	<u>2,712</u>
<u>90,209</u>	<u>89,379</u>	<u>1,243</u>	<u>6,418</u>	<u>176,474</u>	<u>409,356</u>
(10,539)	(5,940)	(1,243)	0	(14,417)	(25,772)
0	0	1,243	(7,386)	0	(2,015)
<u>0</u>	<u>0</u>	<u>0</u>	<u>7,386</u>	<u>0</u>	<u>7,082</u>
<u>(10,539)</u>	<u>(5,940)</u>	<u>0</u>	<u>0</u>	<u>(14,417)</u>	<u>(20,705)</u>

AUDITOR'S REPORTS ON INTERNAL CONTROLS

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

ACCOUNTANTS & AUDITORS
POST OFFICE BOX 6247
D'IBERVILLE, MS 39532

(601) 392-2675

J.E. Fountain, Jr., E.A., A.T.A.
National Association of Enrolled Agents
Mississippi Association of Enrolled Agents

R.F. Mosher, C.P.A.
American Institute of C.P.A.'s
Mississippi Society of C.P.A.'s

A.J. Ivey, E.A.
National Association of Enrolled Agents
Mississippi Association of Enrolled Agents

R.P. Seymour, P.A.
National Society of Public Accountants
Mississippi Society of Public Accountants

**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, 1994, and have issued our report thereon dated May 12, 1995. 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, 1994, 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, 1994, Gulf States Marine Fisheries Commission expended 91 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.

Fountain, Lyman, Mosler, & Assoc.

D'Iberville, Mississippi
May 12, 1995

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

ACCOUNTANTS & AUDITORS
POST OFFICE BOX 6247
D'IBERVILLE, MS 39532

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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, 1994, and have issued our report thereon dated May 12, 1995.

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, 1994, 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.

Fountain, Lyman, Mosher, & Assoc.

D'Iberville, Mississippi
May 12, 1995

AUDITOR'S REPORTS ON COMPLIANCE

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

ACCOUNTANTS & AUDITORS
POST OFFICE BOX 6247
D'IBERVILLE, MS 39532

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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, 1994, and have issued our report thereon dated May 12, 1995.

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.

Fountain, Lyman, Mosher, & Assoc.

D'Iberville, Mississippi
May 12, 1995

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

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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, 1994. 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, 1994.

In connection with our audit of the December 31, 1994 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, 1994.

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.

This report is intended for the information of the Board of Commissioners of Gulf State Marine Fisheries Commission, 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.

Fountain, Johnson, Mosley & Assoc.

D'Iberville, Mississippi
May 12, 1995