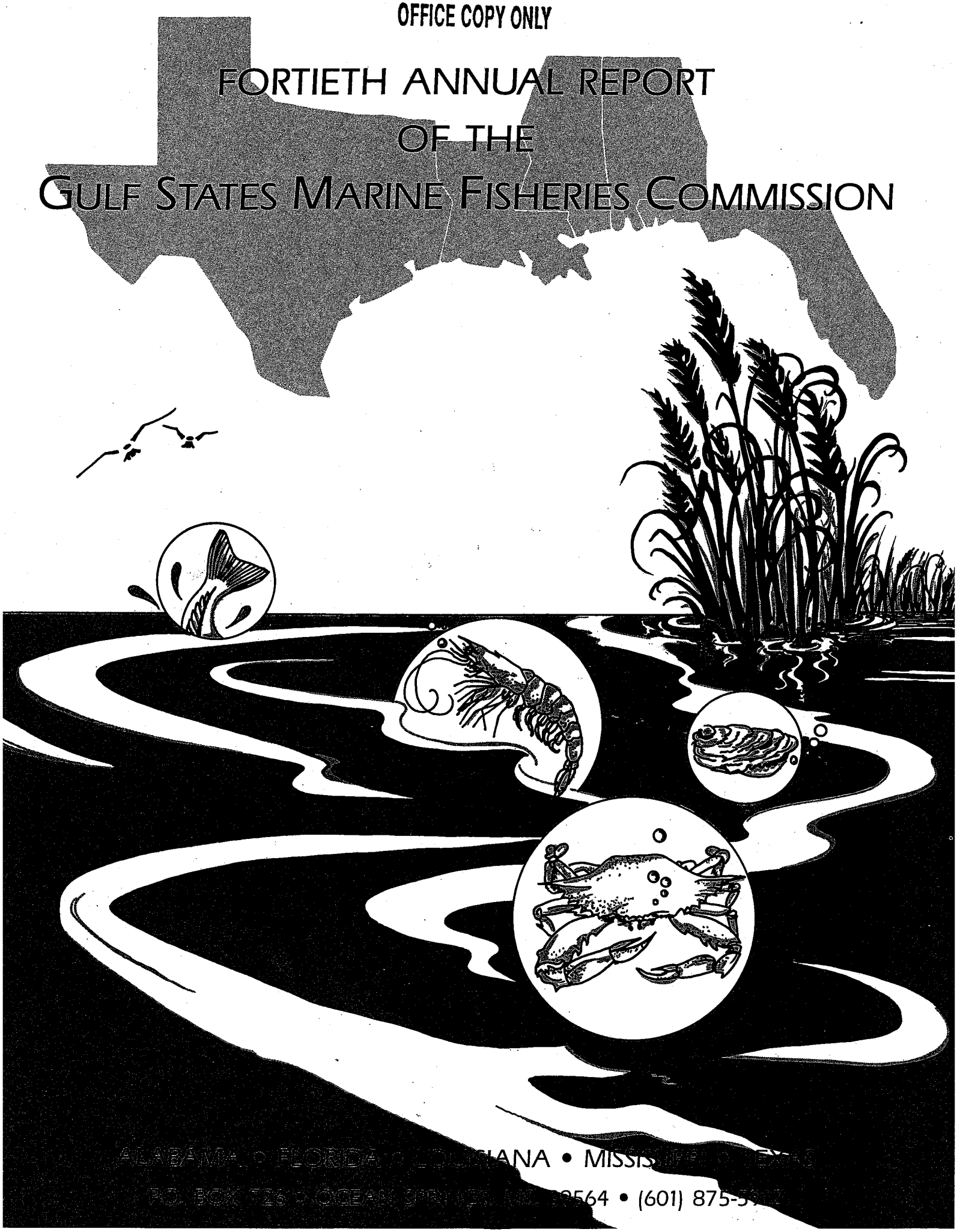
FORTIETH ANNUAL REPORT OF THE GULF STATES MARINE FISHERIES COMMISSION



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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. It has as its principal objective 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

FORTIETH ANNUAL REPORT (1988-1989)

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 the 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 39564

(601) 875-5912

ACKNOWLEDGMENT

In submitting this Fortieth 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 years could not have been possible without such valued assistance. This acknowledgment is also extended to the directorates 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,

Charles E. Belaire, Chairman
Tommy Gollott, Vice Chairman
Larry B. Simpson, Executive Director

Published September 1990

GULF STATES MARINE FISHERIES COMMISSION

Fortieth Annual Report (1988-1989)

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Roster of the

GULF STATES MARINE FISHERIES COMMISSION

October 1, 1988 - September 30, 1989

Chairman: Charles E. Belaire Vice Chairman: Tommy Gollott

COMMISSIONERS

(order of listing - Administrator, Legislator, Governor's appointee)

ALABAMA

James C. Martin, Commissioner
Alabama Department of Conservation
and Natural Resources
Montgomery, AL

Taylor F. Harper, Representative
State of Alabama
Grand Bay, AL

John Ray Nelson
Bon Secour Fisheries, Inc.
Bon Secour, AL

FLORIDA

Tom Gardner
Executive Director
Florida Department of Natural
Resources
Tallahassee, FL

Sam Mitchell, Representative
State of Florida
Chipley, FL

H. Gilmer Nix
Tampa, FL

LOUISIANA

Virginia Van Sickle
Executive Secretary
Louisiana Department of
Wildlife and Fisheries
Baton Rouge, LA

Frank J. Patti, Representative
State of Louisiana
Belle Chasse, LA

Leroy Kiffe
Tom Kiffe & Sons Boats
Lockport, LA

MISSISSIPPI

Vernon Bevill
Executive Director
Mississippi Department of
Wildlife Conservation
Jackson, MS

Tommy Gollott, Senator
State of Mississippi
Pascagoula, MS

Rudy Lesso
Biloxi, MS

TEXAS

Charles D. Travis
Executive Director
Texas Parks and Wildlife
Austin, TX

H. Tati Santiesteban, Senator
State of Texas
El Paso, Texas

Charles E. Belaire
Fulton, TX

STAFF

Larry B. Simpson
Executive Director

Virginia K. Herring
Executive Assistant

Thomas M. Van Devender
SEAMAP Coordinator

Ron R. Lukens
D-J W-B Program Coordinator

Stephen Meyers
IF Program Coordinator

Lucia B. Hourihan
Publication Specialist

Eileen M. Benton
Administrative Assistant

Nancy K. Marcellus
MARFIN Secretary

Cynthia B. Dickens
IF Staff Assistant

COMMISSION OFFICERS ELECTED FOR FISCAL YEAR 1988-1989

Chairman. Charles E. Belaire succeeding Taylor F. Harper

Vice Chairman: Tommy Gollott succeeding Charles E. Belaire

COMMITTEES

Executive Committee . . . . . Charles E. Belaire, Chairman

Technical Coordinating Committee. . . . . J.Y. Christmas, Chairman

- SEAMAP Subcommittee. . . . . Walter Tatum, Chairman
- Crab Subcommittee. . . . . Phil Steele, Chairman
- Data Management Subcommittee . . . . Henry "Skip" Lazauski, Chairman
- Anadromous Fish Subcommittee . . . . . Vernon Minton, Chairman
- Spanish Mackerel Subcommittee. . . . . Roy Williams, Chairman

Industry Advisory Committee . . . . . .John Ray Nelson, Chairman

Recreational Fisheries Committee. . . . . Bruce Cartwright, Chairman

Law Enforcement Committee . . . . . Jerald Waller, Chairman

Gulf State-Federal Fisheries Management Board . . . . . I.B. "Buck" Byrd, Chairman

- Menhaden Advisory Committee. . . . . John Merriner, Chairman

GULF STATES MARINE FISHERIES COMMISSION ACTIVITIES

October 1, 1988 - September 30, 1989

On May 19, 1989 the Gulf States Marine Fisheries Commission was 40 years old. The original compact legislation was signed aboard the Alabama state yacht in Mobile Harbor on that date. Over the period since its creation the Commission has seen great changes in the marine resources of the Gulf of Mexico and the methods by which the states address those changes.

Providing the mechanism whereby the five Gulf States come together to coordinate their research, policy and programs in an effective interstate fashion has been a rewarding experience. A multitude of people are responsible for the utility of the Commission in this arena. The past Executive Directors, encouraged by a spirit of concern for marine resources, were successful in establishing programs which are utilized daily by the Gulf community. Dudley Gunn, Executive Director from 1949 to 1966, was instrumental in establishment of the Pascagoula, Mississippi research station of what is now the National Marine Fisheries Service. This station utilizing the RV OREGON conducted exploratory cruises which identified yellowfin tuna and billfish resources as well as new shrimping grounds that are today highly prized recreational and commercial fisheries.

Joe Colson, Executive Director from 1966 to 1976, was helpful in securing passage of the Eastland Resolution which heightened awareness of our region's marine problems and issues to the U.S. Congress. During this same time frame P.L. 88-309, Commercial Fisheries Research and Development Act, was passed which enabled the states to provide personnel and programmatic activities toward marine problems. From that program we have the basis for the majority of current marine work in the Gulf of Mexico.

Charles H. Lyles, Executive Director from 1977 to 1983, and Commissioner Leroy "Tom" Kiffe were critical in the passage of the Outer Continental Shelf Lands Act Title IV of 1978 (Fishermen's Contingency Fund). This program compensates fishermen for loss of gear as a result of offshore and gas production. Mr. Lyles along with Dr. Ted B. Ford of Louisiana, Chairman of the Technical Coordinating Committee, were able to organize and secure funding for the Southeast Area Monitoring and Assessment Program (SEAMAP). This highly successful program utilizes the various state and federal sampling platforms to obtain biological and environmental data in a synoptic fashion on Gulf of Mexico marine resources.

In 1983 I became Executive Director of the Commission. While serving in this capacity the cooperative spirit of the states and their personnel have enabled three viably important programs to be added to the Commission's dimension. The Wallop/Breaux Amendments to the Dingell/Johnson Act, the Interjurisdictional Fisheries Act and the Marine Fisheries Initiative (MARFIN). The Wallop/Breaux Program of the Commission has enabled us to coordinate programmatic activities with regard to recreational fishes. Three main areas of emphasis are in data collection and management; anadromous fish, specifically striped bass; and coordinated recreational projects among the Gulf States such as artificial reefs, constituency awareness, marine licensing, etc. The Interjurisdictional Fisheries Act enables the Gulf of Mexico states to do research and management planning in a coordinated manner on those marine resources under their authority and responsibility. Resources such as blue crabs, menhaden, oysters, and black drum should be addressed in the main by the states rather than extensive involvement by the Federal Government with respect to management policy. The MARFIN Program sponsored by Senator Lott (MS) and Senator Breaux (LA) has been responsible for states, universities, sea grant, NMFS and others completing

over 125 critical research efforts. These efforts have directly led to increased and higher use of existing fully exploited and underdeveloped fisheries. The result has been more effective use of our living marine resources.

In presenting this 40th Annual Report it is my hope that the next 40 years of the Gulf States Marine Fisheries Commission will be utilized by the Gulf of Mexico marine community with the same vitality and positive accomplishments that the previous years contained.

Larry B. Simpson

MEETINGS/ACTIVITIES OF THE EXECUTIVE DIRECTOR

Gulf States Marine Fisheries Commission (GSMFC)

39th Annual Fall Meeting, San Antonio, Texas - October 1988
Marine Fisheries Advisory Committee (MAFAC) DOC, Washington, DC - October 1988
Meeting with Vice Chairman Senator T. Gollott re: office space, Biloxi, Mississippi - October 1988
IBM Computer Seminar, Mobile, Alabama - November 1988
Meeting with Contractor and Auditor re: computerized accounting program, Ocean Springs, Mississippi - November 1988
IJF Oyster Technical Task Force, Biloxi, Mississippi - December 1988
IJF Fishery Management Committee, New Orleans, Louisiana - January 1989
SEAMAP Gulf and South Atlantic Joint Meeting, New Orleans, Louisiana - January 1989
Marine Fisheries Advisory Committee (MAFAC) DOC, Washington, DC - January 1989
Meeting with FWS Grants re: Commission Wallop/Breaux Project, Washington, DC - February 1989
39th Annual Spring Meeting, New Orleans, Louisiana - March 1989
Meeting with Commissioner Nelson, Bon Secour, Alabama - April 1989
Marine Fisheries Advisory Committee (MAFAC) DOC, Monterey, California - May 1989
Meeting with Contractor re: computerized accounting program, Ocean Springs, Mississippi - June 1989
Meeting with Contractor re: computerized accounting program, Ocean Springs, Mississippi - June 1989

Marine Fisheries Initiative (MARFIN) Program Management Board (PMB)

December 1989	Conference Call
February 1989	Mobile, Alabama
September 1989	New Orleans, Louisiana (following Principal Investigators Conference)

Gulf of Mexico Fishery Management Council (GMFMC)

January 1989	San Antonio, Texas	
March 1989	Miami, Florida	
April 1989	Biloxi, Mississippi	Reef Fish Public Hearing
April 1989	Tampa, Florida	
July 1989	Key West, Florida	
September 1989	New Orleans, Louisiana	

Other Meetings and Activities

NFI Industry Meeting, Washington, DC - January 1989
Menhaden Industry Meeting and LDWF, Baton Rouge, Louisiana - February 1989
Louisiana Department of Wildlife and Fisheries Commission Meeting, Baton Rouge, Louisiana - March 1989
Ribbon Cutting for new Bureau of Marine Resources Office, Biloxi, Mississippi - March 1989
Texas Shrimp Association Annual Convention, Austin, Texas - March 1989
Louisiana Department of Wildlife and Fisheries Commission re: setting of shrimp season, New Orleans, Louisiana - May 1989
International Association of Fish and Wildlife Agencies, Pierre, South Dakota - September 1989

Congressional Meetings

Testimony before House Appropriations Subcommittee re: gulf fisheries programs, Washington, DC - April 1989

Larry B. Simpson

WALLOP-BREAUX ADMINISTRATIVE PROGRAM

The 1989 project year marked the end of our first three-year program to address important recreational fisheries issues through the Wallop-Breaux Administrative Fund administered by the U.S. Fish and Wildlife Service. The year culminated in the completion of several activities of importance to interstate fishery management in the Gulf of Mexico region.

Recreational Fisheries Management Activities

Marine recreational fishing licensing in the states was identified as an important issue. The Recreational Fisheries Committee sponsored a symposium during which each Gulf State presented information regarding licensing of marine recreational fishermen in their state. A representative of the Federal Aid office of the U.S. Fish and Wildlife Service in Washington, DC, provided information on licensing from the Federal Aid perspective. A proceedings of that symposium was subsequently published and is now available from the Gulf States Marine Fisheries Commission.

Another initiative pursued by the Recreational Fisheries Committee was a questionnaire survey of fishing tournament directors, fishing and environmental clubs, and outdoor media persons in each state to determine their awareness and understanding of the National Recreational Fisheries Policy which enjoyed wide acceptance and ratification during National Fishing Week in June of 1988. Other topics covered in that survey were understanding and awareness of the Gulf of Mexico Fishery Management Council, the Gulf States Marine Fisheries Commission and state marine research programs. That project was completed and the report is available from the Commission office.

Striped Bass Restoration and Management Activities

During 1989, the Anadromous Fish Subcommittee began working on a report that profiles sampling and monitoring programs in each state for eggs, larvae and juveniles of striped bass. That report is completed and available upon request. It will also serve as the basis for a future project to develop a set of standardized guidelines for sampling and monitoring of all life stages of striped bass.

Future plans for striped bass activities include the development of Amendment I to the GSMFC Striped Bass Fishery Management Plan. Discussions in preparation for that project include size and bag limits and a gulf-wide creel survey. The Anadromous Fish Subcommittee is also making preparations for the development of a fishery management plan for Gulf of Mexico sturgeon.

Recreational Fisheries Data Activities

During 1988, the Data Management Subcommittee began an initiative to analyze existing state and federal marine recreational data collection programs currently ongoing in the Gulf of Mexico region. The goal of the effort is to compile a series of recommendations that will provide for a survey which will produce data sufficient for management of recreational fisheries at a state, regional and national level. In February 1989, the subcommittee sponsored a workshop to review

state and federal programs. A proceedings of that workshop is available upon request. Future efforts include an analysis of charterboat/headboat data collection programs.

Ronald R. Lukens
Program Coordinator

INTERJURISDICTIONAL FISHERIES PROGRAM

During 1989, the Gulf States Marine Fisheries Commission (GSMFC) was actively involved in the development of fishery management plans (FMPs) for interjurisdictional fish stocks. These efforts were primarily supported by funding from the National Marine Fisheries Service (NMFS) as authorized by the Interjurisdictional Fisheries Act of 1986 (Public Law 99-659).

Under this program, each of the five Gulf States participates in a process to identify fisheries in need of cooperative state management and to develop regional FMPs for those fisheries. Federal agency personnel, academic experts, law enforcement professionals and industry representatives are actively involved in the planning efforts. They, along with state representatives, make up technical task forces (TTFs) specific for each FMP. These TTFs are responsible for the initial formulation of the FMPs.

During 1989, the GSMFC through its respective TTFs continued work on FMPs for blue crab (Callinectes sapidus) and Eastern oyster (Crassostrea virginica). Also, black drum (Pogonias cromis) was prioritized as the next FMP to be developed. The following is a discussion of the activities and accomplishments of the IJF Program efforts for each of these FMPs:

Blue Crab

Initially, it was anticipated that the blue crab FMP would be completed during the year. A meeting of the Blue Crab TTF was held March 27-28, 1989, in Mobile, Alabama, to discuss management scenarios, the concept of maximum sustainable yield (MSY) and other incomplete tasks. Substantial progress was made at this meeting, and a complete draft of the FMP was developed in June 1989. The plan appeared to be developing as scheduled with only minor changes needed prior to submission to the GSMFC Technical Coordinating Committee (TCC), the next step in the FMP development and approval process.

Delays were later encountered as a result of the complexity of the fishery and the desire of the TTF to accurately assess its condition and management needs.

The plan was presented to the TCC Blue Crab Subcommittee on October 17, 1989, and the full TCC was briefed on October 18, 1989. Comments were received from the TCC, additional comments from the TTF and the resignation of the IJF Program Coordinator forced further delays, but the plan was expected to be complete in early 1990.

Oyster

The oyster fishery in the Gulf of Mexico is probably one of the oldest and most complicated fisheries in the United States. Because of the obvious differences between this and other fisheries and additional considerations for this plan, it was a monumental effort to get the plan organized and to start writing. The plan was initiated in October 1988. The Oyster TTF met on March 13, 1989, to discuss section drafts, to further review state programs and to discuss completion of other sections. The TTF optimistically anticipated that a complete draft would be available by December 1989, and struggled with the development and review of plan sections throughout most of the year.

The TTF met again on October 10-11, 1989. At this meeting specific needs and deficiencies were identified. Also a revised time table for completion of draft sections was established with June 1990 being the target date for a completed draft of the plan.

Black Drum

Black drum was the next fishery which was prioritized for FMP development by the GSMFC. The Gulf of Mexico Fishery Management Council recommended that the GSMFC produce a regional FMP for black drum under the IJF Program. This decision was made because the predominance of harvest of black drum occurs in the states' jurisdictional waters.

Consequently, a TTF was formed at the end of the year, and an organizational meeting was tentatively scheduled for early 1990.

Richard L. Leard
Program Coordinator

ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

MARINE RESOURCES DIVISION

The Marine Resources Division is responsible for management of Alabama's marine fisheries resources through research and enforcement programs. Three Division facilities supported 43 employees of the Administrative, Enforcement and Fisheries Sections during Fiscal Year 1989. A total expenditure of $2,091,183 was made from the approved budget of $2,112,256. Revenue of $2,070,725 was made from federal aid (45%), license fees (41%), marine gas tax (10%) and other sources (4%).

ADMINISTRATIVE SECTION

The Administrative Section provides supervision, clerical, purchasing and general administrative support for the two operational sections; supervises state seismic activities and coordinates with state, federal and regional agencies on fisheries and environmental matters. The Administrative Section consisted of the Division Director, six clerical, one custodial and one mechanical employee. Offices are maintained at Dauphin Island, Gulf Shores, Bayou La Batre and Montgomery. Administrative Section expenditures were $721,593 on salaries and operational expenses for division activities, some of which was reimbursed under federal aid to fisheries programs.

Long-overdue seafood license increases passed during 1988 resulted in an increase of $211,716 during FY89. Contracts totaling $50,000 were let to plant oyster shells on public reefs in efforts to rebuild oyster reefs destroyed by three years of record drought. A bid was let to renovate the roof of the Dauphin Island office which frequently leaked during heavy rains. The 12,000-square-foot roof was not originally designed to drain properly. A 100% federal grant project was approved to provide $25,000 to the Enforcement Section. Three training sessions were attended by clerical personnel. Four computerized IBM typing systems were purchased, allowing more effective clerical work. A $300,000 federal grant application was submitted for oyster reef improvements during FY90.

Future plans include slight revisions to legislation passed during 1989 and reintroduction of bills to provide for data collection, penalties for shrimping violations and revision of the bait shrimp law.

ENFORCEMENT SECTION

The Enforcement Section patrols Alabama's coastal waters, enforcing both state and federal rules on conservation and protection of marine resources. Officers also enforce rules pertaining to boating safety, freshwater fishing and hunting; conduct search and rescue missions and drug interdiction operations. Facilities and personnel include headquarters at Dauphin Island and district offices in Bayou La Batre and Gulf Shores. At the beginning of FY89 the Section consisted of 12 enforcement officers. Two additional enforcement officers were hired in January of 1989.

Expenditures during the year totaled $546,590, of which $19,000 was reimbursed by an ADEM contract. Other expenses for shared services and material such as utilities and gasoline were paid by the Administrative Section.

Enforcement officers conducted 22,751 hours of boat and shore patrol, checked 10,195 boats, made 1,144 inspections of seafood shops, and issued 431 citations for illegal activities. Violation of rules concerning finfish made up 30% of the citations, followed by shrimp (19%), oyster (16%) and other (35%, which includes boating safety, hunting and beach/dune protection violations).

Two officers attended the U.S. Customs drug enforcement school and were designated special custom agents authorized to assist in coastal drug interdiction. Officers attended schools and courses on the federal marine law enforcement training program, firearms instruction, boating safety and other state agency law enforcement programs.

The most significant problem is the lack of sufficient personnel to adequately monitor commercial and recreational fishing activities. One officer will be hired during FY90 to replace an officer transferred to Game & Fish Division. Hiring an additional officer was also planned for FY90, but lack of funds will cause this to be delayed. Future plans include formulating training programs to upgrade performance, maintain adequate equipment and personnel, and effectively conduct operations.

FISHERIES SECTION

The Fisheries Section conducts applied research on marine fisheries stocks in Alabama and offshore federal waters. Data are compiled by field collections of species throughout Alabama waters, cooperative state/federal cruises in Gulf waters, interviews with recreational fishermen and seafood dealers, tag and release of hatchery-reared fish and fish caught by Fisheries Section personnel, and through contractual agreements with universities and other agencies. The section also manages the oyster and shrimp fisheries, offshore fishing reef program and boat ramp construction. Until October of 1989, the section managed the Weeks Bay National Estuarine Research Reserve. The section reviews applications for construction in the coastal zone to protect the environment and participates in educational programs to provide information on marine resources to groups and individuals. Sectional personnel coordinate with other fishery-agency personnel throughout the Gulf of Mexico region by participating as committee members on the Gulf States Marine Fisheries Commission and Gulf of Mexico Fisheries Management Council.

Facilities consisted of the Claude Peteet Mariculture Center at Gulf Shores and the Marine Resources Laboratory at Dauphin Island. Personnel included one Biologist V, two Biologists IV, one Biologist III, two Biologists II, three Biologist Aides III, two Biologist Aides II, three Biologist Aides I, one Lab Technician, one Data Entry Clerk Typist II, four laborers, and an Estuarine Reserve Manager. Expenditures totaled $823,000, consisting almost entirely of federal aid funds from nine federal programs. State funds for required match varied from zero to 45% of the program costs.

Supervision was provided in maintenance of Division structures in Mobile and Baldwin Counties. Maintenance was required at Dauphin Island headquarters, Claude Peteet Mariculture Center in Gulf Shores, public boat launching facilities at six locations in Mobile and Baldwin Counties, and a nature trail and kiosk at Weeks Bay National Estuarine Research Reserve. The extension of a general permit area in the Gulf of Mexico off Baldwin County was secured, allowing the Division to issue permits for artificial reef construction in the area out to the 100 fathom curve.

The Fisheries Section investigated fish kills and provided written comments on U.S. Army Corps of Engineers Section 10 and 404 construction permits in the coastal area. Monitoring and assessment activities were accomplished through all or part of three federal aid programs during 1988-89.

The SEAMAP program (Southeast Area Monitoring and Assessment Program) is a state/federal cooperative program providing 100% federal funds. These funds are used to monitor shrimp, fish and crabs in the Alabama estuarine area and to participate in regional synoptic sampling for shrimp, groundfish, plankton and hydrological conditions in the Gulf of Mexico in conjunction with the other four Gulf States and the National Marine Fisheries Service. The Interjurisdictional Fisheries Act (IJFA) funds activities on fish and shellfish resources which migrate between two or more fishery management jurisdictions during their life cycle. Alabama's IJFA project consisted of taking biological data from recreationally caught finfish in Alabama estuarine and territorial waters.

The MARFIN (Marine Fisheries Initiative) project provides funds to assess sexually-immature red drum stock in Alabama's estuarine and territorial waters. Biological staff conduct creel surveys during the red drum fishing period, take biological data, and fish for red drum to tag and release.

Alabama's Cooperative State/Federal Statistical Program funds the Division's commercial fishery data collection and management activities. Two state port agents, one data entry specialist and one data manager comprise the Data Management Unit. Port agents in Mobile and Baldwin Counties routinely visit seafood dealer/processors in the respective counties and gather seafood landing statistics. Landings data are forwarded to the data manager in Gulf Shores, where they are tabulated and entered into an "Alabama Landings" data file for storage and manipulation. Port samplers additionally collect biological data from fishery stocks of concern from a regional or local perspective.

Species of fish raised, tagged, and released into Alabama waters under three federal aid programs (MARFIN, Wallop-Breaux, Anadromous Fish) are spotted seatrout, striped bass, and red drum. Previous hatchery rearing and tag and release projects with all three species have dramatically demonstrated that a minimum tag and release size of 40 to 60 grams (6 to 8 inches) is required to optimize survival of released fish and subsequent angler catch and tag return. All fish released from Claude Peteet Mariculture Center are tagged prior to release. During the past year, all fish were 6 to 8 inches at release. The recent emphasis on minimum size at release has resulted in prolonged culture periods with accompanying increased mortality for fish in culture, but has resulted in tremendous increase in angler tag returns. The Division's anadromous fish project formerly concentrated on raising and stocking tagged 6 to 8-inch striped bass fingerlings. During 1988-89, strong emphasis was placed on monitoring and assessment of striped bass populations in Alabama with particular emphasis on documenting spawning success of previously stocked stripers. Ichthyoplankton sampling in April of 1989 in Claiborne Lock and Dam reservoir produced striped bass larvae and eggs, thereby verifying spawning success in the Alabama River at least during the spring of 1989.

The MARFIN mullet study was initiated to gather biological and socioeconomic data from both the traditional mullet fishery and the recently established roe-mullet fishery. Data collection and analysis have demonstrated the age frequency of mullet harvested from the traditional fishery (primarily 2+ age class), the roe-mullet fishery (primarily 4+ and 5+ age classes) and the purse-seine fishery (primarily 2+ and 3+ age classes). Since sexual maturity is not reached until mullet attain the 2+ age group, it is obvious that the roe-mullet fishery is targeting older fish that have spawned two to three seasons prior to being caught. Socioeconomic data acquired during 1988 on the states of origin for mullet entering Alabama's roe-mullet processing industry varied from the data taken in 1989. In 1988, the data showed Louisiana contributed 44%, Alabama 31%, Florida 23% and Mississippi 2%. Data in 1989 showed Louisiana 25.5%, Mississippi 3.1%, Alabama 36.3% and Florida 35.1%.

The Weeks Bay National Estuarine Research Reserve (WBNERR) was managed by the Division under contract from ADECA, the Coastal Zone Management agency in Alabama. A nature trail was maintained by Division staff on the Damson Tract of WBNERR with a raised observatory and elevated catwalk over a fringe marsh habitat along the western shore of Weeks Bay. A kiosk was constructed containing brochures for self-guided nature trail walks and a general history of the reserve. A Reserve Manager was hired and numerous activities conducted during the past year. In October of 1989, the Division transferred all WBNERR activities and permanent staff to ADECA.

Coordination of all sportfish restoration projects was accomplished with Dingell-Johnson/Wallop-Breaux funds. The coordination project provides funds for continuing education courses for biological personnel, staff meetings to keep biological personnel informed on local and regional marine sportfish activities, and a focal point to insure programs operate within limitations provided by federal law. Fisheries personnel investigated construction permit requests for Section 10 and Section 404 permits in the coastal area. If the permit application would result in environmental degradation, biological personnel suggested alternatives to minimize problems. If there were no alternatives, the Division would request a U.S. Army Corps of Engineers denial of the activity.

Fisheries personnel worked with State Park personnel in conducting presentations to Elderhostel groups at Gulf State Park. One fish kill was investigated in Baldwin County. The kill was identified as associated with discard from a shrimping vessel.

Biological staff worked with the State Highway Department and the Gulf Coast Conservation Association to enhance Alabama's artificial reef program.

The Division worked out an agreement with the State Highway Department to use the old Perdido Pass Bridge as artificial reef material. Division personnel marked disposal sites, accompanied each barge load of material and cross-checked each dump site with Loran coordinates. Eleven separate sites were created from the old bridge with a total of 27 barge loads.

The Division worked with the Gulf Coast Conservation Association (GCCA) in securing 16 boxcars from CSX and Burlington Northern railways for artificial reef material. GCCA made arrangements for the boxcars to be given to the state, and MRD secured the permit and paid a contractor to remove the wheels from the boxcars, and transport and sink them in designated area. The first reef was named the "Guy Hunt Reef." Division personnel accompanied each load of boxcars to their final resting places.

The problems with maintaining expenditures for salaries, material, supplies and other charges to nine federal aid projects have increased significantly over the years as additional programs are obtained to fund fisheries management activities. Software was developed by the Data Management Unit to allow closer in-house accounting on these expenditures.

The chief biologist had to serve as reserve manager of the Weeks Bay Estuarine Research Reserve, diverting much of his time away from fisheries duties. An Estuarine Reserve Manager position was created by the State Personnel Department and the position was filled during FY89. The entire Weeks Bay Program and the Reserve Manager have now been transferred to ADECA.

Access by several seafood dealers was terminated due to their objections to state or federal rules on fishing, resulting in loss of fisheries catch and landings data used to manage Gulf fisheries stocks. This reluctance to allow fisheries personnel access to data continued during 1989 because we were unsuccessful in passing legislation granting us such authority. Legislation has been prepared for introduction during the 1990 legislative session.

Future plans include construction of a boat slip and water intake pipe protection at the Gulf Shores hatchery to protect the intake, which has been destroyed many times by barge traffic. Plans also involve continuation of data collection needed to manage Alabama's marine fisheries resources.

FLORIDA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF MARINE RESOURCES

FLORIDA MARINE RESEARCH INSTITUTE

FINFISH

A study of tarpon continues, investigating age, growth, reproduction and stock structure of Florida tarpons. Data from nearly 200 adult tarpon and 300 juvenile tarpon have been collected. More than 250 tarpon larvae were collected from the Gulf of Mexico and included one of the smallest larvae yet described. More than 100 larval tarpon otoliths have been analyzed to determine larvae growth rates. Experiments to validate daily growth increments and annuli using OTC-marked otoliths continue.

From 1986 through 1989, 1,870 snook were examined for age, growth and reproductive data. Preliminary analyses indicate a life span of about 16 to 18 years, with females reaching larger sizes and older ages than males. Maturity appears to occur in the second or third year for males and during the fourth or fifth year for females, although this species is a protandric hermaphrodite and inversion dictates the final age and size at maturity. Total annual mortality of snook, as determined by catch curve analysis, indicates a 46% to 76% rate between the ages of V and VII.

A Memoirs of the Hourglass manuscript on sea bass (Serranidae) is expected to be printed in 1990. It includes keys, color plates and life history information for all serranids known to occur in the eastern Gulf of Mexico. A recent program was developed to test the feasibility of using mark-recapture methods to estimate abundance of post-exploited phase red drum. In a six square mile area in Boca Ciega Bay, the estimated abundance of fish larger than 27 inches TL was 4,647 in 1988, and 4,126 fish were estimated in 1989. Most of the fish were age III, with some as old as age IV or V.

Work continues on a wide variety of other species, including, but not limited to spotted seatrout, black mullet and king mackerel. Manuscripts on sea bass (1966 to 1974 data base), king mackerel (1975 to 1979 data base) and gag grouper (1978 to 1981 data base) are completed and in review.

Florida's continuing participation in the Southeast Area Monitoring and Assessment Program (SEAMAP) in 1989 included:

1. Planning and execution of two plankton collection cruises in May and September, which comprised a total of 65 stations occupied over the West Florida Shelf. Sampling included measurements of chlorophyll concentrations, larval fish abundance as sampled by neuston and bongo nets and hydrographic information.

2. Curation and maintenance of the SEAMAP Archiving Center. Current holdings include approximately 52,000 lots of larval fishes collected from throughout the Gulf of Mexico since 1982. More recent collections are currently being incorporated into the collection.

Work continues on a wide variety of other species, including but not limited to red drum, spotted seatrout, black mullet and king mackerel.

INVERTEBRATES

Hard clam research to determine patterns of recruitment in the northern Indian River lagoon continues. Plans to expand field sampling to determine distribution and growth patterns and aquaculture potential in the southern Indian River lagoon were initiated. One manuscript is in press, one in review, and three manuscripts are in preparation. Other data will be analyzed and reports published as data warrant.

Proceedings of a symposium on stone crab biology and management are in preparation. Studies on the genetics, physiology and ecology of hybrids in the northern Florida hybrid zone are in progress. Field studies to determine population structure and collect material for genetic studies began in Tampa Bay. Laboratory studies of reproductive success and larval physiological response to variations of salinity, temperature and time continue. Reports will be published as data indicate.

Data analyses of blue crab population characteristics in Tampa Bay, Florida, accumulated in previous sampling programs is complete and preparation of the manuscript is in process.

Blue crab migration data, accumulated from previous programs, have been partially analyzed to establish the significance of directional movement, distances traveled, days out and size components of migratory populations. Completion is scheduled for 1990.

A contract was issued by the Southeast Regional Office of the National Marine Fisheries Service to the Gulf States Marine Fisheries Commission on January 1, 1988, to develop, prepare, publish and distribute a fisheries management plan for blue crabs in the U.S. Gulf of Mexico. Through a series of task force meetings which Phil Steele of FMRI chaired, technical aspects of the plan and specific management recommendations were completed. The FMP was reviewed, approved and scheduled for printing in April 1990.

Data from the spiny lobster field study at Looe Key National Marine Sanctuary are being analyzed. Initial analysis indicates that spiny lobster density is about 60 animals per hectare on the fore reef and that at any one time between 600 and 1,200 spiny lobsters reside there. Density drops markedly, even in protected areas, immediately after the opening of the lobster season. The fore reef had the most females in relation to males and had larger sized lobsters.

A project to assess existing stocks of queen conch and evaluate the feasibility of stock enhancement with hatchery-reared juveniles completed its third year. More than 1,288 hectares of the sea floor were surveyed by towed divers, using a randomized sampling program stratified by season and habitat. The data indicate very low conch abundance. A conch hatchery was set up in the Florida Keys and several juvenile conch have been reared from eggs. Tag-recapture studies provided data for analysis of growth and mortality in both laboratory and wild aggregation of queen conch. Reports of the data are in process.

PLANKTON BLOOMS

Studies continue on identifying and culturing potentially toxic dinoflagellates and using shape/size analyses as a tool in identification. Maintenance of existing cultures and isolation of additional potentially toxic phytoplankton continues. A minor bloom of Gymnodinium breve occurred on the gulf coast in early 1990. Bivalve harvesting closures and information advisories to the public were accomplished as required.

ENDANGERED SPECIES

The department continues to pursue various strategies to ensure the future of Florida's sea turtle populations. These include promoting the use of turtle excluder devices (TEDs) to reduce incidental mortality of sea turtles in shrimp trawls, increasing the protection of nesting beaches and foraging habitats, assisting with implementation of lighting ordinances, providing standardized guidelines and training to sea turtle conservationists and developing improved turtle nest protection programs on beaches managed or owned by the state of Florida.

Manatee mortalities totalled 166 in 1989: 50 deaths were due to watercraft collisions, 3 animals were crushed/drowned in flood gates or canal locks, other human-related deaths totalled 5, 36 were perinatal mortalities, 32 were due to other natural causes, 39 deaths were of undetermined causes and 1 was verified but not recovered for examination. This was the highest overall mortality year, as well as the highest due to watercraft collisions. Brevard, Collier, Duval, Lee and Charlotte counties led the list of deaths; watercraft deaths were highest in Brevard, Collier, Duval, Broward, Dade, Pinellas and Volusia counties.

Rulemaking for the creation or amendment of specific manatee protection zones was processed in six targeted counties. Thirteen counties were identified as key manatee habitats requiring expanded manatee protection in their waterways.

The Division of Marine Resources reviewed and commented on local government manatee protection plans. The Florida Marine Research Institute assisted Brevard and Duval counties in the development and implementation of boating studies. The Institute also worked with the U.S. Fish and Wildlife Service in the radio-tracking of 19 manatees. Manatee abundance and distribution were assessed by aerial census at several selected sites. The Florida Marine Patrol made 173 arrests for various manatee-related violations in 1989.

FISHERIES STATISTICS

The commercial fisheries statistics cooperative effort with the National Marine Fisheries Service continued. The Marine Fisheries Trip Ticket Program has approximately 650 dealers reporting 30,000 to 40,000 fishing trips per month. The program provides catch and effort data on all state fisheries and real time effects of management decisions. Fisheries independent sampling methods for multispecies complexes are being conducted in Tampa Bay, Charlotte Harbor and the Indian River. Apalachicola Bay and the St. Johns River are being evaluated as future collection sites. Testing continues for quantitative and efficient sampling methods. Recreational fishing sites continue to be visited on a random basis to update fishing activity levels and facilities. The data acquired are the basis for future surveys on recreational fishing and boat traffic and their effects on endangered marine species, as well as planning of state surveys of recreational fishermen and their catch.

STOCK ENHANCEMENT RESEARCH

In 1985, the Florida Legislature appropriated funds to construct the Institute Marine Fish Stock Enhancement Research Facility. There are now 12 one-acre ponds located at Port Manatee, with construction of support facilities in progress at the site.

Perceived declines in snook and red drum abundance in Florida suggested that these two species needed immediate attention. To date, pond rearing success of snook has been fleeting. However, the unprecedented performance of red drum, both in the hatchery and as a potential aquaculture product for table fare, has been very encouraging. These use of red drum in hatchery and stock enhancement is fulfilling two research needs: (1) to evaluate restoration concepts specifically regarding red drum; and (2) to examine stock enhancement concepts as applied to other species with similar life history, physiology and habitat preference.

BUREAU OF MARINE RESOURCE REGULATION AND DEVELOPMENT

The primary responsibilities of the bureau include the classification and monitoring of shellfish growing waters and the inspection of shellfish and crab processing plants to ensure that shellfish and crabs are processed in a sanitary manner. Other programs include oyster reef construction and oyster transplanting and shellfish leasing.

Sections 20.06(4), 20.56(6), 370.021, 370.071 and 370.16, Florida Statutes and Chapters 381 and 386, Florida Statutes, 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 to "improve, enlarge, and protect the oyster and clam resources of this state" {Section 370.16(12)} this department has been actively engaged in the collecting of oyster shell from processing plants and constructing and restoring oyster reefs on public bottoms. During 1989, the Oyster Culture Section collected 214,232 bushels of shucked oyster shells and planted 220,296 bushels to restore approximately 40 acres of oyster reefs in Apalachicola Bay.

Again in 1989, $325,000 were appropriated by the legislature as part of a statewide commitment to rehabilitate and develop productive shellfish resources. Funding was allocated among six coastal counties, Levy, Dixie, Wakulla, Franklin, Bay and Santa Rosa. Approximately 205,000 bushels of live oysters and 140,000 bushels of shell were planted during resource development projects.

Marine Fisheries Information System statistics showed oyster landings statewide in 1988 were 3.8 million pounds valued at $7.1 million. Landings for Franklin County, representing oysters reported to monitoring stations in Apalachicola Bay, reflect estimated declines in statewide production for 1989. The department has determined that extended drought conditions from 1986 through 1988 have had injurious effects on oyster resources on a regional level and that resolution of the problem facing the oyster industry are of regional significance. Additional appropriations of $200,000 were allocated to rehabilitate damaged oyster resources and mitigate economic hardship in Franklin and Bay counties.

Hard clam production decreased slightly in 1987 to 1.2 million pounds valued at $6 million (MFIS). Production declines are anticipated in 1988 resulting from poor recruitment during 1985-1987 in the Indian River, especially in Brevard County which is the largest producing county. The department issued 563 clam harvesting licenses in Brevard and Indian River counties, representing a reduction of about 40% in the number of clam fishermen in the fishery. Clam harvesting licenses generated a total revenue of $51,150 in user fees.

Clams harvested from waters classified as restricted or conditionally restricted must be processed through relaying and depuration activities rigorously controlled by the Division of Marine Resources. The division has promoted depuration as a practical method for cleansing potentially contaminated shellfish, ensuring product quality and protecting public health. In 1988, the division issued 16 special activity licenses to leaseholders and depuration plant operators; six licenses were issued for facilities using controlled purification processes.

Provisions of Section 370.16(1)-(11), F.S., allows leasing sovereign submerged bottoms for cultivation of oysters and clams. In 1988 there were 161 shellfish leases in effect totalling 2,079.02 acres. Cultivation of hard clams and oysters offers a technically feasible and economically practical alternative to increase shellfish production. Additionally, 25 Chapter 253 aquaculture lease applications were reviewed by the division.

The division licensed 210 shellfish processing plants. Two comprehensive shellfish surveys to determine proper classification of coastal waters for shellfish harvesting were completed in 1988. Nearly 14,000 acres of growing waters in three counties were classified by the Shellfish Environmental Assessment Section.

The Artificial Reef Program, which provides funds to local governments to help defray the costs of constructing an artificial fishing reef, was enhanced by receipt of Wallop-Breaux funds from the U.S. Fish and Wildlife Service. Twenty projects were funded during 1988, and proposals for 20 new projects were received for review.

BUREAU OF MARKETING AND EXTENSION SERVICES

The seafood industry today plays an important role in Florida's economy and the Florida Department of Natural Resources. The Bureau of Marketing and Extension Services is a vital factor in its continuous growth. The bureau's prime function is to spearhead the state's seafood marketing activities, not only in Florida, but in existing and potential markets both foreign and domestic. With headquarters in Tallahassee, the bureau consists of five offices located in Florida and Georgia.

The market potential for Florida seafood continues to grow. Problems known to be limiting the growth of domestic fisheries center around production of traditional species. While allocation of the resource is a common concern affecting the consumer supply, the bureau's attention will be focused on the production of less known fisheries and the utilization of by-products. The underutilized species will continue to receive product education and enhancements within the scope of extension efforts while utilization of by-products and less desirable food fish will be set forth in the economics development component.

Several new fisheries will be given study including work with coastal herring and deep water marine eel. A major work effort will be directed to the Rex eel. Coordinated plans are underway with the University of Florida staff to stay current with research development to expand production and test markets of oriental and European origin. Product forms and specialty processing such as smoking may open up markets both domestic and internationally.

In addition to marine products, the bureau will attempt to seek funding support for aquacultural products such as catfish, crawfish, alligator, fresh water eel and tilapia. These products have the potential to supplement the supply of fish currently demanded in the market place.

The United States' competitive position on the international front appears favorable for increased efforts to expand exports. Coordination of Florida's program will be improved by closer liaison with the Florida Department of Commerce's Division of International Trade and Economic Development.

The international marketing expansion work will also provide closer liaison with the U.S. Department of Commerce, International Trade Association, U.S. and Foreign Commercial Service offices in Florida and in export trading companies in Atlanta, Georgia, to improve trade opportunities. Special industry tours will be planned to introduce product to export trading companies located in the Southeast. International food shows and exhibits along with Florida trade missions will also be coordinated with the Gulf and South Atlantic Fisheries Development Foundation and Florida Department of Commerce.

Domestic market expansion will be centered around the combined efforts of the bureau, Southeastern Fisheries Association, Florida Department of Agriculture and Consumer Services and other groups to formulate a quality certification program. A fish and seafood component is being

considered with the aid of industry representatives and Institute of Food and Agricultural Sciences personnel, to establish a quality certification promotion for all Florida products.

The bureau now maintains a growing library of video tapes to tell the Florida seafood story. The tapes can be used at seafood retail counters as point of sale information, and other tapes offering information on capture, handling, processing and food demonstrations are available.

With the placement of a new position in Gainesville, seafood nutritionist specialist, the bureau will provide technical guidance and nutrition research and findings to further promote the benefits of Florida seafood. This program will be in association with the seafood technology program in the Food Science and Human Nutrition Department at the University of Florida, IFAS. The focus of this program will be in the areas of nutrition labeling for the seafood industry, a nutritional newsletter, seafood extension presentations, recipe development, seafood nutrition computerized database and professional development.

The new photographic component of the bureau will provide graphic support for all phases of the program. The primary medium will be still photography of the industry to serve the interest of food service, retail and consumer education. Video presentation will be added as grant funds become available on a contractual basis.

Future plans for service in the institutional area are scheduled to be directed through improved cooperation with the Florida Restaurant's Association and related groups in food service. The past efforts of the bureau have been related to food competition with professional chefs. The bureau will continue this approach and further expand efforts to reach food distributors, food and beverage managers and owners to maximize serve and information about seafood.

FISHERIES MANAGEMENT AND ASSISTANCE SERVICES

A new office of Fisheries Management and Assistance Services has been set up under the Division of Marine Resources. Although in the early stages of establishment, it will be composed of the following four sections: (1) a fisheries management group with responsibilities of providing liaison between the department and Florida's Marine Fisheries Commission; (2) an artificial reef and fisheries enhancement section to handle the state's responsibilities in these areas; (3) an emergency response team to properly address natural or man-made marine resource disasters and (4) a fisheries information and assistance service to better inform the public on fishery rules, regulations and needs.

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

Office of Fisheries
Marine Fisheries Division

During 1989 the Louisiana Department of Wildlife and Fisheries (LDWF) participated in five task forces made up of fishing industry representatives, legislators and scientists, which have begun to review the way Louisiana manages its fisheries resources and prepares plans for the future. The Shrimp Task Force was established by Governor Roemer with an Executive Order while the Oyster Task Force and the Limited Entry Task Force were established by the Louisiana Legislature and the Crab Task Force and Finfish Panel were set up by the LDWF.

SHELLFISH PROGRAM

Shrimp Seasons

The shrimp season in all three zones of the state's inshore waters closed at 12:01 a.m., Wednesday, December 21, 1988. In offshore territorial waters, shrimping continued until 12:01 a.m., Tuesday, January 31, 1989. At that time, all three offshore zones closed except for the area from Bayou Fontanelle (Empire Ship Channel) to Caminada Pass where the closure was for that portion of Louisiana's offshore territorial waters in Shrimp Management Zone 2 from the inside-outside shrimp line seaward for three miles.

The shrimp trawling season in the state's offshore territorial waters began state wide at 6:00 a.m., Friday, April 21.

The annual public hearing to discuss forecasts and proposals for the 1989 inshore shrimp trawling season was held in New Orleans on Thursday, May 4, 1989. At that meeting briefings were presented on the status of shrimp populations, projected growth rates and estimated shrimp size by opening day of the season. All segments of the public and shrimping industry were encouraged to attend the hearing and voice comments for consideration by the Louisiana Wildlife and Fisheries Commission (LWFC).

Technical data presented to the LWFC on May 4-5, 1989, indicated that the LWFC's technical criteria for opening the spring inshore shrimp season would be met by May 22 in Zones 1 and 2, and by June 5 in Zone 3. Conditions in Zone 1 were the same as in Zone 2. At the end of April, Zone 1 shrimp are typically smaller than Zone 2 shrimp. The LWFC therefore empowered the LDWF Secretary to instigate proceedings to delay the opening of Zone 1 should subsequent technical data indicate the desirability of this action. Further sampling in Zone 1 showed continuing recruitment of small shrimp to inshore populations. Through early May, catch/effort increased with little increase in mean size. As a result the LWFC delayed the opening of Zone 1 until June 5.

Zone 2 opened as scheduled on May 22. As had been expected, there was a movement of shrimp offshore associated with the new moon phase of the lunar cycle on May 5. However, sampling indicated that the bulk of the population remained inshore; catch/effort in the Terrebonne system reached over 600 in early May. Heavy rain on the weekend before opening day caused the larger shrimp to move south, resulting in opening day catches of 40/50, 50/60 and 70/80 count shrimp in the lower estuaries. Catches in the northern part of the coastal system consisted primarily of 100+ count shrimp.

Weather conditions on opening day were poor and significantly affected the operations of the fishery; strong southeast winds kept many smaller vessels from operating and sank some of those which did try to operate in heavy seas. Vessel activity was concentrated in selected areas, including Bastian Bay, eastern Barataria Bay, western Caminada Bay, eastern Timbalier Bay, Lake Pelto and the southwestern part of Vermillion Bay. Large expanses of water were void of activity. This was unusual; effort is usually fairly well distributed throughout the fishing area.

The index of recreational effort (i.e., number of trailers at selected boat launches) indicated that recreational fishing effort was about 40% lower than past opening days.

Opening day catches for both recreational and commercial trawlers were characterized as "excellent" by LDWF personnel in the middle of Zone 2. Size of shrimp ranged from 40/50 to 80/100 count. Wingnetters, however, did poorly except for certain limited locations.

In Zone 1, shrimp size met technical criteria on opening day. Tidal movement and high winds pushed the shrimp into Lake Borgne and Lake Pontchartrain. Densities in the marshes were consistently high.

Little increase in mean size was noted during the latter half of May in Zone 3. Shrimp were distributed throughout the lower 3/4 of Calcasieu Lake, with few shrimp in the upper portions of the lake. The first wave of shrimp migrated to the offshore during the last two weeks of May as a result of flood waters; this acted to keep the mean size from increasing. Another factor which kept the size of shrimp in Calcasieu Lake relatively small is that there was little access to the surrounding marsh; the smallest size remained in the lake rather than migrating to the upper marshes. On opening day, only 25% of the shrimp were to be 100 count or larger.

The shrimp season in Zone 2 of Louisiana's inside waters ended at 12:01 p.m. on Friday, July 14. Zone 2 includes all inside waters from South Pass of the Mississippi River westward to the western shoreline of Vermilion Bay, including Southwest Pass at Marsh Island. The LDWF's ongoing shrimp monitoring program had found significant numbers of juvenile white shrimp moving into the inshore waters of Zone 2.

The shrimping season in Zones 1 and 3 of the state's inside waters closed at noon, Monday, July 24, except in Breton and Chandeleur sounds. Remaining open until further notice was the area of Breton and Chandeleur sounds extending east of a line starting at the Louisiana boundary (directly north of Isle Au Pitre), then south to the east end of Isle Au Pitre, Door Point, Brush Island, Martin Island, Mitchell Island, Point Comfort, Point Chico, Grace Point (Break-in-the-Rocks, MR-GO), Mozambique Point, Coquille Point, Deep Water Point and the northeastern point of land at Taylor Pass not to include any portion of the interior marsh.

The 1989 fall inshore shrimp season opened at 6:00 a.m., Monday, August 21.

The shrimp season in Zone 2 of the state's inshore waters closed at 12:01 a.m., Tuesday, November 21. This action was necessary due to the large number of shrimp which were smaller than the legal size and declining water temperatures which significantly slowed the growth rate of these shrimp.

The 1989 fall shrimp season in Zone 3 closed at 12:01 a.m., Friday, December 22. This closure occurred after biologists and commercial fishermen reported that the shrimp in these areas were very small and water temperatures were such that little or no growth was anticipated.

The 1989 fall shrimp season in Zone 1 closed at 12:01 a.m., Monday, January 1, 1990.

Interjurisdictional Fisheries

Louisiana continued to develop the long-term fisheries/environmental database which has been used for over 25 years to make management recommendations affecting marine fisheries. A portion of these activities is funded with interjurisdictional fisheries monies obtained through the NMFS. This information is gathered by a routine sampling program in which trawl samples are gathered at over 100 locations in the estuarine and coastal area. These samples are taken as often as weekly in the spring, summer and fall months, and monthly in the winter months. In addition, constant recorders located throughout the coastal area log salinity, water temperature, tides, rainfall, winds and speed and directions of water currents. This information is augmented with data on daily rainfall, river discharge and air temperature obtained from other organizations.

The Louisiana Offshore Oil Port (LOOP)

The LOOP monthly monitoring along a transect from the Intracoastal Waterway to twenty miles offshore from Grand Isle continued for the tenth year. This sampling consists of nekton, plankton, sediments, benthos, brine tracking, water chemistry and hydrology.

The Department of Energy (DOE)

The DOE funded project is monitoring brine discharge off the western coast of Louisiana. These offshore sampling efforts continue to provide a fishery independent database essential to fishery management decisions.

Southeastern Area Monitoring and Assessment Program (SEAMAP)

SEAMAP sampling began in 1983 and includes offshore stations from the mouth of the Mississippi River to the offshore area south of Atchafalaya Bay.

Marine Fisheries Initiative (MARFIN) Shrimp Tagging

A MARFIN funded brown shrimp tagging project was undertaken in the area east of the Mississippi River. Movements of shrimp in this area are poorly understood.

MOLLUSC SUBPROGRAM

Oyster Seasons

The 1989-1990 oyster season on the public oyster seed grounds except for Calcasieu and Sabine lakes began 1/2 hour before sunrise on September 6. The Bay Gardene, Bay Junop and Hackberry Oyster Seed Reservations also opened at that time. The Bay Gardene Oyster Seed Reservation and a portion of the public seed ground were closed November 1. The Hackberry, Sister Lake and Bay Junop Oyster Seed Reservations were also closed during the season.

The public grounds in Calcasieu and Sabine lakes opened 1/2 hour before sunrise November 1 and remained opened into 1990. Gear was restricted to tongs only. Provisions were made to prohibit the harvest if the Louisiana Department of Health and Hospitals declared those waters closed to shellfish harvesting.

Lease Auction

An auction of all delinquent oyster leases was held on March 27. The auction included oyster leases on which rent was delinquent. Opening minimum bid for each lease was rental and penalty due.

Interjurisdictional Fisheries

Shell plants were done in the "Sister Lake Seed Reservation" and an area east of the Mississippi River on the public grounds in the vicinity of Pelican Island.

Seed Grounds

Salinity, a prime factor determining oyster production on Louisiana's public oyster seed grounds and reservations, remained higher than optimal in 1989. The introduction of freshwater east of the Mississippi River resulted in localized oyster production; however, in general, production levels were low. Sampling indicated that in historically productive areas of Plaquemines Parish only 2,500 of the 13,000 acres of public reefs produced seed oysters. Those areas produced only 6% of the expected oyster seed needs during the 1989-1990 season.

Caernarvon

The U.S. Army Corps of Engineers, with support from the Louisiana Department of Natural Resources and the LDWF, has developed a project for the controlled diversion of freshwater from the Mississippi River into the Breton Sound estuary. The diversion structure will be located in the mainline Mississippi River levee at Caernarvon, Louisiana, and have a design flow capacity of 8,000 cubic feet per second. The effect of the diversion project on the estuary's ability to support wildlife and fisheries resources is expected to be significant. Diversion of nutrient and sediment rich freshwater will rejuvenate existing marsh, significantly reduce dependence on local rainfall as the principle source of freshwater input to the estuary, reduce peak salinities and induce more regularity in the seasonal salinity pattern. Project benefits involve reducing land loss rate and increasing fish and wildlife production.

The LDWF conducts extensive monitoring activities in the Breton Sound estuary. It has undertaken a diversion monitoring program to accurately measure the success of the diversion project. In 1988, the LDWF began a three-year prediversion monitoring program to establish base-line information. The monitoring program will extend for four years after the beginning of diversion activities to measure the effect of these activities.

FINFISH SUBPROGRAM

Red Drum

The commercial red drum fishery remained closed as a result of legislation enacted in 1988. The new law also reduced the recreational creel limit to five red drum per day and set a possession limit of five. The minimum size was set at 16"; only one red drum 27" or longer can be taken per day.

The LDWF continued its juvenile and red drum tagging program.

Spotted Seatrout

The commercial harvest of spotted seatrout in state territorial waters was halted at midnight, April 9, 1989. 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 harvest was suspended because technical projections indicated that the 1.25 million pound annual quota mandated by the legislature had been reached.

Legislation enacted in 1988 set the commercial quota at 1,250,000 pounds per year with the commercial spotted seatrout season beginning September 1 each year. Once the quota is reached no

vessel possessing or fishing any seine net, gill net, trammel net or hoop net is allowed to have a speckled trout aboard. Commercial mesh sizes for gill nets, trammel nets and seine nets other than strike nets increased to a minimum of 4 1/2 inches once the commercial speckled trout quota was reached. The commercial fishery operated under a 14 inch minimum size limit and the recreational fishery under a 12 inch minimum size limit. Recreational fishermen were also governed by a 25 fish per day bag and possession limit. All fish are required to have head and caudal fin (tail) intact when put ashore from a vessel or when sold.

Monitoring

The saltwater finfish resources of the state are enjoyed by both commercial and recreational fishing interests. A comprehensive monitoring program was developed 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-adult and adults and provide information on relative abundance, year class strength, movement and gonadal condition. The gill net is 750' in length, 10' in depth and constructed of monofilament. The net is composed of 5 panels, each of the following mesh sizes: (1) 150' x 10', 1" bar, 2" stretched mesh, minimum number 104 filament; (2) 150' x 10', 1 1/4" bar, 2 1/2" stretched mesh, minimum number 177 filament; (3) 150' x 10', 1 1/2" bar, 3" stretched mesh, minimum number 208 filament; (4) 150' x 10', 1 3/4" bar, 3 1/2" stretched mesh, minimum number 208 filament. A trammel net is used to provide information on relative abundance, standing crop and movement. The trammel net is 750' in length, 6' in depth and constructed of nylon. The entire net has a 2:1 sag, and the mesh sizes are as follows: inner wall - 1 5/8" bar, 3 1/2" stretched, number 6 twine; outer wall - 6" bar, 12" stretched, number 9 twine. Gill net samples are taken semi-monthly, trammel net samples are taken monthly during October through March, and seine samples are taken monthly. Hydrological readings (conductivity, salinity and water temperature) are taken one foot beneath the surface each time a biological sample is taken. Also, estimates of cloud cover, sea state, tide wind direction and speed are taken each time a biological sample is taken. Samples are taken at specific locations arranged in such a manner so as to cover the beach, mid-marsh and upper marsh areas of all major bay systems throughout coastal Louisiana. The catch and hydrological information is summarized for each coastal area on a weekly 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.

Menhaden

In addition to opening and closing the shrimp seasons, information from the trawl samples is used each year to develop a forecast for menhaden production. Meetings are held every year with menhaden industry personnel prior to the opening of the menhaden season to present catch forecasts and to discuss other matters relative to the menhaden industry. This year's meeting was held on February 23, 1989.

The predictive models for earlier menhaden forecasts were based on 1964-1977 temperature (Guillory et al. 1983) and juvenile menhaden (Guillory and Bejarano 1980) data. The availability of nine additional years (1979-1987) of commercial harvest data mandated that the earlier predictive models be updated and refined. A study was undertaken, utilizing 1964-1987 data: (a) to investigate the relationship between gulf menhaden year class strength (measured by catch-per-effort or harvest of age-1 fish) and juvenile menhaden indexes or environmental factors; and (b) to develop predictive models for Louisiana menhaden landings by number and

weight. A major advantage of these new and updated predictive models is that total harvest, not just catch-per-effort, can be estimated. Effort was used in conjunction with juvenile indexes, environmental factors, or commercial harvest statistics in multiple regression equations. A forecast was made for a below average 1988 year class (age-1's in 1989) and 1987 year class (age-2's in 1989) to enter the fishery in 1990. The projected Louisiana menhaden landings was in the 550,000-600,000 MT range.

Artificial Reefs

Louisiana's Artificial Reef Program began in 1987 with the legislature's acceptance of a comprehensive plan for siting artificial reefs in both state and federal waters. The first reef was created in October 1987 when Oxy Corporation donated the jacket of a large eight-pile structure. The structure, located in South Marsh Island-146, was toppled in place in one of the eight planning areas selected by the Artificial Reef Council. Two more artificial reefs were created in 1988. Chevron contributed its South Timbalier-128 platform which is located in 102 feet of water approximately 20 miles southwest of Grand Isle. A cooperative effort between Exxon Corporation and Mobil Exploration and Producing, resulted in the transportation of a structure from offshore Texas to one of Louisiana's planning areas. In addition to the structures, the participating companies donate half of their savings realized through participation in the program. These monies are placed into a trust fund for administration of the program and maintenance of the reefs. To date, over $600,000 has been deposited into the fund.

Several other oil and gas companies have come forward and expressed interest in participating in the program. These companies, which include CNG, Kerr McGee, Odeco and Chevron, plan to abandon several structures in the summer of 1990. Plans are now underway to convert the jackets of these structures into artificial reefs.

The program is also working on a project to create inshore artificial reefs from clam shell. Each reef will be approximately one acre in size and have two feet of relief.

State-Federal Cooperative Fishery Statistics

Since 1983, the Coastal Fisheries Institute (CFI) at Louisiana State University has been working cooperatively with the LDWF and the NMFS in collecting urgently need biological and catch/effort data on king mackerel in the western gulf. This program was so successful that it has since been expanded to include other recreationally and commercially important fishes managed by the federal government such as reef fish and shrimp. The information supplied by CFI to the NMFS over the last four years has been the only commercial data on king mackerel and red snapper available from the western gulf for use by the NMFS and Gulf of Mexico Fishery Management Council (GMFMC) statisticians. The continuing goal of this project is to obtain catch/effort data, sex ratios, ages and length frequencies of king mackerel, other coastal pelagics like Spanish mackerel and tunas and reef fish landed by both commercial and recreational boats in Louisiana.

MARFIN Red Drum

A MARFIN funded project entitled "Louisiana Red Drum Research" began in October 1986 and work continued through 1988. The project objectives are as follows: (1) to assess estuarine escapement and migration; (2) to collect catch and effort data and length frequency composition of fish caught by commercial and recreational vessels in state waters; (3) to obtain and validate annulus formation in sagittal otoliths; (4) to determine age structure, growth rates and reproductive biology; (5) to determine total, fishing and natural mortality and size at recruitment in Louisiana's fishery; (6) to develop an index of offshore stock abundance from analysis for searching, siting and harvesting patterns of purse seine fisheries and (7) to assess the ability of existing and proposed regulations to attain the GMFMC's 30% escapement guideline.

Wallop-Breaux

In 1988, Louisiana used the marine share of its Sport Fish Restoration Funds in two activities; development of boat ramps to create access for fishermen and support of the Artificial Reef Program discussed above. Funds are provided to Louisiana State University through an interagency agreement for development and revision of the Louisiana Artificial Reef Plan.

MISSISSIPPI DEPARTMENT OF WILDLIFE, FISHERIES AND PARKS

Bureau of Marine Resources

Saltwater Fisheries Section

The Saltwater Fisheries Section is responsible for the administration of all marine fisheries management-related activities for the state of Mississippi. The section provides technical support to the Mississippi Commission on Wildlife, Fisheries and Parks, the Gulf of Mexico Fishery Management Council, the Gulf States Marine Fisheries Commission and the Gulf State-Federal Fisheries Management Board. In addition to participating in regional fisheries monitoring and assessment work, such as the Southeast Area Monitoring and Assessment Program (SEAMAP), section biologists conduct routine surveys of Mississippi's shellfish and finfish resources.

The monitoring and assessment work is intended to provide support data for the management of the state's fisheries resources, to coordinate seasonal or area openings and closures of the various fisheries in the territorial sea. In addition to these fisheries independent studies, section biologists participate in regional commercial fisheries statistics program in which commercial landings data is collected, processed and evaluated. The end result of these efforts include: publication of "Mississippi Landings," the weekly "Market News Report" and other miscellaneous landings-related reports.

The division's annual program of oyster reef rehabilitation involved the planting of 10,424 cubic yards of clam shell on reefs in the western Mississippi Sound where over two-thirds of the state's harvestable reefs occur. Through January 1989, 3,120 cubic yards of oyster shells were purchased and planted in Mississippi waters. Of that amount, 1,680 cubic yards were planted in Biloxi Bay to rehabilitate spawning and relaying stocks previously depleted. The remaining 1,440 cubic yards are stockpiled for future planting. Additional oyster shells were purchased, collected and stockpiled between February and July; however, those figures were unavailable at the time of the report.

In addition to the program's shell planting efforts, 8,205 barrels or 24,615 sacks of oysters were relayed from the harvest restricted Pascagoula reef to harvestable reef areas in East Jackson County. This relaying effort involved over 3,000 hours of program personnel time in a three month period. Approximate cost for relaying the oysters was $1.77 per barrel.

Finally, the section is continuing a recreational creel survey of the three coastal counties. Technicians visit access sites on randomly prescribed days to interview fishermen and enumerate their catch. The program is expected to yield valuable information about the state's marine recreational fishery.

Several additions were made to the staff of the division during FY89 in order to be able to accomplish the above-described work. Mr. John Cirino, B.S., University of Southern Mississippi, is overseeing the oyster program. Ms. Beverly Allen, M.S., University of Alabama at Birmingham; and Elizabeth Bond, Ph.D., University of Southern Mississippi, are performing duties relating to the oyster program. Mr. Michael Goza, M.Aq., Auburn University, is assigned to the Trip Information Program.

Mr. Patrick Murphy, formerly with the Gulf Coast Research Laboratory, is performing creel survey duties. Mr. Steve Breland, formerly with the Gulf Coast Research Laboratory, is performing duties on the king and Spanish mackerel project. Mrs. Ava Coleman, B.S., University of South Alabama, is the new state port agent assigned to the collection of gulf shrimp data in Harrison and Hancock counties.

Description of Fisheries

Landings of commercial marine fish and shellfish during 1988 amounted to 294,673,068 pounds valued at $43.7 million. This represents a 25% decrease in volume and a 2.7% decrease in value over the previous year. This decrease can be attributed to the decline in menhaden landings which constitute the bulk of Mississippi's landings tonnage.

The most noteworthy increases in landings occurred for shrimp, up 57.5% in volume but down 6.4% in value. This decrease in value for shrimp, while the landings increased, may be attributed to the large increase of low cost shrimp being imported into the U.S.

The Pascagoula-Moss Point area was ranked fifth among U.S. ports in quantity of commercial fisheries landings. Cameron, Louisiana, was the leading U.S. port.

Each individual fishery for which data are available and nonconfidential is summarized as follows:

Menhaden

Menhaden landings of 277.1 million pounds in 1988 represent a 27% decrease over the landings in 1987. The total value of 15 million dollars was up some 3.2% over last year, however. This is largely attributable to a significant 42.1% increase in the unit price from $0.038 to $0.054 per pound.

Menhaden are used primarily for the production of meal, oil and solubles, with small quantities being used for bait and canned pet food. Gulf-wide landings of menhaden have been steadily declining since the record-level catches of 1983, 1984 and 1985. This decline was predicted by the National Marine Fisheries Service and state fisheries scientists, and this year's continued drop in landings appears to be a continuation of the predicted trend.

Oysters

During 1988, 146,602 pounds of oyster meats were landed in Mississippi with an estimated value of $464,000. This is an increase of 10% of the landings for 1987.

Total process production of all oyster products for 1988 was 1,703,884 pounds of meat with an estimated value of $6,778,430. Compared to 1987, the 1988 production showed a 4.5% increase.

Harvest for Mississippi oyster reefs for 1988 was approximately 22,000 sacks of oysters. This was a 25% increase over 1987 harvest. The increase was due to the relaying efforts and shell planting efforts by the Bureau.

Blue Crabs

The blue crab harvest in Mississippi again showed a decline during 1988. Crabs landed equalled 863,395 pounds with an average price-per-pound of $0.38. This represents a 37% decrease in poundage landed, with a total value of the harvest declining 32.6% even with the 8.6% increase

in unit price. Interestingly, gulf-wide landings of all species of crabs increased some 15% during 1986.

Edible Finfish

United States per capita consumption of fish and shellfish in 1988 was 15.0 pounds. This total was only 0.4 pounds less than the record set in 1987. Finfish landings in the northern Gulf of Mexico typically undergo dramatic fluctuations from year to year, principally as the result of changing availability and shifting to other target species by fishermen as the result of market demands. This trend was amply demonstrated by Mississippi's 1988 finfish season.

Black drum landings showed a marked 26.8% decline in landings volume, principally as the result of decreased purse seine pressure on the species. The total dockside value of this species decreased some 49% between 1987 and 1988. Unit prices (price per pound) decreased to $0.154, representing a 30% decrease in that indicator.

In 1988, mullet landings, both striped and black, totalled some 700,161 pounds, representing a 19.6% increase over landings during the previous reporting period. Average total dockside value increased 34.6% in 1988; and the price per pound of fresh, whole mullet rose about 12.5% to $0.458.

Red snapper landings in 1988 underwent a fall from 608,600 pounds to 397,897 pounds, a 34.6% decline. Total dockside value fell 32%, from $915.3 thousand in 1987 to $621.6 thousand in 1988. Average unit prices during 1988 stood at $1.56, up 4% from the previous year.

Changing patterns in finfisheries are evident in both the short term and the long term. In addition to the factors previously mentioned, the demands for frozen fishery products both here and abroad are of particular importance in determining local finfish prices. In addition to black drum and mullet, Spanish mackerel are a significant contributor to the frozen fish market. Landings of Spanish mackerel in Mississippi for 1988 totalled only 33,971 pounds. The total dockside value of these landings was $11,940, representing a 37.2% decrease in landings and a 27.6% decrease in value for this fishery. The price per pound of Spanish mackerel in 1988 was $0.35, up 16.7% from the $0.30 per pound referenced in 1987.

Landings of premium inshore market species (i.e., spotted seatrout, red drum and flounder) were as follows:

Red drum landings showed a decrease of 22.6% in 1988, falling from 53.1 thousand pounds to 41.1 thousand pounds. The total dockside value of red drum landings fell less than one-half of 1%; the final tally standing at some $41,131. The average price-per-pound rose 28.7% to $1.00, largely as a result of increased demand for this product. Commercial landings of spotted seatrout during 1988 totalled 65,584 pounds valued at $76,297. One of the higher-priced and consumer-preferred species, spotted seatrout, averaged at prices of about $1.16 per pound in 1988, representing a 10.3% increase in price.

Flounder landings, as collected by the Saltwater Fisheries Section and the National Marine Fisheries Service port agents under a cooperative statistical agreement, include a number of different species. In 1988, the landings volume of flounder totalled 34,079 pounds, representing a 14.5% decrease over those landed in 1987. The total dockside value of these landings was down 32% from $43,100 in 1987 to $29,111 in 1988. However, the price-per-pound for flounder in 1988 was up 13.5% over 1987 prices.

Landings of kingfish, locally known as ground mullet, amounted to 137,428 pounds in 1988, valued at some $59,492. The average price per pound of kingfish during 1988 was up to $0.43, from the $0.36 of last year.

Grouper landings, which include spotted, Nassau and black grouper, totalled 37,010 pounds in 1988, up 14.9% from the 32,300 pounds in 1987. Total dockside value of grouper also rose 19.5% during the interval. The price-per-pound of this species averaged $1.08 in 1988, up 4.3% from 1987.

In summary, of the major finfish indicator species, landings gains were shown by the following: bluefish, croaker (food), king whiting (ground mullet), grouper, mullet, pompano, sheepshead, spotted seatrout and sea catfish. Landings declines, on the other hand, were recorded for the following: black drum, blue runner, flounder, menhaden, red drum, red snapper and Spanish mackerel.

Shrimp

The Mississippi Commission on Wildlife, Fisheries and Parks opened the 1989 shrimp season on June 5, after Saltwater Fisheries Section biologists had determined that shrimp size would average 68 to the pound on that date.

In 1988, heads-off landings of Mississippi's three major species of shrimp (white, brown and pink) were up 57.8% from last year's catch, totalling 12,442,637 pounds. However, because of a significant decrease of 40% in the average price paid per pound, the total harvest in 1988 was valued at $25,542,670, representing a 6% decrease over the value of the previous year's catch.

The 1988 shrimp season in Mississippi represented a better than average year based upon the 25-year mean landings figure of approximately 5.3 million pounds. Once again, U.S. shrimp imports broke all-time records during 1988, totalling over 489.7 million pounds valued at $1.73 billion, up from the 461.2 million pounds and previous year's value of $1.68 billion.

Enforcement

The FY 88-89 year for BMR Enforcement has netted 1,020 arrests. Of those arrests, 424 were BMR related, 388 were Boat and Water related and 208 were Fish and Wildlife. BMR arrests include violations or regulations involving shrimp, crab, oyster, finfish, live bait and various other species. There was a slight increase in the total arrests made this year. However, there was a slight decrease in the amount of BMR related arrests. The increases were seen in the Boat and Water and Fish and Wildlife arrests.

This year we were given the chance to take advantage of trapper agents to aid in alligator control. We were issued a total of 100 tags for captured alligators, which we feel is an insufficient amount. Our officers and trapper agents are concerned with moving alligators from highly populated areas to more remote areas for the safety of local residents.

Incident reports are showing the average involvement with the public. As always, tow-in's, search and rescue and investigations of mammals top the list.

TEXAS PARKS AND WILDLIFE DEPARTMENT

Texas Parks and Wildlife Coastal Fisheries Research Management Programs

The Coastal Fisheries Branch of the Texas Parks and Wildlife Department (TPWD) 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. More than $400 million is spend annually in Texas' 4 million acres of saltwater by approximately twenty thousand commercial and over one million recreational fishermen.

The goal of the Coastal Fisheries program is to develop management plans within the concept of optimum yield for selected fisheries that include harvest regulations, resource stock enhancements or habitat enhancements based on monitoring programs and the best scientific information available. The objectives of the Coastal Fisheries Branch are: (1) to recommend management strategies for the aquatic marine resources to the Division Director, the Executive Director, the Parks and Wildlife Commission and the Legislature based on the results of the research and monitoring programs and the best scientific information available; (2) to determine the sizes and changes in the sizes of finfish and shellfish populations caused by environmental conditions and fishing; (3) to determine the landings of marine species and the associated social and economic characteristics of the fisheries; (4) to develop mariculture techniques for selected species and make the information available to commercial mariculturists in Texas; (5) to educate the consumer regarding high quality, wholesale seafood products. To achieve these objectives, the Branch is organized into five major functions or programs: Administration, Fisheries Resource Monitoring, Fisheries Harvest Monitoring, Marine Culture and Enhancement and Seafood Marketing. In FY 89, a total of 36 technical reports, scientific journal articles and magazine articles about various aspects of the Texas coastal fishery resources were completed to aid in meeting the objectives.

Effective management of finfish and shellfish resources must be based on a thorough knowledge of the population dynamics and stability of the resources. Long-term trend data based on routine monitoring are necessary to assess changes in abundance and stability. Landings information from both sport and commercial fishermen is necessary to assess the impacts of user groups on the fisheries and to determine the economic importance of the fisheries of the state.

Monitoring of the relative abundance of adult finfishes in Texas waters is accomplished 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 20-foot trawls are used to determine the abundance of juvenile finfish was well as shrimp, blue crabs and associated organisms. Oyster dredges (19.5 inches wide) are used to collect oyster samples. Beach seines (200 feet long) and standard 60-foot long bag seines are used to sample the gulf surf zone.

The sport landings and fishermen activities are estimates from on-site creel interviews of sport boat fishermen at the completion of their trip. Samples are selected in proportion to the activity at a site (probability sampling); thus the higher use sites are sampled more frequently. Roving counts are used to assess relative pressure at sampling sites to ensure that proper sampling probabilities are maintained. The charter fishery is randomly sampled on a continual basis within each of the bay systems of the coast by intercepting boats when trips are completed (party boats) or by accompanying the boat on fishing trips and assessing the landings (headboats). Commercial landings are obtained from commercial seafood dealers through submission

of Monthly Marine Products Reports and through on-site interviews of commercial fishermen at the completion of their trip.

The Perry R. Bass Marine Fisheries Research Station at Palacios was established to provide information and techniques necessary for the improvements of Texas fisheries management plans. Research effort is directed toward methods for spawning and rearing marine fish and shellfish. Once developed, such techniques will be used to provide animals for stocking coastal bays and freshwater reservoirs and information on techniques will be made available to commercial mariculturists in Texas. Coastal Fisheries personnel cooperate with other coastal states in marine fisheries enhancement efforts through the transmittal of information and supply of available fishes.

As directed by the Texas Legislature, the Seafood Marketing Program was initiated to increase the utilization and value of seafood products. This charge is aimed at all functional levels within the marketing channel. The Seafood Marketing Program has functioned through an interagency contract with Texas A&M University, the Texas Agricultural Extension Service, the Sea Grant College Program's Marine Advisory Service and the Texas Department of Agriculture. Several fisheries development foundations nationwide have also supported various work completed by the Seafood Marketing Program.

Activities in FY 89 Included:

A draft Shrimp Fishery Management Plan was distributed for review and an Oyster Fishery Management Plan was approved as part of the six-year plan for the Coastal Fisheries Branch approved by the Parks and Wildlife Commission. The Branch also participated in the development, review and revision of ten Gulf of Mexico Fishery Management Council management plans.

Recommended changes in regulations were adopted by the Parks and Wildlife Commission to ensure stability of the resource. Regulations were modified to prevent depletion of sharks by placing a five fish daily bag limit. Size limits for billfishes were enacted to conform to federal regulations.

Saltwater and freshwater regulations continued to be clarified, simplified and standardized. Regulations were modified to prohibit use of top-water trotlines in saltwater and crab traps in freshwater.

The closure period for gulf shrimping in state waters was coordinated with the National Marine Fisheries Service (NMFS) for closure of a portion of the Exclusive Economic Zone to increase yield and value for the shrimping industry.

The Oyster Fishery Management Plan recommended the formation of an Oyster Advisory Committee. Upon the adoption of the plan by the Parks and Wildlife Commission an Oyster Advisory Committee was formed. The Parks and Wildlife Commission also appointed an Artificial Reef Advisory Committee established by the Texas Legislature.

Federal funds (Interjurisdictional Fisheries) were received to rehabilitate oyster reefs damaged by flooding. About 160 acres of oyster reefs were revitalized in San Antonio Bay.

A total of 1,268 survey-days was spent to estimate landings and pressure of sport-boat fishermen. There were 760 gill net samples, 1,800 bag seine samples, 504 beach seine samples, 2,760 bay and gulf trawl samples and 4,672 oyster dredge samples collected. A total of 2,859 fishes was tagged and released. Approximately 8% were returned for rewards. The percent of tags returned was consistent with prior years.

Gulf of Mexico waters from Alabama to the Rio Grande were sampled to a depth of 300 feet during November 1988 and June-July 1989 with other Gulf States and 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.

Oysters, red drum and spotted seatrout were collected in bays for electrophoresis analysis. Red drum were collected in the bays and Gulf of Mexico for MtDNA analysis in coordination with Texas A&M using MARFIN funds.

The socioeconomic questionnaire designed to collect data on the motivation, satisfaction and expenses of interviewed fishermen was reviewed and modified based on data analyses and staff input. Routine sport boat monitoring surveys incorporated these modified questions coastwide on May 15 to begin the third year of this data collection effort.

The commercial-vessel landings survey (250 survey days) was continued with some reduction from FY 88. Stratification procedures developed last year to improve precision of landings estimates were implemented. Sites with seafood dealers were treated as a separate sampling stratum. Bait shrimp dealers and commercial-vessel docking structures were sampled in conjunction with the seafood dealer stratum or with the boat access site stratum.

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

Research effort directed toward spawning and rearing marine fish and shellfish was continued at the Perry R. Bass Marine Fisheries Research Station. Several fishes were maintained on a controlled photoperiod and temperature regime to induce sexual maturity and spawning which resulted in about 3.3 million spotted seatrout larvae for experimentation and stocking into bays. Pond culture studies included juvenile tarpon collected and being reared to maturity, spotted seatrout stock identification, red drum and oyster genetics research, oyster spawning and marking success studies.

Technical information concerning aquaculture and commercial fish hatchery development was provided to other coastal states in a cooperative effort to enhance coastal marine fisheries.

The Seafood Marketing Program developed and distributed educational material, media articles, seafood curriculum newsletters and Texas seafood recipes through seafood outlets, media efforts, state fair events and state agencies. Educational programs and training courses were conducted for groups such as county agents, seafood producers and wholesalers and home economists. Several seafood cook-offs were coordinated for professional chefs in preparation for nationwide competitions.

NATIONAL MARINE FISHERIES SERVICE SOUTHEAST REGION

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

FISCAL YEAR 1989 ANNUAL REPORT

FISHERY MANAGEMENT (MAGNUSON ACT)

Gulf of Mexico Reef Fish -- Amendment 1 to the FMP was completed this fiscal year and submitted for Secretarial review in late August 1989. Commented formally and extensively on the proposed management measures. This was a major amendment and included some very controversial measures. Numerous comments in opposition to the proposed measures were received during the public review period. There was heated discussion pertaining to proposed measures at Council sessions that were open to the public during the reporting year. The decision date for processing (approval/disapproval) this action was November 29, 1989.

The amendment proposed to: (1) eliminate current exemptions to the red snapper size limit; (2) establish size limits for other major species in the fishery; (3) establish bag limits for red snapper, certain other snappers, groupers, and greater amberjack; (4) establish commercial quotas for red snapper, deep-water groupers, and shallow-water groupers; (5) place area prohibitions on the use of longline and buoy gear for harvesting reef fish; (6) establish procedures for adjusting the total allowable catch, size limits, bag limits, and other restrictive measures on an annual basis; (7) modify reporting requirements for reef fish fishermen; (8) require permits for the commercial harvest and sale of reef fish; (9) establish a 50% earned income criterion to qualify for a commercial permit; (10) provide for the assessment of fees to cover the administrative costs of issuing permits and fish trap tags; (11) reduce from 200 to 100 the number of allowable fish traps per vessel; (12) eliminate the use of entanglement nets for reef fish; and, (13) extend the "stressed area" by adding coastal waters off Louisiana and Texas.

Gulf of Mexico Shrimp -- Opened a 54-square mile area of the Tortugas Shrimp Sanctuary to provide economic relief to the local fishing community. This action involved preparation of an emergency interim rule for 90 days, obtaining approval from OMB for reporting and documenting catch of sea turtles in shrimp trawls in the open area of the sanctuary, and implementing a final rule for the remainder of the year. Processing these actions was complicated by the simultaneous efforts of NMFS to implement regulations requiring use of turtle excluder devices in shrimp trawls.

Reduced the area of the Tortugas Shrimp Sanctuary opened for shrimping to accommodate lobster fishermen, through an emergency rule. An unanticipated problem associated with the establishment of this sanctuary in 1981 was the expansion of the spiny lobster fishing grounds into this area. The Gulf Council held a public hearing before submitting the proposed rule opening this area to shrimp trawling; however, this potential problem did not surface. Accordingly, this action led to a series of gear conflicts between fishermen using mobile gear (trawls) and fixed gear (traps). The emergency rule separating the different groups of fishermen was based on an agreement between local fishermen to reduce the possibility of additional conflicts and gear loss.

Amendment 4 to the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico was partially approved. Approved portions of Amendment 4: (1) updated problems in the fishery and revised the FMP's objectives accordingly; (2) simplified the annual review process for the Tortugas Shrimp Sanctuary and Texas closure; (3) recommended a program to assist in the recovery of endangered and threatened sea turtles; (4) broadened the FMP's measure relating to shrimp trawling; and (5) updated the FMP's habitat section. The disapproved portion of Amendment 4 proposed that the minimum-sized landing and possession limits of the State where landed apply to white shrimp taken in federal waters. This measure was disapproved because: (1) it was not justified by adequate economic rationale; (2) the use of size counts as a management tool for shrimp is inconsistent with the FMP; and (3) the measure included an open-ended deferral to changes in State count laws that would not be reviewable for conformance with the FMP prior to becoming applicable to white shrimp harvested from federal waters. The Region is working with the Gulf Council to revise the rationale, economic analysis, and other supporting information in preparation for resubmission of this measure.

Coordinated with Texas Parks and Wildlife Department closures of the shrimp fishery in state and federal waters off Texas from June 1 - July 15, 1989, to promote growth of brown shrimp before harvest. The closure is designed to increase the value of the landings.

Gulf of Mexico Stone Crab -- Initiated a comprehensive overhaul of the regulations for the shrimp/stone crab separation zones off the west coast of Florida to align the geographical coordinates of the zones and their Loran equivalents with the revised NOS chart of the area. The latest edition of the chart revised the Loran lines of position to conform to a later survey. The zones lie partly in federal and Florida's waters. The Region provided the revised configuration to the Florida Marine Fisheries Commission and coordinated with that body to ensure simultaneous implementation of virtually identical regulations.

South Atlantic Snapper/Grouper -- Reviewed and implemented Amendment 1 to the Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region. Amendment 1 prohibited the use of trawl gear in a directed fishery for snapper-grouper species in the EEZ between Cape Hatteras, NC. and Cape Canaveral, FL. This action was necessary to prevent trawl-induced damage to "live bottom" (areas populated by sponges, corals, and other sessile invertebrates) that functions as critical habitat for most snapper-grouper species. The amendment was also designed to minimize growth overfishing that was resulting from large trawl catches of small vermilion snapper.

Reviewed and implemented a regulatory amendment that established special management zones (SMZs) around two artificial reefs off Ft. Pierce, FL. Within the SMZs, use of fish traps, bottom longlines, and electric or hydraulic reels is prohibited. No harvest of jewfish is allowed. On the inshore reef, all spearfishing was prohibited. These gear restrictions were intended to minimize user conflicts.

South Atlantic Swordfish -- Coordinated the preparation of a regulatory amendment to the Atlantic swordfish regulations to establish mandatory reporting requirements for all swordfish dealers. This action will provide statistics on size frequency of the catch of swordfish and associated large pelagics as well as total landings and value information that is critical for stock assessment and monitoring the fishery and the effectiveness of the FMP.

Gulf and South Atlantic Spiny Lobster -- The Gulf of Mexico and South Atlantic Fishery Management Councils prepared an amendment to promote the adoption of Florida Rules in the management of spiny lobster in the EEZ. A Federalism Assessment was required to document the unique relationship that combines Florida and federal rulemaking procedures. The action reduces costs to both governments, and results in compatible regulations for lobster fishing in both areas of jurisdiction.

Gulf and South Atlantic Coastal Migratory Pelagics (Mackerel) -- Two amendments (3 and 4) were submitted for Secretarial Review; two emergency actions and eight closure/zero bag limit actions were implemented, two of which were challenged in federal court. New seasonal adjustments were installed for the 1989/90 fishing year.

By emergency action, the commercial allocation for Atlantic group king mackerel was increased from 2.600 to 2.866 million pounds for the 1988/89 fishing year in early November 1988. The increase was effected to prevent premature closure of the commercial fishery by adjusting for recreationally caught fish that were sold and counted against the commercial allocation. The commercial allocation was reached in late November 1989. By Federal court order, however, the commercial and the previously closed recreational fishery remained opened to full harvest. The lawsuit was filed by the State of North Carolina and North Carolina fishermen.

In early March 1989, as a result of an appeals court ruling, the commercial fishery for Atlantic group king mackerel was closed and recreational bag limits were again reduced to zero. On February 23, 1989, the Fourth Circuit Court of Appeals granted a stay of a lower court ruling (November 25, 1988; U.S. Eastern District Court of North Carolina) that had preliminarily enjoined NMFS from enforcing closures of king mackerel fisheries. The Appeals Court ruling responded to the Department of Justice motion for an expedited appeal filed December 27, 1988. In June 1989, the U.S. Fourth Circuit Court of Appeals reversed the District Court ruling (November 1988). The decision of the Appeals Court was based on their belief that the District Court did not have jurisdiction to entertain the complaint against the Secretary nor the authority to grant injunction is not a permissible remedy for such a challenge to a regulation promulgated under the Magnuson Act.

In related action, the state of Louisiana filed suit in Federal Court citing grievances similar to the North Carolina suit, i.e., Kramer vs. Mosbacher. This action was dismissed.

Other closure and zero bag limit actions for the 1988/89 fishing year were not judicially challenged. The recreational fishery for Gulf group Spanish mackerel was the only mackerel fishery not subjected to a harvest closure because catch estimates were less than one-half of the 1988/89 allocation.

Prior to developing and proposing seasonal adjustments to TAC, allocations, and bag limits for the 1989/90 fishing year, Councils requested emergency action to restrict commercial daily catches of Atlantic group Spanish mackerel in April and May the beginning of the fishing year. In response, an emergency rule was implemented to limit daily vessel catches to 1500 pounds of Spanish mackerel from April 1 - May 30, 1989. The Spanish mackerel emergency was based on conservation issues to preserve gains achieved by the stock rebuilding program and allow an optimal number of adults to engage in spawning.

Amendment 3 was submitted for Secretarial Review in March 1989 and was partially approved in June and became effective in August. This amendment proposed prohibiting the use of purse seines and runaround gill nets in the commercial fishery for Atlantic group king mackerel, and prohibiting the use of drift gill nets for all coastal migratory pelagics. The approved portions of the amendment (1) prohibit drift gill nets in fisheries for the Gulf migratory group of king mackerel and the Gulf and Atlantic migratory groups of Spanish mackerel, (2) update the habitat section, and (3) add a new section on vessel safety. Prohibiting the use of drift gill nets on the three identified migratory groups of mackerel was approved because these groups are overfished and quotas have been set low to protect and rebuild stocks. Introduction of drift gill nets into commercial fisheries for these overfished groups would unfairly affect existing users of traditional gear who are already taking the entire quota and experiencing early season closures.

The remaining net gear prohibitions were not approved because the Atlantic group king mackerel was not determined to be overfished by the 1989 stock assessment and Councils subsequently increased the total allowable catch (TAC) by two million pounds for the 1989/90 fishing year. This nine-million pound TAC appeared sufficient to support both hook-and-line and net catches and not precipitate an early closure. The proposed extension of the drift gill net prohibition to fisheries for other managed coastal migratory pelagic species (i.e., cero, cobia, dolphin, little tunny, and in the Gulf of Mexico, bluefish) was also disapproved because no evidence suggests that these species are overfished. For reconsideration of these disapproved net prohibitions, the South Atlantic Council voted to resubmit Amendment 3 at their June 19-23 (1989) meeting.

On May 22, 1989, Councils submitted Amendment 4 for Secretarial review. It was approved on June 31, and became effective October 14, 1989. This amendment adjusted the previous distribution of TAC for Atlantic group Spanish mackerel (76% commercial/24% recreational) into 50/50 shares. Councils proposed this readjustment to offset the negative impacts resulting from implementation of zero bag limits early in the fishing year. Councils contended that the previous division of TAC unfairly favored the commercial sector and the ratio was inappropriately derived from 1979-85 landings data. This period was perceived as a time of overfishing, increased commercial harvest, depressed recreational participation, and compressed geographical range for Atlantic group Spanish mackerel. As a result, allocations for the 1989/90 fishing year were adjusted to 3.24 (commercial) and 2.76 (recreational) million pounds, yielding a 54/46 ratio, closely approximating the 50/50 target level. Annual adjustment of allocations for the Atlantic group Spanish mackerel will continue until parity is achieved, or until 1994 when the 50/50 ratio becomes effective automatically.

Caribbean Queen Conch -- The fishery for queen conch is rapidly disappearing in waters under the jurisdiction of the Commonwealth and Territory, and the present fishery has moved offshore into the deeper waters of the EEZ. Therefore the Caribbean Council has activated the development of a Conch FMP for Puerto Rico and the U.S. Virgin Islands. Area closures, coupled with size limits, bag limits, and annual seasonal closures are among the measures under consideration.

Caribbean Shallow-Water Reef Fish -- An amendment to this FMP is currently being prepared, and this amendment has been an active discussion item at Council meetings during the year. The amendment primarily addresses the red hind--a grouper that is an important component of the reef fish complex. Measures are being proposed that would close areas where spawning aggregations occur from mid-December through February. The red hind fishery is on the verge of collapse and, since the amendment will not be in place by the forthcoming spawning season, the Council will request that the Secretary take emergency action to close an important spawning area by mid-December 1989.

Five Council Billfish -- Prepared a regulatory amendment to the Atlantic billfish regulations to extend the documentation requirements (necessary to certify that billfish possessed by a dealer or processor were not harvested from the management unit) to include species of Pacific billfish that are commonly imported to the U.S. In addition, the definition of "dealer" was revised and the scope of the regulations clarified. These revisions were necessary to enhance the enforceability of the regulations.

Secretarial FMP -- Prepared a Draft Secretarial Fishery Management Plan for the Shark Resources of the Atlantic, Gulf of Mexico, and Caribbean as requested by the five east coast fishery management councils. Initially, the plan will cap fishing mortality at the 1988 level. The draft plan will establish a commercial quota, a recreational bag limit, permit and reporting requirements, and prohibits "finning" (i.e., removing and selling only the fins and discarding the entire carcass). An annual assessment procedure will determine the appropriate catch levels

in the future. The draft plan will be distributed to the five councils for comment prior to holding public hearings later this fall.

Foreign Fishing -- Obtained certificates for 57 U.S. vessels to fish in waters covered by the Colombia/U.S. fishing treaty. Through F/IA, SER provided responses to the Department of State on two Colombian complaints of illegal activity by U.S. vessels. All certificate holders were advised of additional conservation measures proposed by Colombia for the treaty waters and the effects of those measures on fishing operations have been compiled for use in forthcoming negotiations with Colombia.

Permits -- Issued 2,634 consolidated mackerel, 725 swordfish, 108 reef fish and snapper/grouper, and 5 coral permits. Use of the consolidated mackerel permits allowed the Region to reduce the number of permits to fishermen by 2.23 times resulting in recurring savings of approximately $78,000 in paper, personnel, and other costs.

General -- In our first full year of operation under the Memorandum of Agreement between NMFS and NWS, the SER used NOAA weather radio broadcasts to announce nine fishery closures and three modifications/clarifications of TED rules. In each case, the requested broadcasts commenced at the selected coastal stations within a few hours of our request. The requested information was broadcast at approximately 30-minute intervals for as long as four days. Liaison with the Director, Southeast Region, NWS, has been outstanding. Information dissemination via this means has been a boon to fishermen and to enforcement agents.

Noting that the President's executive order extending the territorial sea of the U.S. to 12 nautical miles would necessitate modifications to the placement and labeling of offshore lines on coast charts, the SER initiated discussion with the Chief Geographer, NOS, and the GCOS representative on the interagency Baseline Committee. Our concern was to ensure that the labels on the charted offshore lines at 3 nautical miles (9 nautical miles off Puerto Rico, Texas and the Gulf coast of Florida) indicated that such lines were the inner boundary of the EEZ. As a result of informal discussions and correspondence through the Assistant Administrator for Fisheries to the Assistant Administrator for Ocean Services and Coastal Zone Management, the latest editions of NOS charts contain an explanatory note that the 9 nautical mile natural resources boundary off Texas, the Gulf Coast of Florida and Puerto Rico and the 3 nautical miles line elsewhere remain the inner boundary of the federal fisheries jurisdiction. The addition of this note assists fishermen, fishery managers and fishery enforcement agents.

MARINE RECREATIONAL FISHERIES

Southeast Regional Office representatives served on Marine Fisheries Commissions and state panels, Advisory Boards, Committees and multiagency and interagency work groups. These include South Atlantic and Gulf State/Federal Marine Fisheries Management Boards, Advisory Committees, Policy Committees, Executive Committees, Marine Recreational Fisheries Committees, Data Management Committees and others.

Assisted with the development of cooperative solutions to shared Marine Recreational Fisheries (MRF) problems through participation on the marine recreational fisheries and artificial reef committees of the Atlantic States Marine Fisheries Commission (ASMFC) and the Recreational Fisheries and Data Management Committees of the Gulf States Marine Fisheries Commission (GSMFC), Accomplishments include drafting/publication of the first coast-wide descriptions of Atlantic and Gulf marine recreational fisheries programs (state and federal) and agreement on a set of priority problems/issues that will be addressed by the Commissions. The ASMFC published a description of all artificial reef programs and an inventory of artificial reefs on the Atlantic coast.

A consensus plan was developed through a series of meetings of the GSMFC Recreational Fisheries and Data Management Committees to establish a cooperative state-federal marine recreational fisheries data collection program for the Gulf of Mexico.

Results of a MRF statistics initiative in which Marine Fishery Initiative funds were used to substantially enhance the MRF Statistics Survey in the Gulf of Mexico, have demonstrated to the states and others the National Survey's capability to provide more precise and timely data for fisheries management. This project has helped break down some of the resistance that has precluded NMFS and the states from moving ahead with a cooperative data collection program in the Gulf area. As a result, several initiatives, both Congressional and Executive, are underway to generate funds needed to provide for the long-term enhancement of the MRF data-collection program.

Assisted in preparing final draft of NMFS' Marine Recreational Fisheries (MRF) Action Plan and in obtaining review comments on the plan from MRF interests in the region. Fairly extensive but positive comments were transmitted to Washington to assist in preparation of the final version that will be published in the Federal Register this fall.

Convened a meeting of the Southeast Region's Marine Recreational Fisheries Steering Committee during which the Assistant Administrator for Fisheries discussed program and budget issues with key MRF representatives. From that meeting came an agreement to pursue enhanced dialogue with commercial interests on issues of mutual concern, especially habitat problems.

NMFS' Southeast Region has recognized the absolute necessity of launching an educational effort stressing improved angler ethics. We are working to obtain a more active and aggressive commitment to resource conservation from the marine recreational fishing community. Considerable progress has been made in developing the necessary tools to field a successful educational program. Achievements to date include:

1. Development of a series of educational materials designed to help anglers make better use of their catch, especially non-traditional target species that are frequently wasted. The series includes 16 species-specific brochures, 12 species-specific posters, a brochure encouraging the targeting of non-traditional species in fishing tournaments, and a cookbook entitled "Recipes With a New Catch - Cooking Non-traditional Fish." While these materials were initially developed under 1987 and 1988 Saltonstall-Kennedy (S-K) grants, they have been updated and are being reprinted under a 1988-89 S-K grant. Under this same grant, we completed a 28-minute video entitled, "Fishing for a New Catch" which encourages anglers not to waste and teaches them how to make better use of the full spectrum of fish they catch. This video has already been aired on prime-time public television in North Carolina and will be aired more broadly during the coming year.

2. Development and distribution of a brochure entitled "Fishing Facts for Recreational Anglers Fishing in Federal Waters of the Gulf of Mexico." The brochure informs anglers of applicable regulations and conservation efforts. To date, roughly 60,000 copies have been distributed, and updates are being prepared which will be printed "in-house." During the coming year, a similar product will be prepared for the South Atlantic area.

3. Development and distribution of 200 copies of a 28-minute broadcast quality video entitled "Pass It On" which teaches anglers how to safely and effectively release fish. Copies of the video and the accompanying public service announcements (PSAs), were provided at no cost to state fishery administrations, sea grant programs, marine fishery commissions, regional fishery management councils, and fishing clubs/organizations. In addition, 120,000 copies of a "NMFS Catch and Release Quick Reference Card" were printed and are being distributed. These cards are designed to be kept in tackle boxes and to remind anglers of the salient points of

successful catch and release fishing. The region also provided funds to NOAA Public Affairs to prepare and nationally distribute "Pass It On" and "Marine Debris" PSAs.

These catch and release products have been so well received that assistance is being provided to the Northeast and Southwest Regions (at their request) to produce similar videos for their areas.

4. Production of a five-video educational series designed to help tournament directors better plan, organize, judge and conduct fishing tournaments and to do it in a way that helps promote fisheries conservation and management. This series, entitled "The Tangle-Free Tournament," was produced under a Marine Fisheries Initiative grant in cooperation with the Florida Sea Grant Program and will be nationally distributed.

5. Initiation of an expanded gamefish tagging program focusing initially on large pelagics. This is a cooperative effort in which the tackle industry and conservation organizations highly publicize the program and provide awards for participating captains and anglers. NMFS and state agencies manage the scientific aspects.

Initiated in February 1989, the program should increase tagging efforts and help encourage non-consumptive angling by creating substantial "bragging rights" related to tag and release fishing. This program is called the "Tag-Flag Tournament" and covers the entire Atlantic coast, the Gulf of Mexico, Puerto Rico and the U. S. Virgin Islands.

6. Development of an Angler Code of Ethics and promotion of ethical angling through brochures, posters, and the media. Using a commercial artist, a 22" x 28" two-color poster and accompanying sticker are being printed to promote ethical angling and fisheries conservation. These posters will be displayed at marinas, tackle shops and other public places. Stickers will be distributed directly to anglers.

This project has been supported by key recreational fishing organizations, i.e. the Sport Fishing Institute and American Fishing Tackle Manufacturers Association. The support is so positive that the Northeast Region is providing funds to print additional copies for use in their region. With their involvement, we will be blanketing the entire Atlantic Seaboard, Gulf of Mexico, and Caribbean areas with these posters. Southeast Regional Industry Steering Committee met in January 1989 to provide the Regional Director and Assistant Administrator for Fisheries an opportunity to meet the Southeast Region fishing industry leaders.

HABITAT CONSERVATION

The habitat program of the NMFS, Southeast Regional Office (SER), is carried out by the Habitat Conservation Division (HCD) for management functions and the Southeast Science Center for research functions. The two units coordinate closely to insure that the needs and direction of both components are met. The NMFS mission is to conserve fishery habitat so that fishery resources of benefit to the people of the United States would continue to be produced. Authority to conserve habitat is provided for mainly by the Fish and Wildlife Coordination Act, the Magnuson Fishery Conservation and Management Act, the Marine Protection Research and Sanctuaries Act, the Endangered Species Act, the Marine Mammal Protection Act, the Clean Water Act, and the National Environmental Policy Act.

Most of HCD's efforts are geared toward the conservation of coastal habitats, based on findings of our researchers demonstrating the relationships between habitat and fishery production. Many estuarine-dependent species of fish and shrimp require estuaries at some part of their life cycle. About 96% of commercial and 70% of recreational fishery

resources within the SER rely on estuaries or nearshore coastal habitats. These resources provide significant economic and social benefits. For example, commercial fisheries contribute $5.5 billion annually to the economy while recreational fishermen spend more than $13.5 billion per year to pursue their sport. In addition to food production, wetlands and coastal habitats provide many other useful benefits such as storm protection, flood prevention, erosion protection, aesthetics, waterfowl and furbearer production, recreation, and other benefits, but these values are largely are unquantified. Some economists have attempted to provide some estimates of values that can be as high as $82 thousand per acre per year.

The SER covers eight coastal states from NC to TX, and includes PR, and the USVI. More than 2,799 miles of coastline, 29,900 miles of tidal shoreline, and 300 estuarine systems are located here. The estuaries contain about 17.2 million acres of marsh and other estuarine habitat and 5.1 million acres of intertidal areas comprising about 83% of the coastal wetlands in the coterminous U.S. The SER contains almost all of the nation's mangrove swamps and most of the seagrasses.

Despite their great importance in the production of fishery resources, wetlands continue to be lost. The reasons are varied, but man-induced perturbation account for a significant amount of the coastal wetland loss rate estimated nationally at 20,000 acres per year. In states such as Louisiana the loss rates are much higher and approach 40-50 square miles per year. Since NMFS is the lead federal agency responsible for the management of the nation's living marine resources, habitat conservation is very important to the agency. Based on this concern the NMFS developed a Habitat Conservation Policy in 1982. This policy established 12 strategies that would be used to conserve habitat. These strategies include work under the following categories:

Research and Management Coordination
Habitat-related Research
Coordinate Habitat Issues with
Fishery Management Councils
Fish and Wildlife Coordination Act
Activities
Assisting States
Interagency Agreements
Anadromous Fish
Preapplication Planning
Integrating Programs
Intra NOAA Cooperation
Regulatory Relief
Communicating Habitat Information

We have determined that in the SER, based on the size of the staff and funds, the habitat conservation goals of the agency could best be met by concentrating on Implementation Strategies 1-4. We especially focus on No. 4 which calls for direct involvement with the wetland regulatory and civil works programs of the Corps of Engineers (COE). In the SER we are the only federal agency that reviews all of the permit proposals to alter coastal wetlands. Other agencies have had to scale back due to manpower limitations and other priorities. We review more than 56% of all permit requests and federal projects handled by NMFS in the entire U.S.

The need to review individual proposals to alter wetlands by private and Federal interests has been well documented. For example, nine years of data collection indicates that the more than 9,148 projects would have altered almost 684,000 acres of wetlands. Involvement by fish and wildlife agencies could potentially have conserved almost 372,000 acres with mitigation of nearly 177,000 acres. Much of the 684,000 acres proposed for alterations included very small projects that eventually result in a piecemeal loss of large acreages of wetlands. Additionally, we

estimate that our preapplication interactions with private, local, state, and federal development interests result in the conservation of thousands of additional acres of wetlands each year.

The above discussion is generic, but additional detailed information is available in publications which highlight SER program functions and accomplishments. For a list of publications, contact the Habitat Division at the Regional Office.

PROTECTED SPECIES

Emergency regulations for 240 days were implemented March 1, 1989, to protect endangered Kemp's ridley and other sea turtles in north Florida and south Georgia. This action was necessary because of a massive stranding event in October - November 1988. Regulations were issued, in part, as a result of a special meeting of sea turtle experts which recommended emergency protection measures.

Several analyses of sea turtle stranding, mortality and distribution data were completed to assist the Secretary in evaluating several alternatives to TEDs in response to violent protests by the shrimp industry. These analyses concluded that TEDs appeared to be the only viable alternative to effectively reducing sea turtle mortality from shrimping.

Technical assistance was provided to NOAA General Counsel and the Justice Department for legal defenses of the Secretary's action on the TED regulations. Although a legal challenge to the Secretary's action was upheld, repeated challenges to overturn the Interim final rule were denied.

Numerous notices were provided to fishermen of the changes to the TED regulations. These were conveyed through news releases, media contacts, communique's to Sea Grant, State's and commercial fishing organizations.

Sea Turtle Recovery Teams were established, in cooperation with the Fish and Wildlife Service, to prepare recovery plans for green/loggerhead, hawksbill/leatherback and Kemp's ridley sea turtles. Drafts of the plans are almost complete. Final plans should be available in early 1990.

A blue ribbon panel of sea turtle experts was established to review and evaluate the NMFS Kemp's ridley headstart program. A report was completed in September 1989. The panel recommended continuation of the program for 10 years, with a caution that at-sea mortality of the species was a limiting factor in the success and evaluation of the program. This was the first time an outside peer review was conducted of the experimental program.

Sixty-six informal and eighteen formal ESA Section 7 consultations were conducted during the reporting period. These consultations were principally with the Minerals Management Service (MMS) for oil rig removals, the Army Corps of Engineers (COE) for channel dredging operations, Fishery Management Plans and military activities. In the most sensitive consultations, observers and mitigating measures were incorporated to document and reduce sea turtle and marine mammal takes.

As an outgrowth of the Section 7 process, coordination meetings and conferences were held with or sponsored by the COE, MMS, Navy and EPA. As a result, these agencies are conducting cooperative research with NOAA Fisheries to quantify endangered species interactions and develop methods or procedures to reduce take. Some notable events were commitments ($500K) by MMS to study the relationship of sea turtles and oil rigs, a commitment of $1 million annually by MMS to study sea turtles and marine mammals in the Gulf, studies by the COE to modify dredge drag heads to reduce the take of sea turtles and channel surveys in relation to dredge related takes.

The new amendments to the MMPA to certify appropriate commercial fishing vessels and document incidental takes of marine mammals were implemented. All S.E. fisheries have been categorized. One hundred ninety-nine vessels in the longline fishery have been issued exemption certificates and vessel/fishermen information has been computerized. A system is in place to enter incidental catch data. An effort is in progress, in cooperation with other regions, to treat drift gill netting operations consistently nationwide.

Approximately 30 applications for permits for endangered species, marine mammal research and conservation were reviewed and commented on.

The take of 20 bottlenose dolphins for public display/research were monitored. Information on dolphin swim/feeding programs was developed for legal and policy decisions on these programs which are potential violations of the MMPA. These programs are increasing in the southeast.

Ten news releases on the TED regulations and the MMPA amendments were issued during the reporting period. Two amendments for NOAA Weather Radio were developed on the status of the TED regulations.

Four planning meetings were held with Sea Grant, the commercial fishing industry, the Foundation and environmentalists to coordinate TED Technology Transfer and TED certification activities. MARFIN and S-K cooperative agreements are in place ($535K - $327K) with the Foundation to conduct TED activities. The Foundation is the funding contact vehicle with industry and Sea Grant for TED activities.

A combined NMFS/Fish & Wildlife Service sea turtle program plan was developed and is under implementation. A program planning meeting to formulate the FY90 plan has been scheduled.

PRODUCTS AND SERVICES

Distributed nine Newsletters and 41 News Releases about Southeast Region programs and activities.

Prepared a Southeast Region Directory which is available from the Regional Director's Office.

ECONOMICS UNIT

There was a restructuring of economics in the southeast to focus on managed species. One direct product is the southeast's major role in rewriting the NMFS guidelines for Regulatory Impact Reviews and it is fully expected that these guidelines will improve the RIR's written by Council economists not only in the southeast, but in all other Councils as well. A major service being provided by economics is to work closely and extensively with the two new staff economists of the Gulf and South Atlantic Councils and to provide more direct support to the Caribbean Council whose budget limitations preclude the hiring of an economist.

The Economics Unit in the southeast worked closely with universities throughout the southeast to outline the economics priorities and encourage the submission of project proposals for MARFIN and S-K and then to provide close project management and oversight including conduct of reviews of final reports from these projects. Recent outputs included recreational demand studies for red drum and king mackerel and a study for the mixed species gill net fishery. Economics is working closely with the managers of recreational and commercial data bases at the national and regional levels to improve the accuracy, timeliness and coverage of fishery

dependent data collected and managed by NMFS. The Economics unit produced a number of Technical Memoranda. Plans are to do directed research on mackerels, shrimp, reef fish and shrimp by-catch.

COMPUTER OPERATIONS UNIT

Ad-hoc requests were received throughout the year which Computer Operations provided data, including the following:

Coast Guard:
- -commercial and media addresses from Constituency List
- -mackerel permit holders S-K Project Participant:
- -enforcement data Southeast Fisheries Center:
- -permit data
- -constituency list data

Computerized applications utilizing databases, word processing, desktop publishing, and graphics were created for recreational fishing clubs directory, Gulf and South Atlantic seafood companies directory, sellers and buyers of shark products, constituency mailing list, and six technical memorandums authored by the regional office economists.

INDUSTRY TRADE

The Southeast Region continued de-emphasis of market development and trade related activity by transferring two of the four remaining trade analysts to the directorate staff to assist with recreational fishery constituency affairs. One of the remaining senior trade analysts was transferred from Little Rock, Arkansas to Pascagoula, Mississippi to better service the trade related interest of the coastal marine fisheries. The remaining trade analyst in St. Petersburg has begun functioning as an information clearing house for the many calls received from various constituencies seeking information on fishery development and trade issues. The Trade Analysis Branch provided analytical support to bilateral negotiations with Taiwan resulting in a significant across the board tariff reduction in a number of fishery products. Similar information has been developed for trade negotiations with Japan and South Korea, but with less spectacular results. The current level of effort devoted to trade analysis in the Southeast Region is now in line with agency guidance and completes a two-year plan for redeploying the substantial market development and trade staff.

GRANTS

The grant programs in the Southeast, intended for implementation by the Southeastern states, Puerto Rico, and the Virgin Islands. include the Interjurisdictional Fisheries Act (P.L. 99-659), the Anadromous Fisheries Act (P.L. 89-304), SEAMAP, and the Cooperative statistics program. The Marine Fisheries Initiative Program (MARFIN) was designed to recover and maintain Gulf of Mexico fisheries. The Saltonstall-Kennedy program (S-K) is a national research and development program directed at fisheries and processing problems. The Southeast Region provides program officers for all of the above mentioned programs.

INTERJURISDICTIONAL (IJ) AND ANADROMOUS FISHERIES

Administered 13 IJ and seven Anadromous fisheries grants. The Regional Office assisted 11 coastal recipients of Interjurisdictional Fisheries Act financial assistance in the Southeast to

develop and conduct high quality projects to develop and apply data bases and techniques for the conservation management and enforcement of regulations for territorial sea and EEZ stocks of mackerel, drum, snapper/grouper, oysters, crabs, shrimp, groundfish, flounder, shellfish, baitfish. Seven state and university recipients of Anadromous Fish Conservation Act funding developed and conducted high priority projects for the conservation and management of striped bass, Atlantic sturgeon, shad and herring.

State grantees in Louisiana and Texas continued projects to rehabilitate public oyster reefs damaged or destroyed by a national disaster.

The Regional Office initiated workshops and began development of guidelines to enhance the ability of state recipients of nondiscretionary grants fund to develop and conduct high quality financial assistance programs.

The Regional staff participated in a nationwide financial assistance workshop to develop methodologies to guide states, universities, commissions, councils, and commercial and recreational recipients of nondiscretionary assistance to provide a data base and scientific techniques to better manage and utilize Territorial Sea, EEZ, and Interjurisdictional fisheries.

Developed historical records for all funds distributed to states for the 20-year period of the Commercial Fisheries Research and Development Act grants program (precursor to IJ Act).

Coordinated the Wallop/Breaux program for marine recreational fisheries with the Fish and Wildlife Service--FWS and the coastal states. Established excellent working relationships with FWS and states in administering this program.

The Southeast Area Monitoring and Assessment Program (SEAMAP) This program is a state-federal-university program to collect, manage, and disseminate fishery-independent data and information. State/Federal planning efforts are standard at the Center. The annual SEAMAP operations plans were developed in conjunction with the three SEAMAP Committees, and in addition, a Five-year Management Plan for the entire SEAMAP program is being developed. Ten projects were funded.

STATE/FEDERAL STATISTICS PROGRAM

The statistics programs provide data on the amount and type of fish caught within the region.

The State/Federal Statistics program was reviewed at meetings of the Fisheries Commissions data management/statistics committees. Ten projects were selected.

MARINE FISHERIES INITIATIVE (MARFIN)

The Regional Office hosted the First MARFIN Conference in Tampa, Florida, to review and disseminate the progress of the MARFIN projects. MARFIN has produced information critical to the management of several Gulf of Mexico fisheries - particularly those in decline such as red drum and king mackerel, those requiring development such as coastal herring and deep sea crabs, and those involving user conflict such as reef fish and the turtle - TED (turtle excluder device) issue in the shrimp fishery.

The Southeast Region developed the Federal Register Notice announcing the request for applications for FY 1989. This notice gave the research and development priorities based on

input from states, universities, the commercial industry, the recreational community, the Gulf Council, the Gulf and South Atlantic Fisheries Development Foundation, the Gulf Commission, and from NMFS scientists. Representatives of these groups (the MARFIN Board) also recommended to Dr. Angelovic the MARFIN proposals best suited for funding.

Twenty-four of the 59 MARFIN proposals were selected for funding. Seven multi-year projects were continued. In addition, ten NMFS projects were chosen for completion in FY 1989.

The Executive Summary to the MARFIN Annual Report is available from the Regional Office Grants Unit.

SALTONSTALL-KENNEDY (S-K)

The Southeast Region received 59 proposals in response to the FY 1989 S-K solicitation. The regional S-K panel, considering both internal and external technical reviews, selected 22 projects as candidates for funding, eliminating 63% from further consideration. Through the new solicitation and by guidance provided to the regional panel, the research and development emphasis in the Southeast Region was shifted dramatically from the expansion of harvesting technology to stock assessment projects in support of more informed fishery management; together with seafood handling and processing studies designed to improve product quality and protect consumer interests. Market development and trade related projects have all but disappeared from the Southeast Regional S-K program. As the largest single S-K grant recipient in the region, the Gulf and South Atlantic Fisheries Development Foundation's current audit by the Office of the Inspector General has been a major concern requiring substantial regional office involvement. With the exception of certain cost disallowances identified in the IG's draft report, there were no significant adverse findings related to wrongdoing. The Foundation has since responded to the IG's draft report protesting most of the disallowances and the final resolution of this issue will not occur within this reporting period. Continuing NOAA administrative problems with Foundation's cost allocation practices appear to have been successfully resolved and the Foundation is currently responding to NOAA's administrative guidance in restructuring its cost allocation plan and certain other administrative matters. It appears that the Foundation will be able to continue now to process its 1988 and 1989 awards. During this reporting period, three carryover cooperative agreements from other years were successfully closed out, thus setting the stage for an improved and simplified Foundation accounting system.

DEVELOPMENT AND TECHNOLOGY TRANSFER

A TED testing and certification policy was developed. An industry/government panel was established of gear experts to evaluate new TED ideas and arranged for TED protocol development and certification testing using headstarted turtles. Development of an alternative testing protocol was necessary due to an absence of turtles in the Canaveral channel in an earlier certification trial.

Participated in Regional Response Team (RRT) meetings for oil and hazardous materials. Wrote technical memorandum on the economic gains and/or losses associated with dissemination of information on public health and safety issues. Conducted economics survey and otherwise assisted Headquarters with economic aspects of the study to develop a new inspection system (HACCP/MSSP).

As a member of the Florida and Gulf-wide Beach Clean-up Steering Committees, assistance was provided to plan and conduct two clean-ups in which numerous other NMFS employees actively participated. The Florida clean-up, held April 8, was the most successful clean-up ever held -

over 12,000 volunteers rid 966 miles of shoreline of over 307 tons of trash. Personnel continue to distribute materials, especially to the fishing community, to educate them to the problem of plastic pollution and to advise them of their responsibilities and liabilities under new federal laws.

OFFICE OF ENFORCEMENT

In Fiscal Year 1989, the Southeast Law Enforcement Office investigated 730 violations of laws and regulations within National Oceanic and Atmospheric Administration's (NOAA) jurisdiction. Fifty-seven percent (57%) of the cases were initiated by U.S. Coast Guard and 19% state). Seized property had an estimated value of $327,000. This report summarizes the type of investigations conducted and the National Marine Fisheries Service (NMFS) agent manhours expended during FY '89.

SOUTHEAST FISHERIES CENTER

Research at the Southeast Fisheries Center (SEFC) directly supports Federal laws and international agreements regarding living marine resources and provides scientific and technical information to numerous fishery management, development, and research organizations along the Atlantic, Gulf of Mexico, and Caribbean seaboards. Databases archived at the SEFC document catch, effort, and biological characteristics of commercial and recreational species for decades. These data and the useful information derived through their analyses are the foundation of scientific management and conservation of the species.

Activities of the SEFC in fiscal year 1989 focused on recreational and commercial groups of species within the region. Most often, these groupings corresponded to those employed by regional fishery management councils to monitor stock characteristics and conditions. SEFC species groups included: Latent Resources, Mackerels, Menhaden, Molluscan Shellfish, Oceanic Pelagics, Protected Species, Red Drum, Reef Resources, and Shrimp.

LATENT RESOURCES

Activity in 1989 concerned several areas that continued and applied previous work. Four research cruises were conducted to survey coastal herrings and evaluate gear. Extensive biological and environmental data were collected. During one cruise, a hydroacoustic/trawl survey was conducted in the northeastern Gulf of Mexico, employing a Digital Echo Integration System.

A semi-pelagic trawl was evaluated and purchased, and will be used to capture midwater targets noted by the hydroacoustic system. A self-propelled remotely operated vehicle (ROV) was acquired to replace the towed submersible, MANTA. The ROV will be used to identify midwater acoustic targets and to study fish reaction to gears.

The survey data base was reviewed, and the trends in catch rates of several coastal herring species and Gulf butterfish were summarized. An analysis to relate the distribution and abundance of 17 coastal herring species to a suite of environmental parameters was completed. Previous work on such relationships was used to develop a model that combined environmental data and satellite thermal data to predict areas in the Gulf that have a high probability of containing butterfish. This model was tested by placing hardware on commercial vessels to transfer processed satellite images and predicted butterfish locations. For most of the cases examined, large catch rates were located on the shallow and cool side of a thermal front, and

displaced by 2 to 10 km from the highest confidence factor areas predicted with the model. Further expansion of the system to include other fish species is underway.

Fishing effort directed at Gulf butterfish was much reduced from 1988 levels. Most Gulf vessels that entered the fishery in 1988 switched to other species as a result of market saturation.

Observers were placed aboard butterfish trawlers. The incidental catch of reef fish, other recreational species and other commercial species was small.

Building renovations were made for the experimental fish processing laboratory, and equipment was transferred from the Charleston Laboratory. Surimi production equipment was also procured from a pilot plant in Reedville, Virginia.

Studies on the effects of on-board handling methods on the quality of butterfish and on the proximate chemical composition and fatty acid contents of several coastal herring species were completed by the Charleston Laboratory. A comparison of the levels of infestation of a cestode between Gulf and Atlantic butterfish was completed. The infestation levels in Gulf fish was much higher than levels in Atlantic fish. The presence of cestodes in gulf fish has affected their marketability in Japan. Recent information, however, indicates that this is no longer a problem.

COASTAL PELAGICS (MACKERELS)

Biological research on stock identification, movements and migration, distribution and abundance, and early life history in support of management of the stocks continued. During the past year, several noteworthy results were attained:

1. Results of several studies were integrated into a single manuscript that described the basis for suggesting that two stocks of king mackerel occur in the Gulf of Mexico.

Mark-recapture studies resulted in over 2,000 king mackerel tagged and released off southeastern Florida and over 500 king mackerel tagged and released off the Mexican coast in the southern Gulf of Mexico. These studies are designed to learn the nature of the stock structure in these areas.

A charterboat survey of the southeastern United States recorded data from over 5,700 fishing trips on which over 17,500 fishing hours of trolling and over 11,300 fishing hours of non-trolling were conducted. The major species caught by trolling were coastal pelagic fishes, while the major species caught by non-trolling were reef fishes.

Early life history studies indicated that frontal zones of the Mississippi River plume enhanced survival and growth of mackerel larvae by concentrating plankton. Feeding opportunities were better in the frontal zone. This led to faster and larger growth of mackerel larvae, which in turn, may have favored recruitment.

Databases on vital statistics, landings and catch-effort were expanded to include cobia, dolphin and bluefish as well as king and Spanish mackerel. These databases were used in assessing the status of stocks and in determining acceptable biological catches. From these data, fishery management councils have established total allowable catches within the ranges of the acceptable biological catches as follows: Gulf king mackerel, 4.25 million pounds; Gulf Spanish mackerel, 5.25 million pounds; Atlantic king mackerel, 8.3 million pounds; and Atlantic Spanish mackerel, 5.0 million pounds. The councils then allocated these total allowable catches to the commercial and recreational fishermen.

MENHADEN

Research on ecology and assessment of menhaden stocks and fisheries is centered at the Beaufort Laboratory. Data collection and research projects span virtually all the Gulf and Atlantic coastal states. Ecology and dynamics of early life stages, juvenile abundance and habitat associations, fishery forecasts and stock assessments, monitoring the purse seine fishery for landings and age and size of fish in the catch, and providing scientific advice to the states, industry, and fishery management institutions are included in the program.

The Charleston Laboratory conducted research on the development and application of fisheries technology to increase export and direct domestic consumption of menhaden products. Major goals are the increased use of menhaden oils plus the development of minced and surimi products from menhaden (also see Product Quality and Safety Section).

MOLLUSCAN SHELLFISH

This years activities included: (1) conducting research to ascertain if depuration could be used to inactivate enteric viruses and improve methods for detection of enteric viruses; (2) reviewing and monitoring numerous Sea Grant, S-K and MARFIN proposals; (3) assisting FDA in conducting research grants; (4) initiating a National Water Quality Indicator Study; and (5) representing the agency as the voting member of the Interstate Shellfish Sanitation Conference.

OCEANIC PELAGICS

As in past years, the major thrust of the program was the monitoring of landings of oceanic pelagics for catch, effort and size-frequency. This included sampling landings and trans shipments in Puerto Rico, the maintenance of a large billfish tournament-sampling activity, hiring of seasonal employees to cover high billfish landing areas in the southeast, and support of a sampling program run by the NMFS Northeast Fisheries Center for telephone interviews and dock-side sampling from Virginia through New England. Substantial analytical effort was put forth on the assessment of the swordfish stock in 1989, with completion of two major assessments: one sponsored by NMFS and a second through ICCAT. Assessment of Atlantic bluefin stock status was also assessed through ICCAT.

PROTECTED SPECIES

Sea Turtles

A total of 14,655 headstarted Kemp's Ridleys were released into the wild since February 1979. As of April 1990, 671 were recovered. Primary recovery locations included Texas, Louisiana and Florida. The principal recovery methods were strandings and incidental capture in shrimp trawls. Most recoveries occurred during April, May and June.

A new facility to replace the one damaged by Hurricane Gilbert was completed at Galveston Laboratory. The new facility is capable of withstanding winds up to 180 mph.

The Sea Turtle Stranding Network, encompassing coastal areas from Maine through Texas, and including portions of the U.S. Caribbean, continued to compile data to the centralized data base. During 1989, a total of 2,158 reports were received. Loggerhead turtles comprised about 70% of the total reported strandings, green turtles comprised almost 20%, Kemp's Ridleys about 7%, and leatherbacks almost 3%.

In 1989, the Beaufort Laboratory initiated the second year of research jointly funded by the U.S. Fish and Wildlife Service and the NMFS to evaluate the distribution and abundance of sea turtles in North Carolina inshore waters. Both aerial surveys and cooperative tagging with commercial shrimp fishermen were used. Aerial surveys provided abundance information and tagging provided information on distributions.

NMFS and the U.S. Corps of Engineers initiated a Fredredge Trawl Survey in Corpus Christi and Aransas Bays. These bay systems are in close proximity of the headstarted Kemp's Ridley release sites.

Monthly sampling to characterize amounts and types of marine debris accumulating on the upper Texas and southwest Louisiana beaches continued. Plastics of various types dominated the samples in weight and number of items collected.

NMFS, in cooperation with the shrimp industry, collected preliminary data for selected shrimp fishing areas in the southeast to document catch rates of shrimp in TED-equipped trawls and in trawls without TEDs. Observers were placed on shrimp vessels operating off Texas, Louisiana, Florida, Georgia and South Carolina. The Pascagoula Laboratory continued its efforts to develop expertise in TED technology and to distribute TED information to the industry.

A fishery independent study of turtles is being conducted in the northeastern Gulf of Mexico at Cedar Key, which historically supported a green turtle fishery. The Kemp's Ridley is the target species and is the most frequently captured species in the area. Turtles captured incidentally in fishery activities are being tagged.

Marine Mammals

The SEFC staff completed an analysis of regional aerial surveys of marine mammals of the Gulf of Mexico. These extensive surveys were conducted during 1983-86, and covered the area from the shore out to the 100 fathom isobath (about 359,000 km2). The primary objective of the project was to estimate region wide abundance of bottlenose dolphins. The study area was depth stratified into three zones: bay (waters of embayments and/or shoreward of barrier islands), inshore (waters other than bays out to the 18.3 m isobath), and offshore (waters from the inshore zone boundary to the 183 m isobath). It was estimated that on average 35,000 to 45,000 bottlenose dolphins may live in the study area. The majority of these animals appear to inhabit waters of the offshore zones. The average density of dolphins (dolphins/km2) by zone in the northeastern region (bay 0.117, inshore 0.162, offshore 0.167) were about twice that of the northwestern region (bay 0.061, inshore 0.069, offshore 0.085).

A review of the SEFC Marine Mammal Program occurred during May, 1989. The review team consisted of SEFC staff, contractors, and included representatives from the Marine Mammal Commission, NMFS Office of Protected Species, NMFS Marine Mammal Laboratory, and NMFS NEFC. The team reviewed the activities of the program, which was initiated in 1979, and made recommendations for new and continuing research. The review team gave highest priority to the development of population monitoring data sets obtained through long-term research projects. A report of the review was published, and includes an annotated bibliography of all documents which have been produced by the program or by research funded by the program.

The SEFC completed a pilot study (with funding from the Minerals Management Service) during the summer and fall of 1989 that used aerial surveys to examine the distribution and diversity of cetaceans in four deep water areas in the north-central Gulf of Mexico. These areas had water depths ranging from about 200 m to over 1800 m. The surveys resulted in 113 sightings (about 2,900 animals) of 11 species of identified cetaceans. Sperm whales (Physeter macrocephalus) and spotted dolphins (Stenella frontalis or S. attenuata) were the most frequently sighted with 27 sightings each (of 63 whales and about 1,260 dolphins).

RED DRUM

During the past year, NMFS continued to analyze information on the status of stock on red drum in the Gulf of Mexico, and to monitor MARFIN contracts for the collection of data on stock structure, catch, effort, and size frequency, and on mark/recapture studies to determine juvenile mortality in state waters.

A red drum assessment was provided to the Gulf of Mexico Fishery Management Council in May of 1989, updating information through 1988. The assessment resolved discrepancies between the apparent extent of juvenile abundance in estuaries and adult stocks offshore. The assessment documented a substantial decline in recruitment to estuarine nursery grounds starting in the mid-1970s. Juvenile recruitment has declined about 74% since that time. The assessment also improved the characterization on growth patterns of red drum in the Gulf of Mexico.

REEF RESOURCES

Research efforts were expanded to improve monitoring of the fisheries throughout the region, to evaluate the effectiveness of regulations, to assess the status of selected reef fish stocks in the Gulf of Mexico and off the southeast Atlantic coast and to examine changes in populations as the result of human activities.

Gulf of Mexico commercial reef fish landings continued an overall decline through 1989. Overall snapper landings continued their decline since 1983. Red snapper landings were at an all time low while yellowtail and lane snapper landings were at record highs. Yellowtail snapper landings have increased for four consecutive years. Vermilion, gray, and mutton snapper and amberjack landings were relatively constant. Combined grouper landings were relatively constant although declining for the fourth consecutive year in the Florida Keys. Several assessment activities were conducted in support of the Gulf of Mexico Fishery Management Council's effort to update the Reef Fish Management Plan. These included and assessment of gulf red snapper and quarterly ALARM reports which provide estimates of reef fish landings. Dockside samples of commercial catches were expanded through the TIP program with MARFIN funding.

An investigation on the ability of artificial reefs to attract fishes or produce new fishes was conducted on experimental concrete modules off Miami.

A report was generated investigating the potential of permanent marine fishery reserves to be used for reef fish management for the South Atlantic Council.

Research was conducted on the effects of fish trap mesh sizes on the catch and size of reef fishes. Changing mesh size affected the catchability for various species. Publication is "In Press".

Research into recruitment mechanisms among the SEFC, SEAMAP, CIMAS, Polish Plankton Sorting Center and MEXUS-Gulf focused in three areas: (1) ocean pelagics, emphasizing bluefin tuna; (2) reef fishes; emphasizing snappers, groupers and grunts; and (3) larval fish ecology, emphasizing their interactions in oceanic waters.

Headboat surveys continued with collection methods being changed so that hand recording was virtually eliminated for some data sets. Electronic balances linked to an electronic measuring board allowed recording of fish length without resort to pen and paper as well as recording of weight, species, location and other accessory information for over 1,500 fish without unloading.

Assessment and monitoring research on stone crab and spiny lobsters continued. Data collection programs include spiny lobster commercial size frequency, landings data collection and stone crab landings and trip-ticket monitoring.

SHRIMP AND BOTTOMFISH

Shrimp and bottomfish research efforts were directed towards evaluating the impact of closures, obtaining information on the biology and ecology of major shrimp and fish species, and collecting recreational and commercial catch and effort statistics to provide necessary scientific information for management purposes.

Shrimp landings were mixed in 1989 as compared to 1988 when all Gulf states recorded declines over the previous year. Louisiana led all Gulf states with 100.4 million pounds (down 2%), Texas was next with 83.0 million pounds (up 4%), followed by Alabama with 16.7 million pound (up 16.8%), Florida (west coast) with 15.9 million pounds (down 5%), and Mississippi with 15.7 million pounds (up 27%). Pink shrimp landings in statistical areas 1-9 have declined each year since 1985. Landings in 1985 were 15 million pounds and in 1989 they were only 5.7 million pounds.

Results of stock assessments dealing with the 1960-1987 commercial catch statistics indicate 1) brown shrimp and white shrimp recruitment in the Gulf of Mexico have generally increased over the 28-year period, 2) pink shrimp recruitment has been stable for most of the period but has shown declines in recent years, 3) no change in the sizes of parent stocks is apparent over the last three decades for any shrimp stock in the Gulf of Mexico, 4) no stock-recruitment relationships can be demonstrated for brown shrimp or pink shrimp, and 5) even though an apparent stock-recruitment relationship was observed for white shrimp, factors unrelated to fishing could be causing the relationship.

Brown shrimp harvest from offshore Texas was forecast to be 23.1 million pounds for the 1989-1990 season, 15% lower than the historical average of 27.0 million pounds. Prospects for the combined inshore-offshore Louisiana brown shrimp harvest for waters west of the Mississippi River were forecasted to be 43.7 million pounds, 64% above the long-term average of 26.7 million pounds. Prospects for the 1989-1990 Tortugas pink shrimp fishery were forecasted to be 4.5-5.8 million pounds, lower than the previous two years (6.5 million pounds each), and well below the long-term average of 9 million pounds.

During the springs of 1989 and 1990, recruitment of postlarval brown shrimp to Galveston Bay and Aransas Bay was examined. These studies evaluated variability in recruitment associated with different coastal locations and different environmental conditions. The results will assist NMFS in refinement of monitoring and sampling designs, in understanding environmental effects on recruitment success, and in evaluating the utility of the Galveston-based historical postlarval shrimp data for predicting the Texas Gulf brown shrimp harvest each year.

STATISTICS AND DATA MANAGEMENT (SDM)

The Statistics and Data Management Office is responsible for fishery statistics and information management for the Southeast Region. For 1989 statistical data on landings, effort, and catch composition were collected, processed, and archived and the information made available to scientists, administrators, and the public. The Southeast Fisheries Center manages the Cooperative Statistics Program and provides grant-in-aid funds for its support. This Program is participated in by NMFS, and includes the five Gulf of Mexico States. The Program coordinates state and federal efforts to collect statistical data on regional fisheries so as to minimize duplication and to provide the full range of technical information needed for management and regulation of fisheries. Information management (computer) services for research and analysis of data were provided to scientists, managers, and cooperating individuals and agencies. The SEFC operated a regional telecommunications - mainframe computer system, provided programming and software development services, and implemented NOAA policies and procedures on automatic data processing. The statistical information and services of the Office were used by fishery management councils and the agency to manage the fishery resources in the southeast region.

FISHERY HABITAT

Research emphasis during 1989 was on (1) the distribution and abundance of larval and juvenile fishes, and factors influencing larval growth and survival; (2) mapping and characterization of habitats supporting finfish and shellfish; (3) evaluation of mitigation methodologies and the impact of alterations on habitat quantity and quality; (4) and research on feeding habits and predator-prey interactions.

Research at the Beaufort and Galveston Laboratories included recruitment to estuaries; use of various wetland habitat types as a measure of relative habitat value; predator-prey interactions; uses of detrital material; evaluation of impacts of pollution; the functional value of mitigated and created wetland habitat, both seagrasses and salt marshes; and synthesis of information on wetland acreage and fishery species life histories.

PRODUCT QUALITY AND SAFETY

Research concerning quality and safety of seafood was centered at the Charleston Laboratory with cooperative research and communication interfaces with state and federal regulatory and environmental agencies. Specific areas of research concerned the production and distribution of fish oil base test materials in cooperation with NIH, FDA, and ADAMHA; establishment of an Experimental Processing Laboratory in Pascagoula, Mississippi, as part of an agreement with Mississippi State University; nutritional and quality evaluation; forensic activities concerning identification of endangered species and studies to distinguish wild from cultured fish; chemical and microbiological contamination of fish and shellfish; and identification of marine biotoxins.

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

Annual Progress Report
CY 1989 Administrative Cooperative Agreement No. NA89-WC-H-FC071
January 22, 1989 through December 31, 1989

NMFS Status Report on Rules Implementing Fishery Management Plans (FMPs)

During the first quarter, NMFS closed the recreational and commercial fisheries for Atlantic Spanish mackerel, Atlantic king mackerel and Gulf king mackerel when 1988-89 quotas were exceeded.

NMFS reopened the boot area of the Tortugas Sanctuary to shrimping in the second quarter; NMFS closed the boot area of the Tortugas Sanctuary to shrimping in the third quarter.

NMFS published notice of availability for Mackerel Amendment 4.

NMFS partially disapproved Mackerel Amendment 3.

NMFS published TACs (total allowable catches) for Gulf and Atlantic king mackerel for 1989-1990.

NMFS published notice of availability for Reef Fish Amendment 1 and Spiny Lobster Amendment 2.

NMFS published notices of control dates for entry into reef fish and shark fisheries.

NMFS approved Reef Fish Amendment 1 and Spiny Lobster Amendment 2.

NMFS prepared a draft Shark FMP.

NMFS closed the western zone king mackerel commercial fishery.

Council Action on FMPs

BILLFISH FMP

Intercouncil committee considered alternative management measures for Amendment 1 during the second quarter.

The Council took action on alternative management measures for draft Amendment 1.

CORAL FMP

NMFS ruled that the FMP was not consistent with the overfishing requirements of 50 CFR 602.

GROUNDFISH FMP

Council instructed staff to begin preparing an FMP for butterfish.

MACKEREL FMP

During the first quarter the following actions were taken:

- Amendment 3 was submitted to Secretary for implementation. Final Amendment 4 was completed, reviewed by Council and submitted to South Atlantic Fishery Management Council.

- The stock assessment group reviewed catch information, assessment procedure and overfishing definition for Spanish and king mackerel.

- The Council continued review of options for Amendment 5.

During the second quarter the following actions were taken:

- Amendment 4 was submitted to Secretary for implementation.

- The stock assessment group information was reviewed by Councils and TAC was set for Spanish and king mackerel for 1989-1990.

- The Councils completed options for Amendment 5. Draft amendment and Regulatory Impact Review (RIR) are being prepared. The Scientific and Statistical Committee (SSC) reviewed Amendment 4 and options for Amendment 5.

During the third quarter the following actions were taken:

- Revised Amendment 3 was submitted to Council for review.

- Amendment 4 was approved by NMFS.

- The Councils completed Draft Amendment 5 and scheduled public hearings. Statistical data were reviewed by the technical panel.

During the fourth quarter the following actions were taken:

- The Council approved revised Amendment 3. Five members filed a minority report.

- The Councils held six public hearings, reviews by Advisory Panel (AP) & SSC, and approved Amendment 5 for submission to the Secretary.

RED DRUM FMP

Additional members were appointed to the stock assessment group.

The stock assessment was completed during the second quarter and mailed to the stock assessment group.

During the third quarter, the Council reviewed the stock assessment and the stock assessment group report and set TAC equal to zero. The Council recommended the states increase escapement rates for juveniles.

REEF FISH FMP

The Council completed 11 public hearings of draft Amendment 1. The SSC reviewed the draft Amendment.

The AP reviewed the draft Amendment during the second quarter. The Council reviewed public testimony, SSC and AP recommendations and selected preferred management measures.

The Council completed Amendment 1 during the third quarter and submitted it to the Secretary for implementation.

The Council completed draft Amendment 2 and scheduled five public hearings during the fourth quarter.

SHARK FMP

The Council instructed staff to expedite completion of a Shark FMP and considered recommending the Secretary take emergency action to reduce harvest levels. That action was deferred to the April meeting.

During the second quarter, at the request of the Councils, NMFS agreed to prepare a Secretarial FMP for the fishery. The Intercouncil committee reviewed the draft of the Secretarial FMP during the third quarter.

The AP, SSC and Council reviewed and commented on the draft Secretarial FMP for the fishery during the fourth quarter.

SHRIMP FMP

The Council recommended research requirements for the fishery to NMFS for 1989-1990.

The stock assessment group reviewed status of stocks for brown, white and pink shrimp during the second quarter.

The Council reviewed status of stocks for pink shrimp in the Tortugas Sanctuary and modified the opening of the sanctuary boot area to be effective only in the summer of 1990. The Council approved revised Amendment 4 during the third quarter.

SPINY LOBSTER FMP

The Council approved final Amendment 2 following two public hearings and AP and SSC reviews. Amendment 2 was submitted to the South Atlantic Fishery Management Council and Florida Marine Fisheries Commission for action during the second quarter.

Amendment 2 was approved by the Council and submitted to the Secretary for implementation during the third quarter.

Amendment 2 was approved by the Secretary for implementation during the fourth quarter.

STONE CRAB FMP

No action this year.

SWORDFISH FMP

The stock assessment and stock assessment group report were completed during the second quarter, indicating severe overfishing of the resource. Intercouncil committee recommended measures for Amendment 1.

During the third quarter the stock assessment and stock assessment group report were reviewed by the Council. The Council recommended measures for draft Amendment 1.

During the fourth quarter the Council approved draft Amendment 1 and scheduled five public hearings.

Other Actions

HABITAT PROTECTION

The Council and Florida Marine Fisheries Commission held a colloquium on mosquito control to examine the impacts of fisheries during the first quarter.

During the second quarter, Council representatives attended a national policy meeting of Presidential position for national program of no-net-loss of habitat.

Advised President's Domestic Policy Council and NOAA of Council position on national no-net-loss of wetlands policy.

During the third quarter, advised EPA and NOAA of Council concern over the lack of research focused on common pesticides and effects on marine fisheries.

Advised the Louisiana Department of Environmental Quality of Council's concern regarding the discharge of petroleum industry drilling by-products into surface waters.

Informed the Chief of the Corps of Engineers that apparent inconsistencies occur within and between the four Gulf Coast districts in the conduct of their responsibility under Section 404 of the Clean Water Act.

During the fourth quarter, a letter was sent to Cameron-Creole Watershed Management Area Operational Advisory Committee suggesting changes in operating control structures.

Requested Director of Fish and Wildlife Service provide adequate funding to properly operate the control structures.

Requested Soil Conservation Service check the sill elevation of the Mangrove Bayou structure.

Requested appropriate federal agencies to utilize a task force approach for establishing coastal wetland restoration plans.

Requested that OMB provide 100% federal funding for Mississippi River water diversion projects as authorized by Congress. (Copy Congressional delegations of Louisiana and Mississippi were copied with the request.)

Requested that EPA (Regions) and Louisiana Departments of Environmental Quality and Natural Resources restrict and police the discharge of drilling fluids and other production waters into coastal wetlands.

Commended Governor Roemer for his continuing interest and support of the Bonnet Carre diversion project.

Requested EPA more closely examine water quality standards through monitoring that are being allowed by state regulatory agencies under NPDES permits in the Gulf estuarine systems, citing as examples Wolf and Arnica Bays, Alabama, and St. Andrew Sound, Florida.

Requested John Lindsey address the Habitat Protection Committee on NOAA responsibilities and problems in handling hazardous spills.

Requested EPA define areas of critical concern where monitoring data indicate degraded conditions.

Requested EPA accelerate development of estuarine waste-load modeling capability and integrate NOAA Strategic Assessment Division information and participation in the EPA Gulf Activities program.

Requested Florida Marine Fisheries Commission and South Atlantic Fisheries Management Council to keep us advised as to their activities in addressing the live rock issue.

Louisiana/Mississippi AP and Florida/Alabama AP were convened to review environmental issues.

A Council or staff member attended the following meetings: EPA Gulf Initiative, MSS Task Group and COE Environmental Advisory Committee.

1990 SEAMAP-GULF OF MEXICO MARINE DIRECTORY

Fishery-Independent Survey Activities

SOUTHEAST AREA MONITORING AND ASSESSMENT PROGRAM

Walter M. Tatum, Chairman

GULF STATES MARINE FISHERIES COMMISSION

Post Office Box 726

Ocean Springs, Mississippi 39564

1990 MARINE DIRECTORY

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a cooperative state/federal/university program for the collection, management and dissemination of fishery-independent data (data collected without direct reliance on any commercial or recreational fishery) and information in the southeast region. Presently operational are the SEAMAP-Gulf, SEAMAP-South Atlantic and SEAMAP-Caribbean (Puerto Rico and the U.S. Virgin Islands).

This Marine Directory, incorporated into the Fortieth Annual Report of the Gulf States Marine Fisheries Commission, updates information contained in the 1983, 1984, 1985, 1986, 1987, 1988 and 1989 SEAMAP Marine Directories, and describes survey activities (ongoing programs, vessel schedules, etc.) throughout the Gulf of Mexico. The SEAMAP Program is managed through the office of the Gulf States Marine Fisheries Commission.

Agencies responding to the 1990 Directory were contacted in April 1990 and requested to provide current information or projected changes in their survey programs. Tables 1, 2 and 3 are condensed summaries of information submitted by responding agencies and organizations, indicated as either federal, state or university activities.

Representatives of agencies contributing information to past directories are listed alphabetically in Appendix A by organizational category. The SEAMAP Subcommittee would like to express its appreciation to all organizations responding to the request for information. Other organizations conducting fishery-independent marine or estuarine surveys are encouraged to contact the SEAMAP Program for inclusion in future listings. The Directory will be updated each year, with copies supplied to participating organizations.

Appendix B lists published documents which have been produced by the SEAMAP Program and are available through the Gulf States Marine Fisheries Commission. Questions and requests for detailed information concerning the Directory or the SEAMAP Program should be referred to:

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SEAMAP-Gulf Coordinator
Gulf States Marine Fisheries Commission
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TABLE 1. SUMMARY OF INFORMATION PROVIDED BY FEDERAL AGENCIES

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
AGENCY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
NOAA NMFS/SEFC Mississippi Labs, Pascagoula (MS)	Groundfish (shrimp, spot, croaker, catfish, trout)	Subadults-adults	Gulf of Mexico South Atlantic	Territorial; open ocean (EEZ)	172' OREGON II	80/yr toward target species; 102/yr total sea days	500/yr trawl stations, 100 plankton/yr 100 neuston/yr	Standard 40' semibal-loon trawl; High-opening fish trawl	Bongo array with .333-mm mesh nets; 1 x 2-m neuston net with .947mm mesh	Random (stratified) 5-60 fm	None	None
	Reef fish (snapper, grouper, tilefish)	Adults	Gulf of Mexico; South Atlantic; Caribbean	Territorial; open ocean (EEZ)	OREGON II; 127' CHAPMAN	60/yr toward target species	150 longline sets/yr	Longline; traps; gill nets; camera	None	Varies	None	None
	Latent resources (coastal herring, squid, butterfish)	Subadults-adults	Gulf of Mexico	Territorial; open ocean (EEZ)	CHAPMAN	120/yr toward target species; 145/yr total sea days	400/yr trawl stations	High-opening & mid-water bottom trawls	None	Transects	Expansion	None
NOAA NMFS/SEFC Miami Lab (FL)	All recreationally & commercially important species; reef fish	Larvae; juvenile; adult	Gulf of Mexico; SW FL; SE FL	Territorial; open ocean (EEZ); internal	OREGON II; CHAPMAN; various small boats	120/yr	3500/yr	Fish traps	Bongo nets 60 & 20 cm with .333-mm mesh; neuston 1 x 2-m with .947-mm mesh	Systematic, grid basis; long-term station selection; estuary entrances; reefs	Continuation of SEAMAP; continuation of SE & SW FL monitoring	Billfishes; tunas
NOAA NMFS/SEFC Beaufort Lab (NC)	Atlantic croaker; spot	Subadults-adults	Charlotte Harbor; Tampa, Apalachicola, Pensacola, Mobile, Barataria, Corpus Christi, Galveston, San Antonio Bays; MS Sound; MS Delta; Laguna Madre Lavaca	Territorial	133' FERREL	70/yr	130 fish per sampling site	30' otter trawl	None	Samples representative of general contaminant levels at each sampling site (NOAA Status & Trends Program; National Benthic Surveillance Project; organic contaminants, trace metals, histopathology)	Project funded on yearly basis	None

TABLE 1. (CONTINUED)

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
AGENCY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
NOAA NMFS/SEFC Galveston Lab (TX)	Penaeid shrimp; bottomfish; estuarine dependent spp.	Postlarvae-adults	Gulf of Mexico	Internal; EEZ	OREGON II (Texas Closure); small boats	257/yr	1996/yr	Other trawls 10'-40'; beam trawl; drop sampler		Random stratified for Texas Closure; long-term studies for estuarine ecology	None	None
	Sea turtles	Juveniles	Gulf of Mexico	Internal; EEZ-oil and gas platforms	Bay boats; helicopters; crew boats; zodiac	12/yr	96	Otter trawls				
								60'-80'	None	Random	None	None
						45/yr	Various	None	None	Random	None	None
	Kemp's ridley sea turtles	Hatchlings-yearlings	Gulf of Mexico (release of tagged turtles)	Territorial Sea; EEZ (Texas)	U.S. Coast Guard Cutter; Univ. Texas R/V LONGHORN	2	1-2 releases per year	None	None	None	None	None
	Sea turtles	Stranded juveniles-adults	SW LA; TX	Coastline beaches	All terraine vehicles; dirt bikes; outboard boats	50	Variable	None	None	Twice-monthly stratified random sampling by beach strata	None	None
NOAA NMFS/SEFC Panama City Lab (FL)	King & Spanish mackerel	Subadults-adults; larvae	Gulf of Mexico; South Atlantic	Territorial; open ocean (EEZ)	OREGON II; CHAPMAN; small boats	50/yr	Various	Trawls; longlines; trolling	Bongo nets 60 & 20 cm with .333-mm mesh; neuston 1 x 2-m with .947-mm mesh; tucker trawl	Systematic, grid basis; long-term station selection; oceanic discon-tinuities	Continuation of SEAMAP;	None

TABLE 1. (CONTINUED)

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
AGENCY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
U.S. Dept. of Interior, Fish & Wildlife, LSU, Baton Rouge, LA	All economically important estuarine-dependent fishes & crustaceans	Larvae-juveniles	SW LA; south central LA	Estuarine	35-hp outboard	Varies	Once every two weeks	Custom-designed shallow marsh trawl; traps;	None	Systematic, long-term station selection; short-term special studies	Depending on funding, will remain the same	None
U.S. Army Corps of Engineers, Mobile, AL	All commercially & recreationally important species	All stages	Mobile Bay; MS Sound; Gulf of Mexico to the 20-fm contour	Internal; territorial	Charter research vessel; small boats	Varies with project	Varies with project	Varies	None	Systematic, random, short-term special studies	None	None
USDI MMS/COM OCS Region New Orleans, LA	Projects are as follows:											
Protected Species Study	All sea turtles & cetaceans	Adult	Central northern Gulf	Continental shelf & slope	Aerial over flights; contracted fishing vessel; R/V CHAPMAN	40	--	Photos; videos	None	Stratified X-sects	Project to end in 1990	None
MS/AL Pinnacle Trend Study	None	None	MS/AL outer shelf	Shelf to 200 m	R/V TOMMY MUNRO	14/yr	Varies	None	None	Side-scan and and photography cruises	Project to begin in 1990	None
Flower Garden Monitoring Study	Corals	Mature colonies	East and west Flower Garden Banks	Reef	M/V FLING; Motor vessels	18/yr	Varies	None	None	Photographs, video tape and diver surveys	Project to end in 1991	None
LA/TX Shelf Program	None	N/A	LA/TX continental slope & shelf	Continental shelf	Moored and drifting buoys; Ships and aircraft	N/A	N/A	None	None	Hydrographic and current measurements	Project to begin in 1990	None

TABLE 2. SUMMARY OF INFORMATION PROVIDED BY STATE AGENCIES

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
AGENCY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
Alabama Dept. of Conservation & Nat. Resources	All penaeid shrimp; southern flounder; Gulf menhaden; spot; croaker; red-drum; seatrout; blue crab; black drum; Spanish mackerel; mullet	Larvae-adults	AL marshes to territorial sea	Internal; territorial; EEZ	22' Tiara, (2) 90-hp; 23' Seacraft, (2) 150-hp; 32' Laffitte	110/yr	450/yr	50' bag seine; 16' otter trawl	6' beam plankton trawl; neuston	Long-term station selection, effort varies according to spawning season of target species	Increase effort to determine year-class strength of target species; Conduct more age and growth work; Explore means to sample offshore redfish areas	King mackerel, cobia, reef fish, in open Gulf waters
Florida Dept. of Natural Resources	Red drum; spotted trout; snook; king mackerel; mullets; gag grouper; tarpon; baitfish; stone crab; blue crab; spiny lobster; oysters; hard clam	All stages, larvae-adults	FL waters & offshore	Internal; territorial; EEZ	37' BONNIE "E"; 24' T-craft inboard; 3 small outboards used for inshore sampling; 5 mullet skiffs; 34' Allmand; 24' tunnel boat; 19' Monark; 2-17' Boston Whalers; 85' HERNAN CORTEZ II; 20' Boston Whaler; 25' Boston Whaler; 3-20' MAKO; 16' Monarch; 4-20' mullet skiffs; 16' skiff	Varies Weekly intervals (annually) 60/yr	Varies with project	35' trawl 100' bag seine; benthic sled with net; 600' x 8' trammel net; lobster & crab traps	bongo array; neuston nets	Systematic, random (stratified), grid basis; long-term station selection, short-term special studies	As per Florida Marine Fisheries Commission; Increase sampling for baitfish distributed in spring and increase sampling for tarpon larvae in nearshore waters.	Mainly applies to implementation of research phases on current species or topics with additional personnel and increased funding
Louisiana Dept. of Wildlife & Fisheries	All penaeid shrimp; finfish; oysters	Larvae-adults	LA inshore waters; territorial seas; EEZ	Internal; territorial	13-17' outboards for 6' trawl; 30' inboards for 16' trawls; 85' vessel (LOOP) for 50' trawl Leased vessel 40' trawl	167/yr state 92/yr LOOP 16/yr	Plankton, 528/yr; Benthos, 56/yr; Trawls: 800/yr 1288/yr 494/yr 72/yr 12/yr 96/yr 250/yr 1500/yr 100/yr 576/yr 135/yr 144/yr	Otter Trawls: 6' (inshore) 16' (inshore) 16' (offshore) 50' (offshore) 50' (inshore) 40' (offshore) 50' bag seine; gill net; trammel net oyster: butlerplate sq. meter dredge	1/2-m surface ring nets (.153-mm & .363-mm) 1-m surface ring (363-mm) 60-cm bongo nets (.333-.363-mm) neuston (.948-mm)	Long-term station selection, LOOP monitoring, and stratified random sampling for SEAMAP (40' trawls and plankton)	Increase territorial sea sampling; increase emphasis on finfish	Adult pelagic finfish in open Gulf waters

TABLE 2. (CONTINUED)

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
AGENCY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
Mississippi Bureau of Marine Resources	All penaeid shrimp; sciaenids	Juveniles-adults	MS territorial sea	Internal; territorial; (EEZ)	32' Laffitte; 19' Proline; 65' oyster dredge boat;	50/yr; 10/yr; 50-60/yr	Varies; oyster 6/mo; shrimp 10-15/mo; varies	16' trawl; oyster tongs and dredge;	None	Long-term station selection, varies with opening and closing of areas	Increase tagging activities	
Texas Parks & Wildlife Dept.	All penaeid shrimp; all other species	Juveniles-adults	TX internal coastal waters; territorial sea	Internal; territorial	30'-45' inboards; 18'-21' outboards; skiffs	365/yr	2022/yr 1680/yr 960/yr 760/yr 2520/yr 294/yr	60' bag seines (shoreline); 20' trawl (bay, open water); 20' trawl (Gulf waters); gill nets for adult finfish (along shore); oyster dredge; beach seine	None	Random, grid basis	None	Adult finfish in open Gulf waters

TABLE 3. SUMMARY OF INFORMATION PROVIDED BY UNIVERSITIES

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
UNIVERSITY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
FLORIDA												
Florida State Tallahassee	Benthic infauna; epibenthic fishes & invertebrates	Larvae-adults	NE Gulf of Mexico	Internal; territorial	(3) 55-hp 25' skiffs; outboard	48/yr	Monthly samples, both trawl & environ.	Standard 5-m otter trawl	80-um plankton net	Systematic, random long-term station selection; short-term special studies	More environmental experimentation	Areas: Apalachicola Bay system & Apalachee Bay; species: all species in those areas
Univ. West Florida Pensacola	Demersal vertebrates & invertebrates	Subadults-adults	NE Gulf of Mexico	Estuarine	18' skiff	7/yr trawl; 14/yr plankton neuston	50/yr; 140/yr	16' otter trawl	2 (1-m) bongos 3 (1-m) neustons	Systematic, random (stratified)	More environmental assess-assessment	None
Florida Sea Grant Gainesville	All species	All stages	Gulf; Caribbean; South Atlantic	Estuarine; offshore	Industry, NMFS and F.I.O. contract vessels	Varies with project	Varies with project			Varies with project	None	None
Florida Institude of Oceanography St. Petersburg	All species	All stages	Gulf; Caribbean; South Atlantic	Internal, territorial	SUNCOASTER; BELLOWS	20-30/project	Varies	40' otter trawl: Tucker trawl; shellfish dredge	Various plankton nets	Random, long-term station selection; short-term special studies	To continue with SEAMAP; Expanded environmental sampling	None
University of Florida Gainesville	Offshore: deep-water crabs & lobsters; nearshore: stone crabs	Offshore: adults, juveniles; nearshore: adults, sub-adults	Offshore & nearshore, eastern Gulf of Mexico	Offshore: continental slope nearshore: internal, territorial	Offshore: SEWARD JOHNSON; OREGON II; industry vessel; sumersible; nearshore: 24' inboard-outboard	Offshore: 7/yr; nearshore: 30+/yr	Offshore: 96 transects 2 trawl tows 5 trap lines nearshore: 5 transects/day	Otter trawl; various traps; scuba and 250-m transect line		Offshore & Nearshore: intensive sampling during mating season	None	None
University of Miami	All species	All stages	Gulf; Caribbean; South Atlantic	Estuarine; offshore; nearshore	Offshore: COLUMBUS ISELIN nearshore: CALANUS estuarine: 25' I/O's	240/yr 200/yr 150/yr	Varies with project X X	Hydroacoustics	Various plankton nets	Varies with project	More hydroacoustics	None

TABLE 3. (CONTINUED)

UNIVERSITY	TARGET SPECIES	LIFE STAGES SAMPLED	TYPES OF FISHERY-INDEPENDENT SAMPLING: AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN: NUMBER OF DAYS	NUMBER OF SAMPLES	TYPES OF GEAR: FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
ALABAMA												
Marine Environmental Sciences Consortium (University of South AL) U. Alabama)	Sciaenidae; hard clam	Larval/adult	Shelf and mouth of Mobile Bay, NW Florida and east AL	Shelf/ estuaries/ grassbeds	21' skiffs	22/24 episodic/ quarterly	Several hundred	-	Surface and demersal	Environmental impact/growth rate	Shift toward managment application	None
Marine Environmental Sciences Consortium (University of AL)	Oysters; blue crab	Larval/adult	Mobile Bay and east MS Sound	Estuarine	26'-42' research vessels	Biweekly and 48 hour time series	Hundreds	-	Clark-Bumpers zooplankton	Distribution patterns; settlement factors	None	None
Mississippi-Alabama Sea Grant Consortium Ocean Springs (MS)	Red drum; blue crabs; stone crabs; oysters	Vertebrates: larvae; invertebrate: all stages	Northern Gulf of Mexico; MS Sound; Mobile Bay	Territorial; EEZ; estuarine; coastal	96' TOMMY MUNRO; skiffs; industry	Varies with project	Varies with project	Various types of crab pots; tonging for oysters; closed, recirculating seawater system for crabs; opening/closing plankton trawl	Tucker trawl (.202-mm and .333-mm mesh nets); 60-cm bongo net	Varies with project	None	None
	Estuarine fish species	Juvenile to sub-adult	Weeks Bay, AL	Estuarine	14' skiffs	60/yr	180/yr	Block nets/ seine		Random concentrated in May, July and September		None
MISSISSIPPI												
Univ. So. Mississippi Hattiesburg	All estuarine finfish; centrarchids		MS estuarine; northern Gulf; Biloxi Bay	Estuarine; territorial	Various small skiffs (outboard)	Varies	Varies with project	Standard basic equipment	Standard basic equipment	Short-term special studies	Increase development of marine and coastal biology program	None

TABLE 3. (CONTINUED)

UNIVERSITY	TARGET SPECIES	LIFE STAGES SAMPLED	TYPES OF FISHERY-INDEPENDENT SAMPLING: AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN: NUMBER OF DAYS	NUMBER OF SAMPLES	TYPES OF GEAR: FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
MISSISSIPPI												
Gulf Coast Research Laboratory Ocean Springs	All penaeid shrimp; blue crab; croaker; spot; seatrout; catfish; Gulf menhaden; sea mullet; Atlan. bumper; butterfish; cutlassfish; red drum; squid; golden Gulf crabs	Larvae-adults	MS territorial sea; offshore to 300 fm	Internal; territorial; (EEZ)	96' TOMMY MUNRO; (5) 20' skiffs; 35' HERMES; 40' NEREUS;	Semimonthly and monthly	216 trawl stations/yr	50' bag seine; 36' otter trawl; 16' otter trawl; 6' Renfro beam trawl; variable mesh gill net sampler; 40' shrimp trawl; 80' high-rise net; crab traps	Tucker trawl; neuston; bongo	Long-term station selection; stratified-random	Fishery Division anticipates its program of monitoring & assessment over the long term, with appropriate increases in intensity & scope if funds become available; longline for pelagic fishes; bottom longline; deepwater traps for crabs	None
Mississippi-Alabama Sea Grant Consortium Ocean Springs	Red drum; blue crabs; stone crabs; oysters	Vertebrates larvae; invertebrates: all stages	Northern Gulf of Mexico; MS Sound; Mobile Bay	Territorial; EEZ; estuarine; coastal	96' TOMMY MUNRO; skiffs; industry	Varies with project	Varies with project	Various types of crab pots; tonging for oysters; closed, recirculating seawater system for crabs; opening/closing ichthy. trawl	Tucker trawl (.202-mm and .333-mm mesh nets); 60-cm bongo net	Varies with project	None	None
LOUISIANA												
Univ. New Orleans New Orleans	Blue crab; oysters; marine commercial finfish	All stages	Lake Pontchartrain; Lake Borgne	Estuarine		Varies				Short-term special studies	Analyze commercial fish populations by use of electrophoresis; studies of oyster nutrition and parasitology	None

TABLE 3. (CONTINUED)

			TYPES OF FISHERY-INDEPENDENT SAMPLING			ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN:		TYPES OF GEAR				
UNIVERSITY	TARGET SPECIES	LIFE STAGES SAMPLED	AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	NUMBER OF DAYS	NUMBER OF SAMPLES	FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
LOUISIANA												
McNeese St. University Lake Charles	Periphyton chemical		Calcasieu Estuary	Estuarine		Varies	Monthly	Periphytona			None	None
Nicholls St. University Thibodaux	Oysters	All stages	Terrebonne Bay; Barataria Bay	Estuarine	21' skiff; 30' oyster dredge boat	48/yr	144/yr	Oyster dredge		Random, long-term station selection	2 more years with oyster project before it ends	None
University of Southwestern Louisiana Lafayette	Stone crabs; penaeid shrimp; commercial finfish	All stages	Northern Gulf of Mexico	Coastal; estuarine	Various LUMCOM vessels	Varies	Varies	Trawl; dredge; traps; pots; seines		Varies by population	None	None
Louisiana St. University Baton Rouge	Estuarine & marine finfish species; decapod crustaceans	All stages	Barataria Bay; Lake Pontchartrain; MS River mouth; Atchafalaya; Terrebonne Bay; Timbalier Bay	Estuarine; territorial; (EEZ)	Small skifts; PELICAN; ACADIANA; oil & gas structures	Varies monthly	Varies with project	Drop BOT sampler; gill nets; Hydroacoustics trawl	MOONESS opening and closing bongo nets; general plankton nets	Short-term special studies; long-term stations; Radar	Estimate fish abundance & movement using hydroacoustics; Examine growth rates & reproduction biology of important estuarine species	
Louisiana Universities Marine Consortium Cocodrie	Zooplankton; benthos; bottomfish; anchovies	All stages	Terrebonne and Timbalier Bays; Inner Cont. Shelf	Estuarine; coastal	110' PELICAN; 58' R/V ACADIANA; small outboards; 19-m, 32-m vessels	Varies	Varies	5-m otter trawl	.333-mm & .505-mm mesh bongo nets	Fixed station transects	None	None

TABLE 3. (CONTINUED)

UNIVERSITY	TARGET SPECIES	LIFE STAGES SAMPLED	TYPES OF FISHERY-INDEPENDENT SAMPLING: AREA SAMPLED	GEOGRAPHIC AREAS OF IMPORTANCE	TYPES OF PLATFORMS	ANNUAL EFFORT DEVOTED TO FISHERY-INDEPENDENT SAMPLING BY ACTIVITY IN: NUMBER OF DAYS	NUMBER OF SAMPLES	TYPES OF GEAR: FISHING, TRAWLING	PLANKTON	SAMPLE STRATEGY FOR DATA COLLECTION	ANTICIPATED CHANGES IN DIRECTION OF FISHERY-INDEPEND. ACTIVITIES OVER NEXT 5 YEARS	HIGH PRIORITY SPECIES PRESENTLY UNABLE TO SAMPLE
TEXAS												
Univ. of TX, Austin Marine Science Institute, Port Aransas	Shelf & bay species	All stages	Internal; territorial waters	Internal; territorial; (EEZ)	105' LONGHORN 57' KATY	100/yr	Varies with project	42' semi-balloon shrimp trawl; 40' semi-balloon otter trawl	12' x 24" plankton net	Short-term special studies	Institute expansion on all present programs	None
Texas A & I Kingsville	All inshore bay species	All stages	Corpus Christi to Brownsville	Internal; coastal		24/yr	150/yr			Short-term special studies	None	None
Texas A & M College Station and Galveston	All macrocrustaceans and finfish	All stages	NW Gulf off LA & TX	Internal; territorial; (EEZ)	71' EXCELLENCE II; 47' ROAMIN EMPIRE	Varies	Varies with project	34' & 50' semi-balloon trawls	Bongo net with .333-mm & .505-mm mesh	Short-term special studies	None	None
University of Texas-Pan American Coastal Stud-Lab, So. Padre Island	All finfish of Laguna Madre, benthic macrofauna of Laguna Madre	All stages	Corpus Christi to Brownsville	Laguna Madre; Gulf nearshore	Shallow-draft bay boats	48/yr	Biweekly and monthly depending on project	Otter trawls & bag seines	Plankton tows	Long-term baseline studies	Intensive studies of individual species	None

APPENDIX A

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APPENDIX B

SEAMAP DOCUMENTS

SEAMAP DOCUMENTS LIST, 1982 - CURRENT

1) SEAMAP Strategic Plan, January 1981. The initial planning document describing the intent to develop the SEAMAP Program and outlining the preliminary goals and objectives, assessment requirements and priorities, research strategies, and funding requirements.

2) SEAMAP Quick-Reports (Data Summaries): six summaries, June-July 1981; seven summaries, June-July 1983; seven summaries, June-July 1984; five summaries, June- July 1985; five summaries, June-July 1986; six summaries, June-July 1987; five summaries, June-July 1988; six summaries, June-July 1989. Summaries of catch rate information from the SEAMAP Summer Shrimp/Groundfish surveys (Squid/Butterfish Survey, 1985 only) in the northern Gulf of Mexico, indicating stations sampled, catch rates, assessment of shrimp and finfish yields, and synopses of hypoxic conditions in the survey areas.

3) 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990 SEAMAP Marine Directories: May 1983, March 1984, March 1985, March 1986, September 1987, July 1988, August 1989, and June 1990. Inventories of marine agency contacts (State, Federal and university) concerned with fishery research in the Gulf, and summaries of information provided by these organizations: target species, types of fishery-independent sampling gear and platforms, annual sampling effort and other material.

4) SEAMAP Information System Manual, Fall 1983. A description of the data management program supporting SEAMAP surveys and collecting activities, detailing the data processing and quick-report subsystems and presenting data formats for SEAMAP surveys and sample documentation and transmittal forms.

5) SEAMAP-Gulf Operations Plan, October 1983. A description of the SEAMAP Program, its goals and objectives, program accomplishments, survey and information systems operations, survey plans and schedules, program management, and funding requirements. Includes figures and tables detailing system functions, platform and funding needs, and information utilization.

6) SEAMAP-Gulf Operations Plan Executive Summary, March 1984. A summary of the features of the Operations Plan.

7) SEAMAP Environmental and Biological Atlases of the Gulf of Mexico, 1982, 1983, 1984, 1985, 1986, January 1985; February 1986; October 1986; June 1988; April 1990. Compilations of information obtained from the 1982, 1983, 1984 and 1985 SEAMAP surveys. Included are dominant finfish and invertebrate catches from the shrimp/groundfish surveys, results of the plankton surveys, environmental data taken during both surveys, and methodology used in SEAMAP surveys.

8) SEAMAP 1982, 1983 Ichthyoplankton Atlases. NOAA Technical Memoranda NMFS-SEFC-144 (1985) and NMFS-SEFC (1986) summarizing in plots the larval distribution and abundance of the families Engraulidae, Carangidae, Clupeidae, Lutjanidae, Serranidae, Coryphaenidae, Xiphiidae, and Scombridae taken on SEAMAP surveys in 1982 and 1983.

SEAMAP DOCUMENTS LIST, 1982 - CURRENT

9) Proceedings: SEAMAP Shrimp and Bottomfish Sampling Gear Workshop, August 1985. A summary of seven technical papers and a panel discussion on shrimp/groundfish sampling gear, presented at the 33rd Annual Spring Meeting of the Gulf States Marine Fisheries Commission. Included are recommendations for standardizing and calibrating bottom trawl survey activities and for satisfying future research requirements.

10) Annual Report of the Southeast Area Monitoring and Assessment Program,
October 1, 1984 - September 30, 1985, October 1985;
October 1, 1985 - September 30, 1986, October 1986;
October 1, 1986 - September 30, 1987, December 1987;
October 1, 1987 - September 30, 1988, August 1989;
October 1, 1988 - September 30, 1989, March 1990.
Summaries of activities and proposed events for the SEAMAP-Gulf, SEAMAP-South Atlantic and SEAMAP-Caribbean components.

11) Data Management System Requirements Document for Gulf and South Atlantic, November 1986.

12) Data Management System Design Study for Gulf and South Atlantic, March 1987. A result of the system design study, this documents describes the high level design of the proposed system and presents a five year implementation plan.

13) SEAMAP Operations Manual for Collection of Data, May 1987; revised May 1990. A manual presenting the procedures to be followed by all vessels that participate in SEAMAP surveys.

14) SEAMAP Data Management System Users Manual, August 1989. A manual outlining system operations and procedures needed to enter, edit, upload and download data on the PC- based system.

Biological and environmental data, and ichthyoplankton specimens sorted to the family level from SEAMAP surveys in the Gulf of Mexico, are available to researchers upon request to the SEAMAP Coordinator, Gulf States Marine Fisheries Commission (601/ 875-5912).

GULF STATES MARINE FISHERIES COMMISSION

Financial Statements
September 30, 1989

Boutwell and Company, Limited

Certified Public Accountants

1126 JACKSON AVENUE -- POST OFFICE BOX 295
PASCAGOULA, MISSISSIPPI 39567

MEMBER
AMERICAN INSTITUTE OF
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MILLETTE BUILDING
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TELEPHONE 762-5181

July 19, 1990

To The Commissioners
Gulf States Marine Fisheries Commission
c/o Mr. Larry B. Simpson, Executive Director
P. O. Box 726
Ocean Springs, Mississippi 39564

Gentlemen:

We have examined the statement of assets, liabilities, and Fund Balances (modified cash basis) of Gulf States Marine Fisheries Commissioners as of September 30, 1989 and the related statement of revenues, expenses, and changes in fund balances (modified cash basis) for the year then ended. Our examination was made in accordance with generally accepted auditing standards and, accordingly, include such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in Note 1, the Commission's policy is to prepare its financial statements on the basis of cash receipts and disbursements except that a provision for depreciation for office equipment, furniture, fixtures and automotive of the operating fund (unrestricted) has been included. Consequently, certain revenue and related assets are recognized when received rather than when earned, and certain expenses are recognized when paid rather than when the obligation is incurred. Accordingly, the accompanying financial statements are not intended to present financial position and results of operations in conformity with generally accepted accounting principles.

In our opinion, the financial statements referred to above present fairly the assets and liabilities of Gulf States Marine Fisheries Commission at September 30, 1989, and its revenues, expenses, and changes in fund balances for the year then ended, on the basis of accounting described in Note 1, which has been applied in a manner consistent with that of the preceding year.

Respectfully submitted,

Boutwell and Company, Limited

BOUTWELL AND COMPANY, LIMITED
Certified Public Accountants

GULF STATES MARINE FISHERIES COMMISSION
Statement of Assets, Liabilities and Fund Balances (Modified Cash Basis)
September 30, 1989

ASSETS			
Cash			$ 57,236
Furniture, Fixtures and Equipment - Unrestricted	$ 41,441		
Automotive Equipment - Unrestricted	13,661		
Total	$ 55,102		
Less: Accumulated Depreciation - Unrestricted	(37,663)		
Net Fixed Assets - Unrestricted	$ 17,439		
Furniture & Equipment - Restricted	$ 37,281		
Less: Contra Account	(37,281)		
Net Fixed Assets - Restricted	$ -0-		
Total Fixed Assets			17,439
Total			$ 74,675
LIABILITIES			
Payroll Taxes Withheld			$ 3,890
FUND BALANCES			
Unrestricted			
Operating Fund			$ 90,698
Restricted			
State-Federal Management Funds	$ 17,864		
State-Federal Administrative Programmatic Funds	(1,281)		
State-Federal SEAMAP Funds	3,336		
State-Federal Council Funds	4,455		
Marine Fisheries Initiative Funds	2		
MARFIN-Red Drum	(54)		
D-J Support	(40,271)		
Thermal Refuge	5,200		
Interjurisdictional Fisheries	(5,413)		
Side Scan Sonar	(3,751)		$ (19,913)
Total			$ 74,675

The accompanying notes are an integral part of these financial statements.

GULF STATES MARINE FISHERIES COMMISSION
Statement of Revenues, Expenses and Changes in Fund Balances (Modified Cash Basis)
Fiscal Year Ended September 30, 1989

	Operating Fund	State-Federal Management Funds	Administrative Programmatic Funds	SEAMAP Funds
REVENUES:				
Member States Appropriations				
Alabama	$ 11,250			
Florida	22,500			
Louisiana	-0-			
Mississippi	-0-			
Texas	22,500			
Grants and Agreements - Previous Year				$26,669
Grants and Agreements - Current Year				60,707
Interest Earned	5,349			
Miscellaneous Income	461			
Total Revenues	$ 62,060	$ -0-	$ -0-	$87,376
EXPENSES:				
Salaries	$ 45,598			$39,516
Contract Labor				
Insurance - Hospital	4,977			5,339
Retirement Plan	3,835			2,317
Taxes - Payroll and Penalties	3,497			3,127
Office Rental	3,435			1,302
Office Supplies	1,986			1,097
Postage	1,394			3,043
Professional Fees	6,256			54
Travel	9,421			27,935
Telephone	4,301			3,440
Printing	1,576			3,784
Meetings	4,714			1,689
Dues and Subscriptions	1,167			
Auto Expense	247			
Insurance - Auto Bond & Office	3,147			
Maintenance and Repairs	3,257			
Courtesies	462			
Depreciation	5,903			
Copy Expense	1,125			3,310
Office Equipment				545
Total Expenses	$106,298	$ -0-	$ -0-	$96,498
Excess (Deficiency) of Revenues Over Expenses	$(44,238)	$ -0-	$ -0-	$(9,122)
Fund Balances, October 1, 1988	134,936	17,864	(1,281)	12,458
Fund Balances, September 30, 1989	$ 90,698	$ 17,864	$ (1,281)	$ 3,336

The accompanying notes are an integral part of these financial statements.

Council Funds	Marine Fisheries Initiative Funds	MARFIN Red Drum	D-J Support	Thermal Refuge	Interjurisdictional Fisheries	Side Scan Sonar	Totals
							$ 11,250
							22,500
							-0-
							-0-
							22,500
$ 6,250	$ -0-	$ 1,265	$ 44,458	$ -0-	$ 16,617	$ -0-	95,259
18,750	61,377	3,617	28,131	5,200	79,978	7,500	265,260
							5,349
							461
$25,000	$ 61,377 (1)	$ 4,882	$ 72,589	$ 5,200	$ 96,595	$ 7,500	$422,579
$19,041	$ 17,406		$ 44,407		$ 44,529	$ 1,334	$211,831
	878						878
549	2,245		4,155		6,626		23,891
428	905		2,620		2,608		12,713
	1,174		3,010		3,265		14,073
1,662	1,460		1,752		1,404		11,015
477	1,105	$ 93	1,177		1,715	505	8,155
230	1,361	779	784		1,636		9,227
200			54		244	9,661	16,469
1,897	12,632	3,185	27,147		20,751	821	103,789
292	275		541		932		9,781
	2,769		3,391		3,230	1,247	15,997
	101	586	1,086		1,142		9,318
							1,167
743							990
							3,147
							3,257
							462
							5,903
216	1,462	293	1,578		2,301		10,285
					11,495		12,040
$25,735	$ 43,773	$ 4,936	$ 91,702	$ -0-	$ 101,878	$13,568	$484,388
$ (735)	$ 17,604	$ (54)	$ (19,113)	$ 5,200	$ (5,283)	$(6,068)	$(61,809)
5,190	(17,602)	-0-	(21,158)	-0-	(130)	2,317	132,594
$ 4,455	$ 2	$ (54)	$ (40,271)	$ 5,200	$ (5,413)	$(3,751)	$ 70,785

(1) Also received $217.77 of interest for a total of $61,594.97.

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
September 30, 1989

NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The modified cash basis of accounting has been used to record the transactions of the unrestricted fund (operating fund) of the Commission.

The cash basis of accounting has been used to record the transactions of the restricted funds (grants and agreements) of the Commission.

The modified cash basis used by the unrestricted fund is composed of cash receipts and disbursements and includes a provision for depreciation of office equipment, furniture, fixtures and autos. No depreciation is recorded on restricted assets purchased through grants and agreements.

Revenue Recognition

Member States' Appropriations

To belong to the Commission, member states are assessed annual fees according to the following scheudule:

Alabama	$ 11,250.00
Florida	22,500.00
Louisiana	22,500.00
Mississippi	11,250.00
Texas	22,500.00

Revenue is recognized in the year that the fees are received by the Commission regardless of what fiscal year of the state to which the payments pertain.

Louisiana and Mississippi paid two (2) years dues in the previous year.

Grants and Agreements

Revenue is recognized in the year that it is received.

Revenue from some grants and agreements are received in two (2) fiscal years of the Commission.

Long-Term Assets

Fixed assets purchased with Member States' Appropriations (unrestricted operating fund) are properly capitalized and set up as a fixed asset on the books.

Fixed assets purchased from grant and agreement funds (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 (unrestricted) is recorded using the straight-line method.

Lives used are summarized below:

Type of Asset	Life (years)
Office Equipment, Furniture and Fixtures	10
Automotive	5

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
September 30, 1989

NOTE 2: ORGANIZATION:

Gulf States Marine Fisheries Commission was created with the consent of the 81st Congress of the United States, granted by Public Law 66, approved May 19, 1949, authorizing 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.

NOTE 3: STATE-FEDERAL FISHERIES MANAGEMENT PROGRAM:

Effective August 15, 1975, the Commission entered into a contract with the U. S. Department of Commerce to provide administrative support of the State-Federal Fisheries Management Program in the Gulf of Mexico coastal states.

NOTE 4: FISHERIES ADMINISTRATIVE SUPPORT PROGRAM:

Effective in April, 1978, the Commission entered into contracts with the U. S. Department of Commerce to provide programmatic funds to support the State-Federal Fisheries Planning and Administrative Program in the Gulf of Mexico coastal states.

NOTE 5: FISHERIES COUNCIL SUPPORT PROGRAM:

Effective in October, 1977, the Commission entered into contracts with the U. S. Department of Commerce to provide administrative support of the State-Federal Fisheries Council in the Gulf of Mexico coastal states.

NOTE 6: INTERJURISDICTIONAL FISHERIES MANAGEMENT PROGRAM:

Effective in October, 1987, the Commission entered into contracts with the U. S. Department of Commerce to develop Interjurisdictional Fisheries Management Plans.

NOTE 7: ADMINISTRATIVE SUPPORT OF MARINE FISHERIES INITIATIVE (MARFIN):

Effective in March, 1986, the Commission entered into contracts with the U. S. Department of Commerce to provide administrative support for Marine Fisheries Initiative Program Management Board for the Gulf of Mexico.

GULF STATES MARINE FISHERIES COMMISISION
Notes to Financial Statements
September 30, 1989

NOTE 8: MONITORING AND ASSESSMENT PROGRAM:

Effective in December, 1981, the Commission entered into contracts with the U. S. Department of Commerce to provide fishery-independent monitoring and assessment information essential to the national management of U. S. Gulf of Mexico fisheries resources.

NOTE 9: THERMAL REFUGE

A one-time grant to identify cool spots in designated Florida river systems where striped bass may potentially be spawned.

NOTE 10: COOPERATIVE INTERSTATE FISHERIES MANAGEMENT:

Effective in March, 1987, the Commission entered into agreements with the U. S. Fish and Wildlife Service, Dept. of Interior, along with the Atlantic States and Pacific Marine Fisheries for Cooperative Interstate Fisheries Management in the Territorial Sea of the United States.

NOTE 11: RED DRUM:

Effective in September, 1986, the Commission entered into agreements with the U. S. Department of Commerce for coordinating, planning, and progress-reporting activities of the cooperative State-Federal Research Plan for Red Drum in the Gulf of Mexico.

NOTE 12: SIDE SCAN SONAR:

Effective in May, 1988, the Commission entered into agreements with the U. S. Fish and Wildlife Service, Dept. of Interior, for monitoring and assessment of survey of artificial reef materials.

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
September 30, 1989

NOTE 13: FIXED ASSETS - UNRESTRICTED FUND:

	Cost	Accumulated Depreciation	Undepreciated Cost
Office Equipment, Furniture & Fixtures	$41,441	$ 29,466	$ 11,975
Automotive	13,661	8,197	5,464
Net Fixed Assets	$55,102	$ 37,663	$ 17,439

NOTE 14: COMMITMENTS:

An office lease agreement was begun on December 1, 1987 and will expire in the year 2002. The monthly lease payment for the first three (3) years is $875.00 and will be adjusted every three (3) years using the consumer price index.

NOTE 15: RELATED PARTY TRANSACTIONS:

No related party transactions are known.

NOTE 16: RETIREMENT PLAN:

In previous years, the Commission implemented a tax sheltered annuity plan for all employees that have been employed for at least six (6) months. The Commission contributes six (6) percent of the eligible employees' base pay with the amounts being fully vested upon payment by the Commission. The total expense for the year amounted to $12,713.

NOTE 17: ALLOCATION OF EXPENSES:

The expenses of providing the various grant and agreement programs and activities are summarized in the Statement of Revenue, Expenses, 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 18: INCOME TAXES:

The Commission has not formally applied for tax-exempt status, but they believe that they are tax-exempt since their revenue comes from federal grants and agreements and member state appropriations.

NOTE 19: FIXED ASSETS-RESTRICTED:

Fixed assets that have been purchased from federal grant and agreement funds and have been previously and currently charged as an expense were recorded as an asset with a related Contra account. The purpose for recording these assets is for control purposes.

GULF STATES MARINE FISHERIES COMMISSION

Financial Statements
December 31, 1989

Boutwell and Company, Limited

Certified Public Accountants

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MILLETTE BUILDING
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July 19, 1990

To The Commissioners
Gulf States Marine Fisheries Commission
c/o Mr. Larry B. Simpson, Executive Director
P. O. Box 726
Ocean Springs, Mississippi 39564

Gentlemen:

We have examined the statement of assets, liabilities, and Fund Balances (modified cash basis) of Gulf States Marine Fisheries Commissioners as of December 31, 1989 (Three Months) and the related statement of revenues, expenses, and changes in fund balances (modified cash basis) for the year then ended. Our examination was made in accordance with generally accepted auditing standards and, accordingly, include such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

As described in Note 1, the Commission's policy is to prepare its financial statements on the basis of cash receipts and disbursements except that a provision for depreciation for office equipment, furniture, fixtures and automotive of the operating fund (unrestricted) has been included. Consequently, certain revenue and related assets are recognized when received rather than when earned, and certain expenses are recognized when paid rather than when the obligation is incurred. Accordingly, the accompanying financial statements are not intended to present financial position and results of operations in conformity with generally accepted accounting principles.

In our opinion, the financial statements referred to above present fairly the assets and liabilities of Gulf States Marine Fisheries Commission at September 30, 1989, and its revenues, expenses, and changes in fund balances for the year then ended, on the basis of accounting described in Note 1, which has been applied in a manner consistent with that of the preceding year.

Respectfully submitted,

Boutwell and Company, Limited

BOUTWELL AND COMPANY, LIMITED
Certified Public Accountants

GULF STATES MARINE FISHERIES COMMISSION
Statement of Assets, Liabilities and Fund Balances (Modified Cash Basis)
December 31, 1989

ASSETS			
Cash			$ 113,442
Furniture, Fixtures and Equipment - Unrestricted	$ 41,441		
Automotive Equipment - Unrestricted	13,661		
Total	$ 55,102		
Less: Accumulated Depreciation - Unrestricted	(39,134)		
Net Fixed Assets - Unrestricted	$ 15,968		
Furniture & Equipment - Restricted	$ 37,281		
Less: Contra Account	(37,281)		
Net Fixed Assets - Restricted	$ -0-		
Total Fixed Assets			15,968
Total			$ 129,410
LIABILITIES			
Payroll Taxes Withheld			$ 3,901
FUND BALANCES			
Unrestricted			
Operating Fund			$ 135,434
Restricted			
State-Federal Management Funds	$ 17,864		
State-Federal Administrative Programmatic Funds	(1,281)		
State-Federal SEAMAP Funds	8,198		
State-Federal Council Funds	(181)		
Marine Fisheries Initiative Funds	2		
MARFIN-Red Drum	(786)		
D-J Support	(20,630)		
Thermal Refuge	(4,800)		
Interjurisdictional Fisheries	(8,310)		
Side Scan Sonar	(1)		$ (9,925)
Total			$ 129,410

The accompanying notes are an integral part of these financial statements.

GULF STATES MARINE FISHERIES COMMISSION
Statement of Revenues, Expenses and Changes in Fund Balances (Modified Cash Basis)
Fiscal Year Ended December 31, 1989 (Three Months)

	Operating Fund	State-Federal Management Funds	Administrative Programmatic Funds	SEAMAP Funds
REVENUES:				
Member States Appropriations				
Alabama	$ 11,250			
Florida	-0-			
Louisiana	22,500			
Misisissippi	11,250			
Texas	22,500			
Grants and Agreements - Previous Year				$22,721
Grants and Agreements - Current Year				-0-
Interest Earned	1,539			
Total Revenues	$ 69,039	$ -0-	$ -0-	$22,721
EXPENSES:				
Salaries	$ 13,385			$10,663
Contract Labor				
Insurance - Hospital	1,776			799
Retirement Plan	564			652
Taxes - Payroll and Penalties	825			816
Office Rental	1,216			150
Office Supplies	178			92
Postage	181			283
Professional Fees	583			
Travel	1,212			2,335
Telephone	928			600
Printing	952			674
Meetings	169			429
Dues and Subscriptions				
Auto Expense	45			
Insurance - Auto Bond and Office	350			
Maintenance and Repairs	182			122
Courtesies	125			
Depreciation	1,472			
Copy Expense	160			244
Office Equipment				
Total Expenses	$ 24,303	$ -0-	$ -0-	$17,859
Excess (Deficiency) of Revenues Over Expenses	$ 44,736	$ -0-	$ -0-	$ 4,862
Fund Balances, October 1, 1989	90,698	17,864	(1,281)	3,336
Fund Balances, December 31, 1989	$135,434	$ 17,864	$ (1,281)	$ 8,198

The accompanying notes are an integral part of these financial statements.

Council Funds	Marine Fisheries Initiative Funds	MARFIN Red Drum	D-J Support	Thermal Refuge	Interjurisdictional Fisheries	Side Scan Sonar	Totals
							$ 11,250
							-0-
							22,500
							11,250
							22,500
		$ 616	$ 40,205		$ 21,711	$ 3,750	89,003
							-0-
							1,539
$ -0-	$ -0-	$ 616	$ 40,205	$ -0-	$ 21,711	$ 3,750	$158,042
$ 3,952			$ 12,934		$ 11,988		$ 52,922
				$10,000			10,000
64			1,340		1,181		5,160
320			825		796		3,157
300			1,159		1,123		4,223
			437		963		2,766
		$ 87	733		255		1,345
		603	327		817		2,211
			400				983
		266	514		3,827		8,154
			295		487		2,310
		102	225		1,938		3,891
			252		637		1,487
			250				250
							45
			350				700
			131		249		684
							125
							1,472
		290	392		347		1,433
							-0-
$ 4,636	$ -0-	$ 1,348	$ 20,564	$10,000	$ 24,608	$ -0-	$103,318
$(4,636)	$ -0-	$ (732)	$ 19,641	$(10,000)	$ (2,897)	$ 3,750	$ 54,724
4,455	2	(54)	(40,271)	5,200	(5,413)	(3,751)	70,785
$ (181)	$ 2	$ (786)	$ (20,630)	$(4,800)	$ (8,310)	$ (1)	$125,509

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
December 31, 1989

NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The modified cash basis of accounting has been used to record the transactions of the unrestricted fund (operating fund) of the Commission.

The cash basis of accounting has been used to record the transactions of the restricted funds (grants and agreements) of the Commission.

The modified cash basis used by the unrestricted fund is composed of cash receipts and disbursements and includes a provision for depreciation of office equipment, furniture, fixtures and autos. No depreciation is recorded on restricted assets purchased through grants and agreements.

Revenue Recognition

Member States' Appropriations

To belong to the Commission, member states are assessed annual fees according to the following scheudule:

Alabama	$ 11,250.00
Florida	22,500.00
Louisiana	22,500.00
Mississippi	11,250.00
Texas	22,500.00

Revenue is recognized in the year that the fees are received by the Commission regardless of what fiscal year of the state to which the payments pertain.

Grants and Agreements

Revenue is recognized in the year that it is received.

Revenue from some grants and agreements are received in two (2) fiscal years of the Commission.

Long-Term Assets

Fixed assets purchased with Member States' Appropriations (unrestricted operating fund) are properly capitalized and set up as a fixed asset on the books.

Fixed assets purchased from grant and agreement funds (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 (unrestricted) is recorded using the straight-line method.

Lives used are summarized below:

Type of Asset	Life (years)
Office Equipment, Furniture and Fixtures	10
Automotive	5

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
December 31, 1989

NOTE 2: ORGANIZATION:

Gulf States Marine Fisheries Commission was created with the consent of the 81st Congress of the United States, granted by Public Law 66, approved May 19, 1949, authorizing 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.

NOTE 3: STATE-FEDERAL FISHERIES MANAGEMENT PROGRAM:

Effective August 15, 1975, the Commission entered into a contract with the U. S. Department of Commerce to provide administrative support of the State-Federal Fisheries Management Program in the Gulf of Mexico coastal states.

NOTE 4: FISHERIES ADMINISTRATIVE SUPPORT PROGRAM:

Effective in April, 1978, the Commission entered into contracts with the U. S. Department of Commerce to provide programmatic funds to support the State-Federal Fisheries Planning and Administrative Program in the Gulf of Mexico coastal states.

NOTE 5: FISHERIES COUNCIL SUPPORT PROGRAM:

Effective in October, 1977, the Commission entered into contracts with the U. S. Department of Commerce to provide administrative support of the State-Federal Fisheries Council in the Gulf of Mexico coastal states.

NOTE 6: INTERJURISDICTIONAL FISHERIES MANAGEMENT PROGRAM:

Effective in October, 1987, the Commission entered into contracts with the U. S. Department of Commerce to develop Interjurisdictional Fisheries Management Plans.

NOTE 7: ADMINISTRATIVE SUPPORT OF MARINE FISHERIES INITIATIVE (MARFIN):

Effective in March, 1986, the Commission entered into contracts with the U. S. Department of Commerce to provide administrative support for Marine Fisheries Initiative Program Management Board for the Gulf of Mexico.

GULF STATES MARINE FISHERIES COMMISISION
Notes to Financial Statements
December 31, 1989

NOTE 8: MONITORING AND ASSESSMENT PROGRAM:

Effective in December, 1981, the Commission entered into contracts with the U. S. Department of Commerce to provide fishery-independent monitoring and assessment information essential to the national management of U. S. Gulf of Mexico fisheries resources.

NOTE 9: THERMAL REFUGE

A one-time grant to identify cool spots in designated Florida river systems where striped bass may potentially be spawned.

NOTE 10: COOPERATIVE INTERSTATE FISHERIES MANAGEMENT:

Effective in March, 1987, the Commission entered into agreements with the U. S. Fish and Wildlife Service, Dept. of Interior, along with the Atlantic States and Pacific Marine Fisheries for Cooperative Interstate Fisheries Management in the Territorial Sea of the United States.

NOTE 11: RED DRUM:

Effective in September, 1986, the Commission entered into agreements with the U. S. Department of Commerce for coordinating, planning, and progress-reporting activities of the cooperative State-Federal Research Plan for Red Drum in the Gulf of Mexico.

NOTE 12: SIDE SCAN SONAR:

Effective in May, 1988, the Commission entered into agreements with the U. S. Fish and Wildlife Service, Dept. of Interior, for monitoring and assessment of survey of artificial reef materials.

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
December 31, 1989

NOTE 13: FIXED ASSETS - UNRESTRICTED FUND:

	Cost	Accumulated Depreciation	Undepreciated Cost
Office Equipment, Furniture & Fixtures	$41,441	$ 30,255	$ 11,186
Automotive	13,661	8,879	4,782
Net Fixed Assets	$55,102	$ 39,134	$ 15,968

NOTE 14: COMMITMENTS:

An office lease agreement was begun on December 1, 1987 and will expire in the year 2002. The monthly lease payment for the first three (3) years is $875.00 and will be adjusted every three (3) years using the consumer price index.

NOTE 15: RELATED PARTY TRANSACTIONS:

No related party transactions are known.

NOTE 16: RETIREMENT PLAN:

In previous years, the Commission implemented a tax sheltered annuity plan for all employees that have been employed for at least six (6) months. The Commission contributes six (6) percent of the eligible employees' base pay with the amounts being fully vested upon payment by the Commission. The total expense for the year amounted to $3,157.

NOTE 17: ALLOCATION OF EXPENSES:

The expenses of providing the various grant and agreement programs and activities are summarized in the Statement of Revenue, Expenses, 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.

GULF STATES MARINE FISHERIES COMMISSION
Notes to Financial Statements
December 31, 1989

NOTE 18: INCOME TAXES:

The Commission has not formally applied for tax-exempt status, but they believe that they are tax-exempt since their revenue comes from federal grants and agreements and member state appropriations.

NOTE 19: FIXED ASSETS-RESTRICTED:

Fixed assets that have been purchased from federal grant and agreement funds and have been previously and currently charged as an expense were recorded as an asset with a related Contra account. The purpose for recording these assets is for control purposes.

NOTE 20: CHANGE OF FISCAL YEAR-END:

This operating period covers only three (3) months due to the Commission changing their year-end to December 31 which better aligns their year-end grants year-end.