MARFIN

ANNUAL REPORT
FISCAL YEAR 1989

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DONALD R. EKBERG
MARFIN Program Manager
National Marine Fisheries Service
Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702
(813) 893-3720

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I. INTRODUCTION

The Marine Fisheries Initiative (MARFIN) Program received its initial impetus from a discussion paper written by Dr. Thomas McIlwain while serving in the office of Rep. Trent Lott (R., MS): Research Needs For Information Leading To Full And Wise Use Of Fishery Resources In The Gulf Of Mexico. This paper, sometimes called the Lott-McIlwain paper, proposed an additional investment in fisheries research and development in the Gulf of Mexico in order to increase the economic contribution of underutilized species, to develop more valuable products from existing fisheries, to develop new export markets, to forecast variations in yields, and to conserve and maintain presently exploited resources.

The next step in the evolution of MARFIN was the generation and publication of the Marine Fisheries Initiative - Gulf Of Mexico Phase, which was published by the Gulf States Marine Fisheries Commission in January 1985. This publication details the research and development efforts necessary to enhance, restore and maintain fisheries in the Gulf Of Mexico.

The Lott-McIlwain paper and the Marine Fisheries Initiative publication were instrumental in convincing Congress to provide funding for the MARFIN Program. On December 4, 1985 the House and Senate allocated $2,850,000.00 for the MARFIN Program. Following approval by President Reagan on December 13, 1985, funds were reduced to $2,727,000 by the Gramm-Rudman requirement and were transferred to the National Marine Fisheries Service (NMFS) Southeast Region. In Fiscal Years 1987, 1988, and 1989 the NMFS Southeast Region received $3,500.00, $3,279,500, and $3,000,000 respectively. These funds were used initially to provide fishery management information in the red drum, shrimp, and king mackerel fisheries. For the last two years research on shrimp (including TED technology transfer) and red drum - plus other estuarine fisheries research has declined. Ocean pelagics, menhaden, marine molluscs, and endangered species research has increased.

In addition to developing and implementing long-term (three years or more) plans, the MARFIN Program is geared to address fishery management problems that require information in a shorter time frame. The NMFS Southeast Fisheries Center can frequently provide data on a new problem in less than one year if contracts rather than Financial Assistance Awards can be utilized to obtain information from states, universities and other non-Federal sources. (Fishery priorities for FY 1989 are given in the Federal Register notice (see appendix A).

The NMFS Regional Director is responsible for administering the program, with reliance primarily upon the MARFIN Program Management Board for guidance on program development and on the selection of appropriate research projects. The Board is comprised of eight members, one representative each from: 1) The Gulf States Marine Fisheries Commission; 2) The Gulf and South

Atlantic Fisheries Development Foundation Inc.; 3) The Gulf of Mexico Fishery Management Council; 4) The National Marine Fisheries Service; 5) the five Gulf states; 6) four Sea Grant programs; 7) The recreational fishery organizations; and 8) the commercial fishery organizations. The MARFIN Program Coordinator is located in the Southeast Regional Office of NMFS. During FY 1989 the members and staff were:

MARFIN BOARD MEMBERS

NATIONAL MARINE FISHERIES SERVICE

Dr. Andrew J. Kemmerer
Laboratory Director, F/SEC2
National Marine Fisheries Service, NOAA
3209 Frederic Street
Pascagoula, MS 39567

(New address)

Regional Director
National Marine Fisheries Service, NOAA
9450 Koger Boulevard
St. Petersburg, FL 333702
(813) 893-3141 FTS 826-3720

NOAA, CENTRAL ADMINISTRATIVE SUPPORT CENTER

Jean Martin-West (ex officio)
Chief, Grant Management Division
NCASC, DC7, RM 1208
11420 Rockville Pike
Rockville, MD 20852

(New address)
1335 East - West Highway
Silver Spring, MD 20910
(301) 427-2926

GULF OF MEXICO FISHERY MANAGEMENT COUNCIL (GOM FMC)

Mr. Wayne Swingle
Executive Director
Gulf of Mexico Fishery Management Council
5401 West Kennedy Boulevard, Suite 881
Tampa, FL 33609
(813) 228-2815; FTS 826-2815

ALTERNATE: Terry Leary
(Same address and phone number)

SEA GRANT

Dr. James C. Cato
Director, Sea Grant Program
University of Florida, Building 803, Rm. 4
Gainesville, FL 32611-0341
(904) 392-5870

ALTERNATE: Dr. Jack Van Lopik
Director, Sea Grant Program
Center for Wetland Resources
Louisiana State University
Baton Rouge, LA 70803
(504) 388-6710

GULF STATES MARINE FISHERIES COMMISSION (GSMFC)

Mr. Larry B. Simpson
Executive Director
Gulf States Marine Fisheries Commission
P. O. Box 726
Ocean Springs, MS 39564
(601) 875-5912

ALTERNATE: Mr. John Ray Nelson
President, Bon Secour Fisheries Inc.
P. O. Box 60
Bon Secour, AL 36511
(205) 949-7411

RECREATIONAL FISHERIES REPRESENTATIVE

Dr. Robert L. Shipp
Professor of Biology
University of South Alabama
Life Sciences Bldg, Rm. 124
Mobile, AL 36688
(205) 460-6331

ALTERNATE: Dr. Robert B. Ditton
Department of Wildlife and Fisheries Sciences
Texas A&M University
College Station, TX 77843-2258
(409) 845-5380

COMMERCIAL FISHERIES REPRESENTATIVE

Mr. Robert P. Jones
Executive Director
Southeast Fisheries Association Inc.
312 East Georgia Street
Tallahassee, FL 32301

ALTERNATE: Mr. Ralph Rayburn
Executive Director
Texas Shrimp Association
403 Vaughn Building
Austin, TX 78701
(512) 476-8446

GULF AND SOUTH ATLANTIC FISHERIES
DEVELOPMENT FOUNDATION INC. G&SAFDFI

Mr. Thomas Murray
Executive Director
Gulf & S. Atlantic Fisheries Dev. Foundation Inc.
5401 W. Kennedy Boulevard, Suite 669
Tampa, FL 33609
(813) 870-3390

ALTERNATE: Mr. Mike Voisin
Louisiana Oyster Dealers and Growers Association
P. O. Box 134
Houma, LA 70361
(504) 868-7191

GULF STATES REPRESENTATIVE

Mr. William S. Perret
Administrator, Seafood Division
Louisiana Dept. of Wildlife and Fisheries
P. O. Box 98000
Baton Rouge, LA 70898-9000
(504) 765-2370

ALTERNATE: Mr. Walter Tatum
Chief Marine Biologist
Alabama Dept. of Conservation and Natural Resources
Division of Marine Resources
P. O. Drawer 458
Gulf Shores, AL 36542
(205) 968-7576

MARFIN STAFF

PROGRAM COORDINATION

Dr. Donald R. Ekberg
MARFIN Program Manager
National Marine Fisheries Service, NOAA
9450 Koger Boulevard
St. Petersburg, FL 33702
(813) 893-3720; FTS 826-3720

Ellie Roche
Grants Specialist
(813) 893-3720; FTS 826-3720

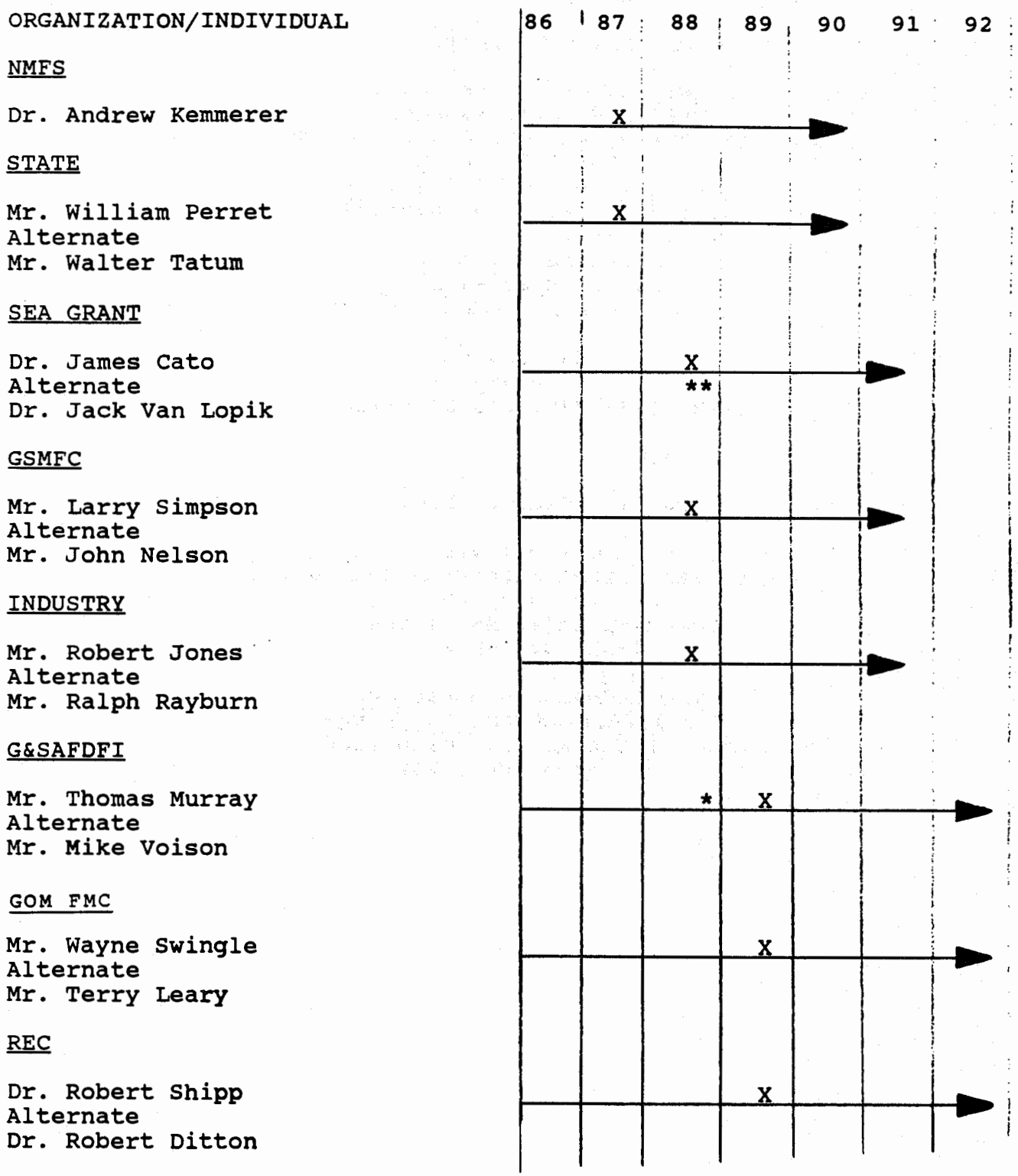
Linda Stevens
Secretary
(813) 893-3720; FTS 826-3720

MARFIN BOARD SUPPORT

Lucia O'Toole
Gulf States Marine Fisheries Commission
P. O. Box 726
Ocean Springs, MS 39564
(601) 875-5912

The ENDMARK Corporation
1215 Jefferson David Highway
Crystal Gateway 3, Suite 1106
Arlington, VA 22202

BOARD MEMBER TENURE



X = Reaffirmed
* = Tenure as Chairman reaffirmed
** = Elected Vice Chairman

II. BOARD MEETINGS

Three board meetings were held in FY 1989, February 13-14, June 13-14, and September 22. There was also a conference call on December 4. The minutes of these meetings may be found in Appendix D.

The majority of the meeting time was spent selecting priority study areas, and in choosing NMFS and non-NOAA financial assistance proposals for recommendation to the Regional Director for funding.

III. MARFIN CONFERENCE

The second annual MARFIN conference was held in New Orleans, Louisiana on September 20-21, 1989. Abstracts of this conference are contained in the conference report (see also IV. ACCOMPLISHMENTS).

IV. FINANCIAL ASSISTANCE ACTIVITIES

All necessary clearances for the Federal Register notice for financial assistance were received by late February and the notice was published in the Federal Register on March 8, 1989 (Appendix A). Fifty-nine applications were received by April 24, 1989. All of these applications were formally reviewed by SEFC, SERO, and other non-NMFS scientists prior to the Board meeting on June 13-14. This review consisted of a peer critique by three or more scientists from NMFS and other non-NOAA institutions. These critiques were then summarized by a group of NMFS scientists, who in turn, rated the applications as highly recommended, recommended, or not recommended. MARFIN Board members further received all of the previous summary and critique information. They recommended twenty-four applications for funding.

The Regional Director accepted all of the Board members' recommendations and forwarded the successful applications to the NOAA Central Administrative Support Center (NCASC) in Washington D.C. for processing. The final twenty-four financial assistance applications, the six multi-year awards (carried over from previous years), and the ten NMFS studies are listed in Tables I, II, and III. Summaries of these applications and awards, plus the studies conducted by NMFS, are given in Appendix B. Table IV lists the distribution of funds among states, Sea Grant Universities, industry and the NMFS. Figure 1 shows the percent of funds used by the four major groups (universities, NMFS, industry, and states) during 1986, 1987, 1988, and 1989. Universities, NMFS, industry, and the gulf states averaged 40.5, 26.3, 18.3 and 14.9 % respectively of the funds. State funding has declined over the initial four years of MARFIN. Industry funding rose from 1986 to 1987, but have declined from 1987 to 1989. NMFS funding has been the reverse of industry - a drop from 1986 to 1987 followed by increases in 1988 and 1989. If fishery development had received greater emphasis, the industry and perhaps the state shares would have been higher. Since a number of gulf fisheries have required recovery management, MARFIN efforts have been directed to obtain

population assessment data. This need in turn has required greater support from university and NMFS scientists. Some states - particularly Louisiana (see Table IV) have subcontracted research studies to universities.

Unfortunately, the new applications were not processed in time for obligation during FY 1989. A carryover of funds was requested for these projects in FY 1990. This request was approved, and the funds were made available in January of 1990.

Figures 2A and 2B depict the funding trends by fishery for the first four years of the MARFIN Program. Estuarine fish studies have received the greatest attention. There was, however, a gradual decrease in effort as the objectives of the Red Drum Plan were accomplished. Coastal herring work continued at a fairly even pace (FY 1987 funding was from sources other than MARFIN). Shrimp and excluder device development and technology transfer, should continue to rise now that regulations are firmly in place. Crabs and lobster research has leveled off, while endangered species (turtles), reef fish and other fisheries received moderate attention. The general category included projects that cover several fisheries and program management.

FIGURE 1
MARFIN FUNDING TRENDS

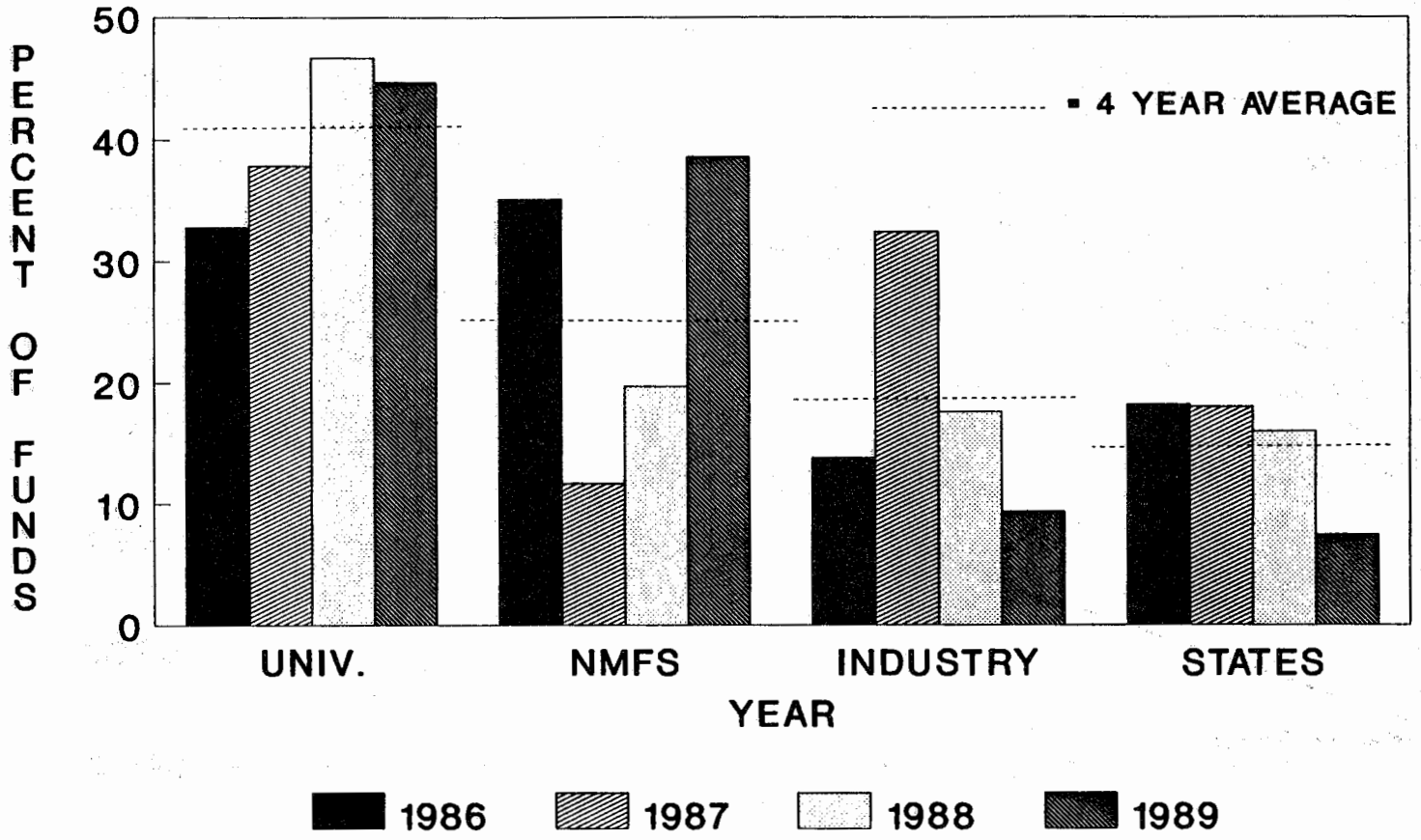


FIGURE 2A

MARFIN Fishery Funding (Cumulative)

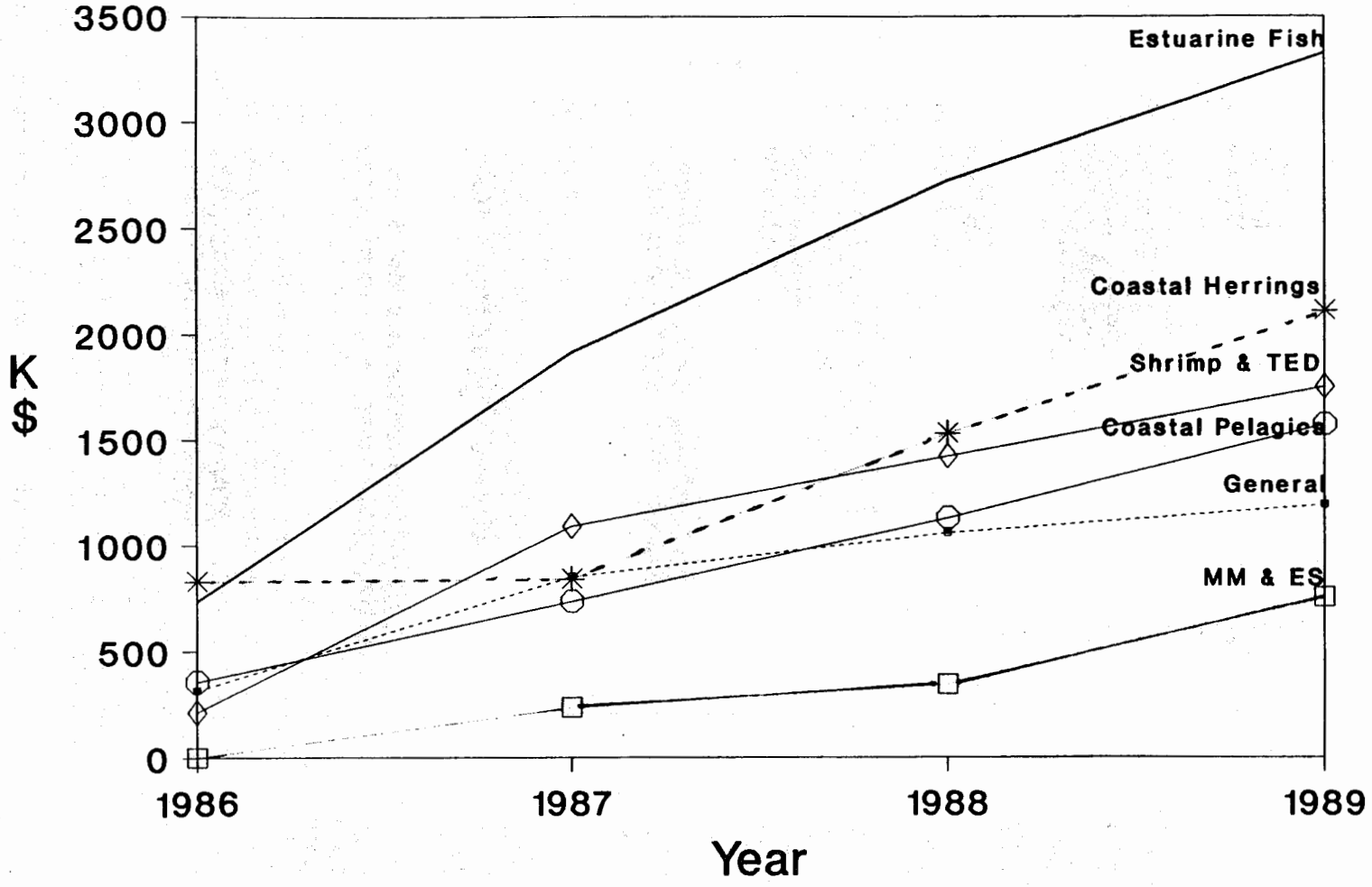


FIGURE 2B

MARFIN Fishery Funding (Cumulative)

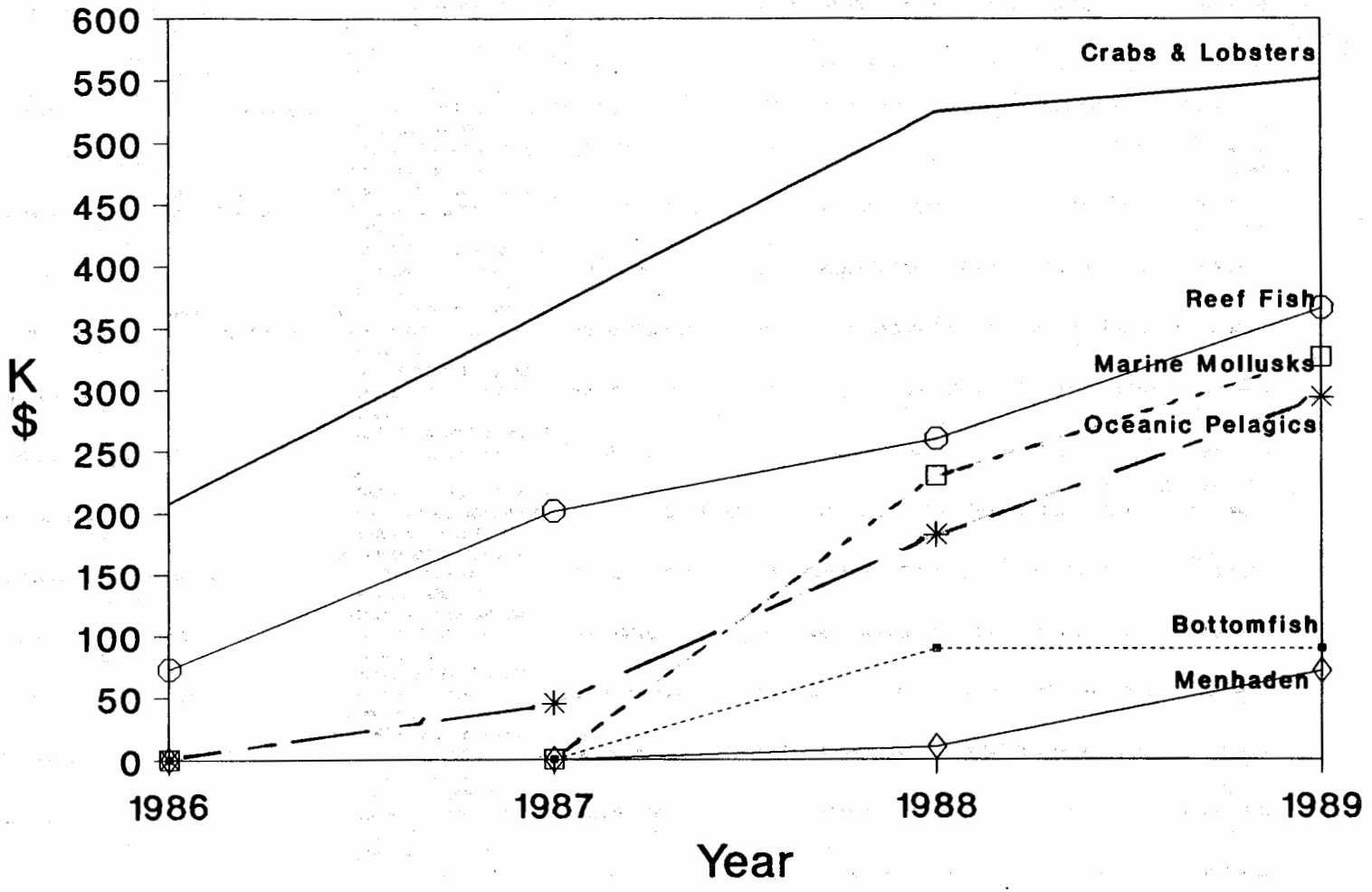


TABLE 1

1990 MARFIN COOPERATIVE AGREEMENTS (24)

GRANT#	FED#	AGYNAME	FEDNAME	CONTACT	YR/TYRS	MONITOR	STARTDAT	ENDDATE	$RECVD
91INA90AAHMF059	89MAR01.1.01	LA DEPT OF WILDLIFE & FISHERIES	ENHANCE BENEFITS FROM SHRIMP IN GOM BY OPTMZG SHRIMP MANAGEMENT IN LA	CLARK JERRY DR.	1/2	JUSTEN, MICHAEL F/SER21	03/01/90	02/28/91	$126,000.00
NA90AAHMF102	89MAR02.A.01	MARINE THERMURGICS	SHELF LIFE OF FOOD GRADE GULF MENHADEN OILS, OILS USED IN FOOD SYSTEMS	MILLER T.M.	1/1	BAUERSFELD, PAUL - F/SEC8	04/01/90	03/31/91	$30,880.00
91INA90AAHMF089	89MAR03.A.02	LSU	AGE,GROWTH,&REPRO BIOLOGY OF AMBERJACK & COBIA FROM COASTAL LA WATERS	THOMPSON BRUCE DR.	1/2	NAKAMURA, EUGENE - F/SEC3	02/01/90	01/31/91	$66,800.00
91INA90AAHMF107	89MAR03.B.02	UNIV OF MIAMI	IMPLEMT OF LOG BOOK SYS FOR SPOTTER PILOTS & FLEET CAPT RCD MACKEREL	EHRHARDT NELSON DR.	1/2	NAKAMURA, EUGENE - F/SEC3	02/01/90	01/31/91	$25,000.00
NA90AAHMF100	89MAR03.B.04	MOTE MARINE LAB	K & SPANISH MACKEREL MIGRATION & STOCK ASSESSMT STUDY IN SGOM	MAHADEVAN KUMAR DR.	1/1	NAKAMURA, EUGENE - F/SEC3	02/01/90	01/31/91	$75,950.00
91INA90AAHMF114	89MAR04.0.02	LSU	MACKEREL & REEF FISH BIOPROFILE & CATCH/EFFORT DATA COL FROM NGOM	RUSSELL SANDRA	1/3	KUMPF, HERMAN DR. - F/SEC3	02/01/90	01/31/91	$38,730.00
91INA90AAHMF088	89MAR04.H.01	UNIV OF S AL	INVEST OF LIFE HIST PARAMENTERS OF SPECIES OF SECOND REEF FISH & DOLPH	SHIPP ROBERT L. DR.	1/2	GOODYEAR, PHIL DR. - F/SEC1	02/01/90	01/31/91	$42,190.00
91INA90AAHMF099	89MAR04.K.02	GCRL	EARLY LIFE HIST OF SNAPPERS IN COASTAL & SHELF WATERS OF NCGOM	LYCZKOWSKI-SHULTZ J. DR.	1/2	HAMDOCH, CHARLES DR. - F/SEC9	02/01/90	01/31/91	$8,920.00
NA90AAHMF086	89MAR05.B.01	FL DNR	INVEST OF IN & OFFSHORE POP DYNAMICS OF SPANISH SARDINES ALONG CW FL	TORRES LINDA	1/1	KEMMERER, ANDREW DR. - F/SER	02/01/90	01/31/91	$42,790.00
91INA90AAHMF091	89MAR06.0.01	LSU	AGE, GROWTH, DIET & SPAWNING DATE OF YELLOWFIN TUNA IN MS RIVER PLUME	SHAW RICHARD DR.	1/2	GRIMES, CHURCHILL DR. - F/SEC5	02/01/90	01/31/91	$23,940.00
91INA90AAHMF094	89MAR06.D.01	LA DEPT OF WILDLIFE & FISHERIES	BIOL & CATCH/EFFORT SAMPLG FROM TUNA & SHARK FISHERIES IN NGOM	SHEPARD JOSEPH A.	1/3	TURNER, STEPHEN DR. - F/SEC1	02/01/90	01/31/91	$87,700.00
NA90AAHMF092	89MAR07.0.01	LSU	ECON ANALYSIS OF LEASING ACTIVITIES IN LA OYSTER IND. PART II	KEITHLY WALTER DR.	1/1	VONDRUSKA, JOHN DR. - F/SER	02/01/90	01/31/91	$38,300.00
91INA90AAHMF101	89MAR07.D.01	MARINE ENVIONRMENTAL SCIENCE CONSORTIUM	EVAL QUAHOG ABUNDANCE & GROWTH IN INSHORE AL & NW FL:ASSMT CLAM CULT	HECK KENNETH DR.	1/2	ZIMMERMAN, ROGER DR. - F/SEC6	02/01/90	01/31/91	$37,832.00
NA90AAHMF112	89MAR08.E.01	LSU	HABITAT SELCTN & RECRUITMT OF JUV BLUE CRABS IN LA	BALTZ DONALD DR.	1/1	ZIMMERMAN, ROGER DR. - F/SEC6	02/01/90	01/31/91	$26,787.00
NA90AAHMF090	89MAR10.0.01	GULF SPECIMEN MAR LAB	CHAR OF INSHORE POP OF KEMP'S RIDLEY TURTLE IN NEGOM	RUDLOE ANNE DR.	1/1	OGREN, LARRY - F/SEC3	02/01/90	01/31/91	$55,550.00
NA90AAHMF105	89MAR10.0.03	FL DNR	SYSTEMATIC SURVEY OF STRANDED MAR TURTLES FOR NMFS STAT ZONES 4 & 5	TORRES LINDA	1/1	THOMPSON, NANCY DR. - F/SEC1	02/01/90	01/31/91	$55,570.00
NA90AAHMF110	89MAR10.A.01	TI A&M RES FOUND	ASSESSMENT OF NONSHRIMPG MORTALITY OF SEA TURTLES	MESLER FRED	1/1	CAILLOUET, CHARLES DR. -F/SEC6	02/01/90	01/31/91	$50,000.00
NA90AAHMF085	89MAR11.0.01	FL DNR	EST SPAWNG STOCK BIOMASS & EXPLOIT/EXCAPMT RATES FOR POP BLACK MULLET	TORRES LINDA	1/1	MERRIMER, JOHN DR. - F/SEC9	02/01/90	01/31/91	$42,670.00
NA90AAHMF087	89MAR11.A.01	AL DEPT. CONS. & NAT. RES.	AGE CLASS STRUC. OF EXPLOITED RD DRUM IN N/C GOM	TATUM WALTER	1/1	NICHOLS, SCOTT DR. - F/SEC2P	02/01/90	01/31/91	$42,100.00
91INA90AAHMF093	89MAR11.A.02	LSU	VAR OF YR-CLASS STRENGTH & ANNUAL REPROD OUTPUT OF RED&BLACK DRUM NGOM	WILSON CHARLES DR.	1/3	NICHOLS, SCOTT DR. - F/SEC2P	02/01/90	01/31/91	$84,200.00
NA90AAHMF109	89MAR11.A.03	LA TECH UNIV	ALLOZYME VAR IN BLACK&RED DRUM, SPOTTED SEATROUT: STOCK	RAMSEY PAUL DR.	1/1	JOHNSON, ALLYN DR. - F/SEC3	02/01/90	01/31/91	$24,960.00

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	AGE VALIDATION OF ADULT BLACK DRUM IN FL	[illegible] LINDA	1/3	GOODYEAR, PHIL DR. - F/SEC1	[illegible]	[illegible]	$4,9[illegible]
[illegible]	[illegible]	[illegible]	UTILIZATION OF FISHERIES INDEPENDENT DATA: FUTURE MANGMT IMPLICATIONS	SHAW RICHARD DR.	1/3	NICHOLS, SCOTT DR. - F/SEC2F	02/01/90	01/31/91	$79,600.00
[illegible]	[illegible]	MARINE ENVIRONMENTAL SCIENCES CONSORTIUM	VALUE OF VEG&UNVEG HABITATS TO JUVENILE SPOTTED SEATROUT & RED DRUM	HECK KENNETH DR.	1/2	THAYER, GORDON DR. - F/SEC9	02/01/90	01/31/91	$51,900.00
									$1,202,289.00

TABLE II

1987 and 1988 MULTI-YEAR MARFIN COOPERATIVE AGREEMENTS

GRANT#	PROJ#	APPNAME	PROJNAME	YR/TYRS	$	STARTDAT	ENDDATE
7X3NA90AAHMF104	B7MAR03.2.06 (201)	UNIV OF MIAMI	LENGTH FREQ & CPUE FOR SPANISH MACKEREL OFF W FL	3/3	$44,895.00	02/01/90	01/31/91
7X3NA90AAHMF113	B7MAR11.2.07 (197)	LSU	FISHERY INDEP. CHAR. OF POP. DYN. & LIFE HIST. OF STRIPED MULLET IN LA	3/3	$51,224.00	02/01/90	01/31/91
					$96,119.00		

GRANT#	PROJ#	APPNAME	PROJNAME	YR/TYRS	$	STARTDAT	ENDDATE
8X2NA89AAHMF179	88MAR04.7.01	FL KEYS ARTIFICIAL REEF ASSOC. INC.	EVAL. OF USE OF LG FABRICATED ART. REEFS TO ENHANCE REEF POP. AT DIFFERENT DEPTHS IN FL KEYS	2/2	$16,190.00	10/01/89	09/30/90
8X2NA90AAHMF095	88MAR03.2.02 (008)	MS DEPT OF WILDLIFE FISHERIES & PARKS	MS/NMFS K & S MACKEREL SAMPLG PROG.	2/3	$26,856.00	02/01/90	01/31/91
8X2NA90AAHMF097	88MAR11.8.02 (029)	LSU	LARVAL FOOD, GROWTH, & MICRONHABITAT SELECTION: FACTORS AFFECTG RECRUITMT OF ESTUARINE-DEPENDENT FISHES IN NGOM	2/2	$73,400.00	02/01/90	01/31/91
8X2NA90AAHMF107	88MAR11.1.02 (025)	TX A&M RESEARCH FOUNDATION	POP GENETIC STUDIES OF RED DRUM IN GOM	2/2	$71,462.00	04/01/90	03/31/91
					$187,908.00		

TABLE III

1989 NMFS PROJECTS

PROJ#	APPNAME	PROJNAME	PI	STARTDAT	ENDDATE	$AWARD
89NMFS x	SERO	MARFIN PROGRAM MANAGEMENT	EKBERG, DON	10/01/88	09/30/89	$75,000.00
89NMFS01 x	SEFC, NELSON	RED DRUM STOCK ASSESSMENT ANALYSIS	NELSON, WALTER	10/01/88	09/30/89	$25,000.00
89NMFS02 x	SEFC, NELSON	CENTRALIZED TAGGING FOR RED DRUM	NELSON, WALTER	10/01/88	09/30/89	$30,000.00
89NMFS03 x	SEFC, NAKAMARA	KING AND SPANISH MACKEREL RESEARCH	NAKAMURA, EUGENE	10/01/88	09/30/89	$205,000.00
89NMFS04 x	SEFC, KEMMERER	LATENT RESOURCES RESEARCH	KEMMERER, ANDREW	10/01/88	09/30/89	$540,000.00
89NMFS05 x	SEFC, KLIMA	EVAL. OF THE IMPACTS OF TED ON SHRIMP,CATCH RATES, & BY-CATCH IN SCM	KLIMA, EDWARD	10/01/88	09/30/89	$112,000.00
89NMFS06 x	SEFC, KLIMA	SEA TURTLE STRANDING IN TX AND SW LA	KLIMA, EDWARD	10/01/88	09/30/89	$40,000.00
89NMFS07 x	SEFC, KEMMERER	TED TECH. TRANSFER	KEMMERER, ANDREW	10/01/88	09/30/89	$55,000.00
89NMFS08 x	SEFC,KEMMERER	SMALL TURTLE TED EVAL	KEMMERER, ANDREW	05/01/89	09/30/89	$35,000.00
89NMFS10 x	SERO, SCHMIED	EDUC. TOOLS FOR MAR. REC. FISHERMEN TO PROMOTE WISE USE & CONSERVATION OF GULF FISHERY RES.	SCHMIED, RON	03/01/89	09/30/89	$13,450.00
						$1,130,450.00

x = Approved by MARFIN Board

7/16/90

TABLE IV
MARFIN FUNDING FOR FY 1989
IN K$

	STATES						SEA GRANT/UNIVERSITIES					INDUSTRY	NMFS	
ORGANIZATION / USE	FL	AL	MS	LA	TX	GSMFC	FL	AL-MS	LA	TX	NAS			TOTALS
RECEIVE	145.1	61.7	26.9	213.7	0.0	7.9	69.9	160.8	507.8	121.5	210.0	215.5	1,130.4	2,871.2
USE DIRECTLY	126.2	51.7	26.9	0.0	0.0	7.9	69.9	160.8	483.0	121.5	210.0	215.5	1,107.4	2,580.8
SUBCON-OUT	18.9	10.0	0.0	213.7	0.0	0.0	0.0	0.0	24.8	0.0	0.0	0.0	23.0	290.4
SUBCON-IN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.8	213.7	0.0	0.0	51.9	0.0	290.4
TOTAL	126.2	51.7	26.9	0.0	0.0	7.9	69.9	185.6	696.7	121.5	210.0	267.4	1,107.4	2,871.2
GRAND TOTAL			212.7						1,283.7			267.4	1,107.4	2,871.2
PERCENT			7.4						44.7			9.3	38.6	100

V. ACCOMPLISHMENTS

The second annual MARFIN conference was held in New Orleans, Louisiana on September 20-21, 1989. The proceedings of the conference are available from the NMFS Regional Office. A summary of this symposium is given below:

Reef Fish - Recent information indicates that several species of reef fishes are becoming over-fished. Many of these species are taken before the age of first spawning. Since few data were available concerning age-at-length, length-frequencies of catch, and age of first spawn, these data are now being collected. Other studies include the use of large fabricated artificial reefs to enhance fish population's, and an analysis of the structure and economics of charter and party boat fishing. Grouper and snapper are the main targets of these recreational fishing activities.

Coastal Herrings - Fisheries independent data were collected on larval coastal herrings and carangids, showing segregation by location, depth, salinity, and water temperature. As an example, the Atlantic bumper were most abundant within the 40m contour, whereas, blue runner were most abundant considerably beyond this depth.

Four surveys were conducted with the NOAA Ship CHAPMAN using midwater trawls for coastal herrings. A supermesh design trawl can be operated midwater, near bottom, and on the bottom.

Upgrading survey technology for fishery-independent surveys continued with emphasis on hydroacoustics and satellite remote sensing. Applications of satellite technology for tactical direction of survey efforts with benefit for commercial fishing was continued through a cooperative pilot study with the Mississippi Office of Technology Transfer at the Stennis Space Center and with Mississippi State University. The project provided hardware with which to communicate and display near real time satellite imagery on four cooperating fishing vessels to pinpoint high probability fishing areas while at sea. An acoustic echo integrator system was acquired in FY 89 that uses two dual-beam transducers in a towed body to acquire and process in situ target strength measurements and provide estimates of biomass. This will become an important tool in fisheries survey activities once the system is operational and incorporated into survey strategy.

Herring samples were provided to a large number of potential buyers and processors. Some test marketing shows in Japan. As a result of not being able to respond to many questions related to handling and processing of coastal herrings and butterfish, the Charleston Laboratory in cooperation with the Mississippi Laboratories entered into a formal cooperative research agreement with Mississippi State University to establish an experimental seafood processing plan in Pascagoula to help solve handling and processing problems.

Technology transfer continued to be emphasized through workshops, demonstrations, and direct technical assistance with much of it done in cooperation with Sea Grant. Work was directed at encouraging fishermen to try the new butterfish fishery, and to

develop information for the cooperative study to demonstrate the use of computers and communication systems on Gulf fishing vessels to evaluate satellite assisted fishing operations.

NOAA - Fisheries and the State of Mississippi (Mississippi Department of Economic and Community Development and Mississippi State University) developed a system to use satellite images of sea-surface temperature to predict favorable fishing locations for butterfish in the northern Gulf of Mexico (Figure 1). Satellite images and fish locations charts are digitally transferred via cellular phone to fishing vessel at sea. Images can then be displayed on a computer onboard the ship. The software makes use of an expert computer onboard the ship. The software makes use of an expert system shell to decide on the best areas to fish. The expert system uses horizontal temperature gradients, bottom depth, sea-surface temperature, moon phase, and the location of eddies and fronts relative to local bathymetric features to decide on the best fishing zones. Incomplete and inexact data are handled by the expert system using the concept-of-certainty factors.

Imagery and fishing charts were successfully transmitted to four fishing vessels on 19 separate occasions during April 1989. The excellent cellular phone communications in the northern Gulf of Mexico provided this opportunity. Fishing results are still being evaluated and used to refine the butterfish prediction model. All vessel captains were extremely pleased with the system in the fall fishing season. The average catch rates for the areas designated as good fishing by the model exceeded 3000 kilograms per hour.

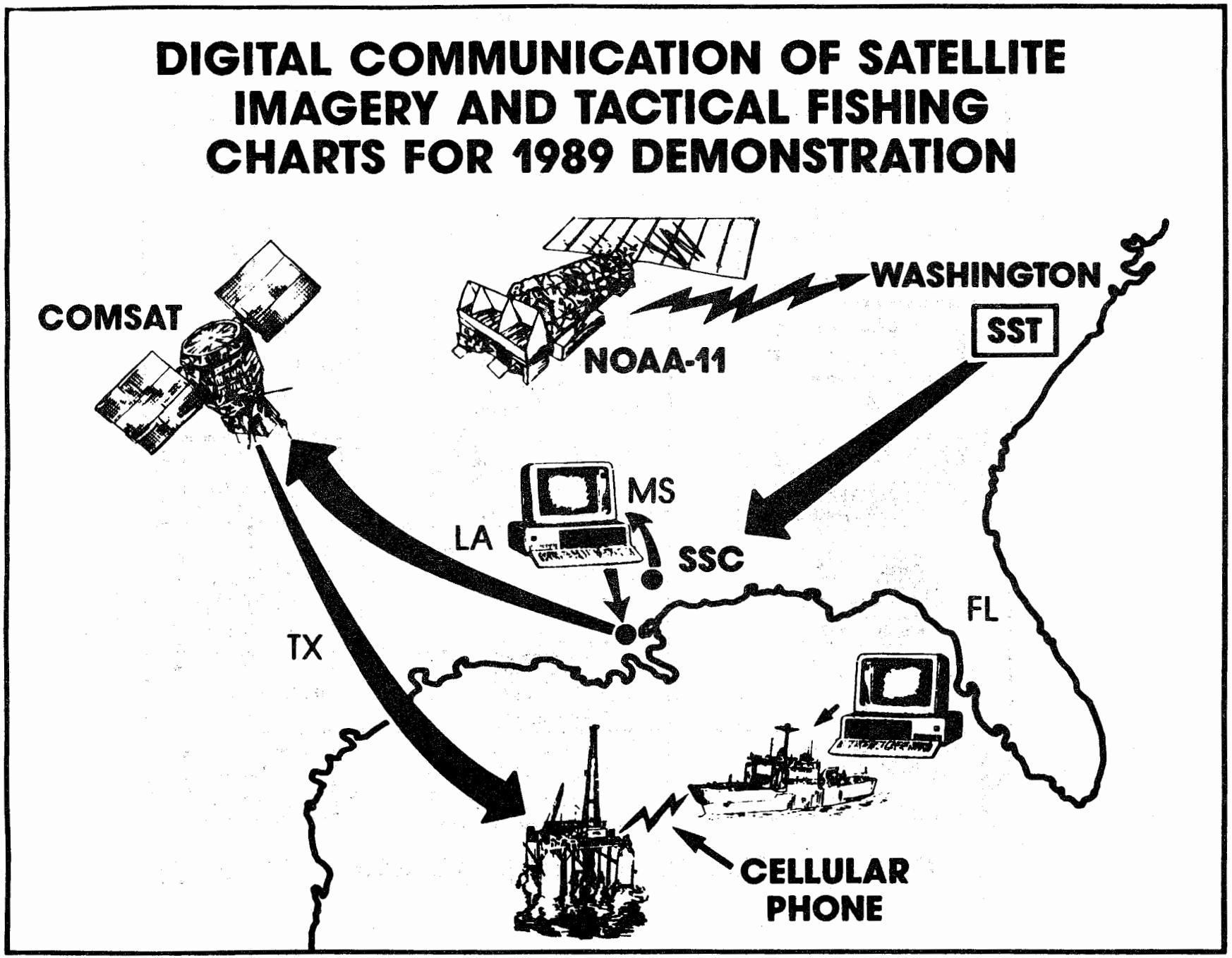
The hardware and software costs to equip a fishing vessel with computer and cellular phone communications are less than $4,000.00 U.S.

A hydroacoustic system was acquired for use with the NOAA Ship CHAPMAN. The system consists of a sounder, 120 kHZ and 38 kHZ dual beam transducers mounted in a towed body, display and recording equipment and an echo signal processor (Figure 2). An initial cruise with the hydroacoustic equipment was successful. More experience in analyzing and interpreting acoustic data collected from the Gulf of Mexico is needed before reliable estimates of abundance can be made. The hydroacoustic system, along with high opening bottom trawls and a high speed semi-pelagic trawl will be used to survey coastal herrings.

Ocean Pelagics

Effort in the yellowfin tuna fishery is concentrated in the northern Gulf of Mexico between 26° and 28° N latitude and west of 88° W longitude. Correlations with fronts are now being investigated.

Using data from Japanese longline fishing in the 1960's and 1970's, studies to reduce billfish bycatch are underway. Factors such as bait type, water temperature, barometric pressure, hook depth, and other environmental factors are being studied.


DIGITAL COMMUNICATION OF SATELLITE IMAGERY AND TACTICAL FISHING CHARTS FOR 1989 DEMONSTRATION
COMSAT
NOAA-11
WASHINGTON
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CELLULAR PHONE

Figure 3

Components of Hydroacoustic System

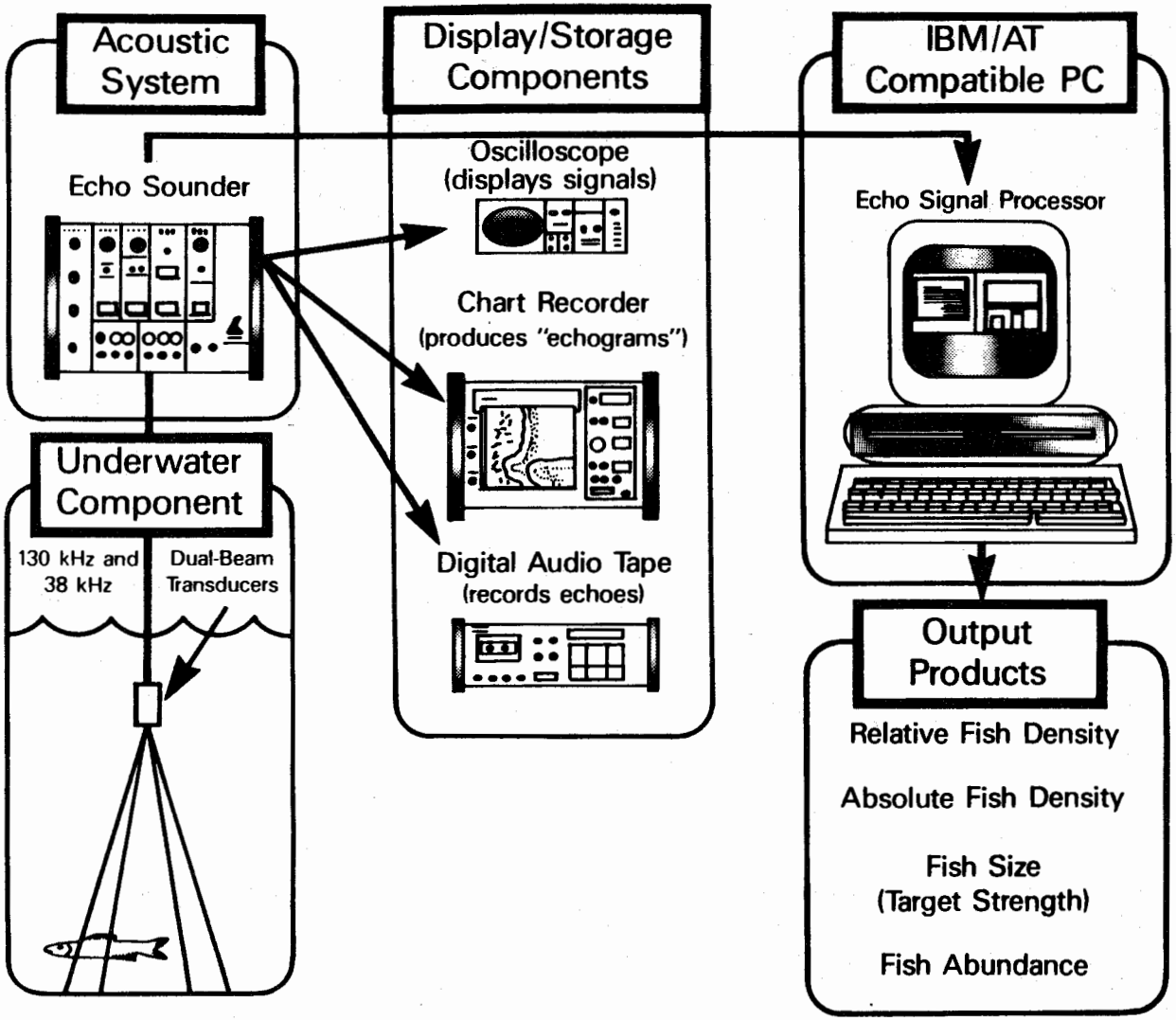


FIGURE 4

Crabs, lobsters, and Mollusks

The catch of deepsea red crabs has been about 200 - 250 crabs using 6 or 8 traps at a depth of 370 - 470 fathoms.

Louisiana accounts for 25-35% of the nation's oyster production. the private oyster base area is about 300,000 acres.

Estuarine Fish

The major thrust of the MARFIN program continues to be in the near shore fisheries. Red drum has received considerable attention, with other species such as black drum and mullet being studied to a lesser extent. In addition to extensive biological sampling, socioeconomic profiles have been conducted. Red drum recreational anglers average about forty years of age and fish closer to home than other angling groups. Many of these fishermen are retired and have a lower income than other fishing groups.

Coastal Pelagics

King and Spanish mackerel have been major targets of study since the inception of the MARFIN Program. Data collected about these species have allowed the determination of catch limits as follows:

Acceptable biological catches: Stock assessment personnel determined ABCs for the 1988-89 fishing year as follows:

Stock	Fishing year	Million pounds ABC	TAC
Atlantic			
King mackerel	Apr 1, 1989 to Mar 31, 1990	6.9-15.4	9.00
Spanish mackerel	Apr 1, 1989 to Mar 31, 1990	4.1-7.4	6.00
Gulf			
King mackerel	Jul 1, 1989 to Jun 30, 1990	2.7-5.8	4.25
Spanish mackerel	Jul 1, 1989 to Jun 30, 1990	4.9-6.5	.25

Total allowable catches were established by the fishery management councils, as required by the fishery management plan, the TACs were set within the range of ABCs (see Figures 3 and 4).

Menhaden

Menhaden have provided the largest catch of fish in the U. S. Landings averaging 2.67 billion pounds per year (1983-1988). Yet the industry received only $34.6 million for 281 million pounds of fish oil. If food-grade Gulf menhaden (FGGM) can be made, which is not only acceptable to the public, but passes food safety standard, the industry could realize a much larger return on these plentiful fish. Processing experiment have produced food-grade fish oil, broth, puree, and mince for chowders, fish cakes, sauces, stuffing, salad dressing, casseroles, and sausages.

Endangered Species

Sea turtle stranding data have been assembled by aerial surveys and beach surveys. There is a correlation between shrimping effort and strandings in some areas. Necropsies are of use mainly on fresh carcasses, but all carcasses do provide some information.

Shrimp

Since shrimp trawls are non-selective with regard to target species, turtles and bottom fish are harvested. Turtle excluder devices (TED's) exclude by-catch as well as turtles. Thus, efforts are underway to transfer TED technology to the shrimping industry.

TED technology transfer assistance was provided to individual fishermen, industry associations, Sea Grant, and state and federal agencies. Group workshops and demonstrations were provided in Georgia, Florida, South Carolina, North Carolina, Louisiana, and Alabama.

King Mackerel, US Gulf
Catch in Pounds

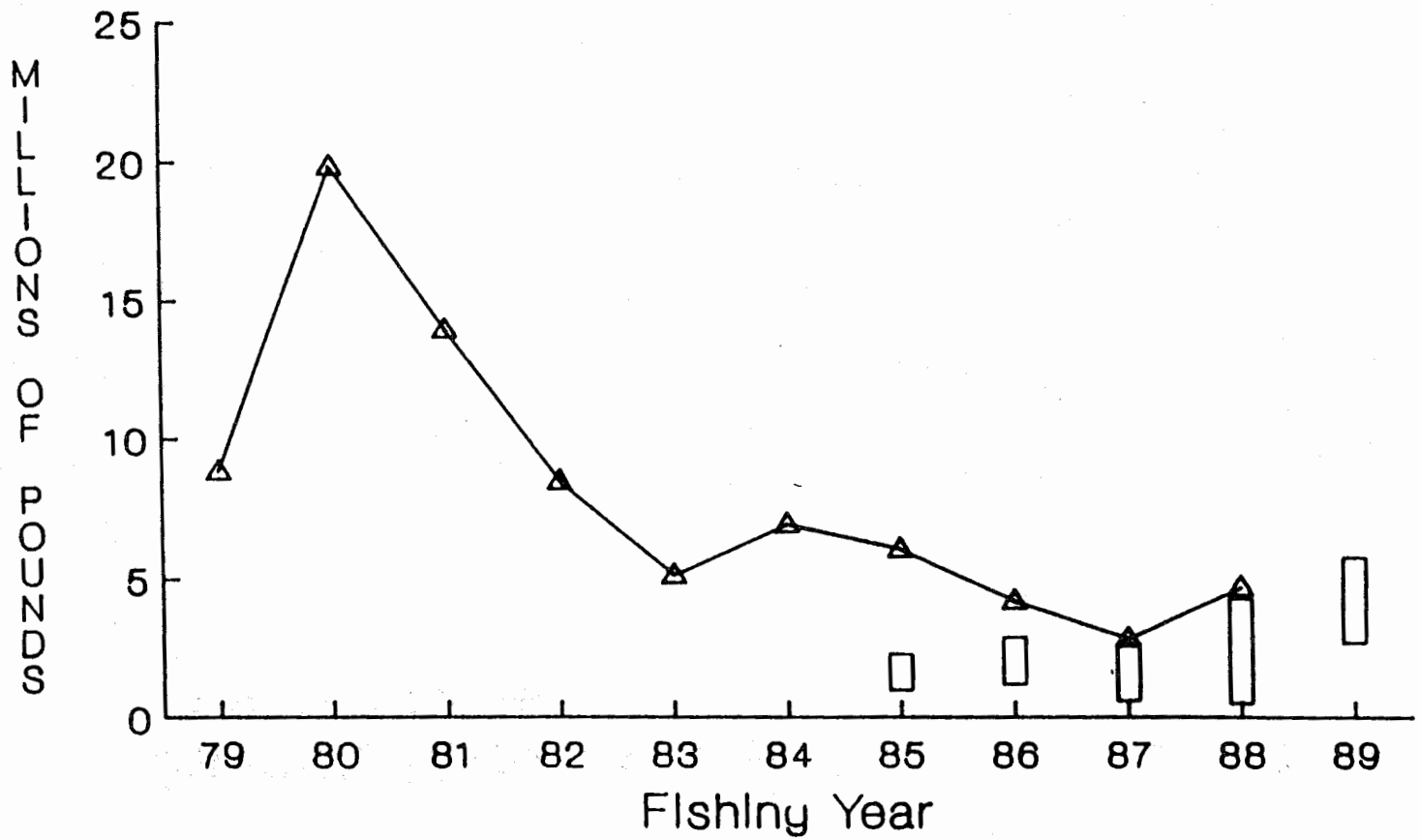
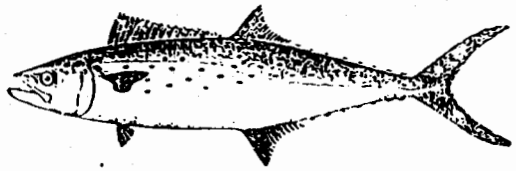


FIGURE 5



Spanish Mackerel, US Gulf

Catch in Pounds

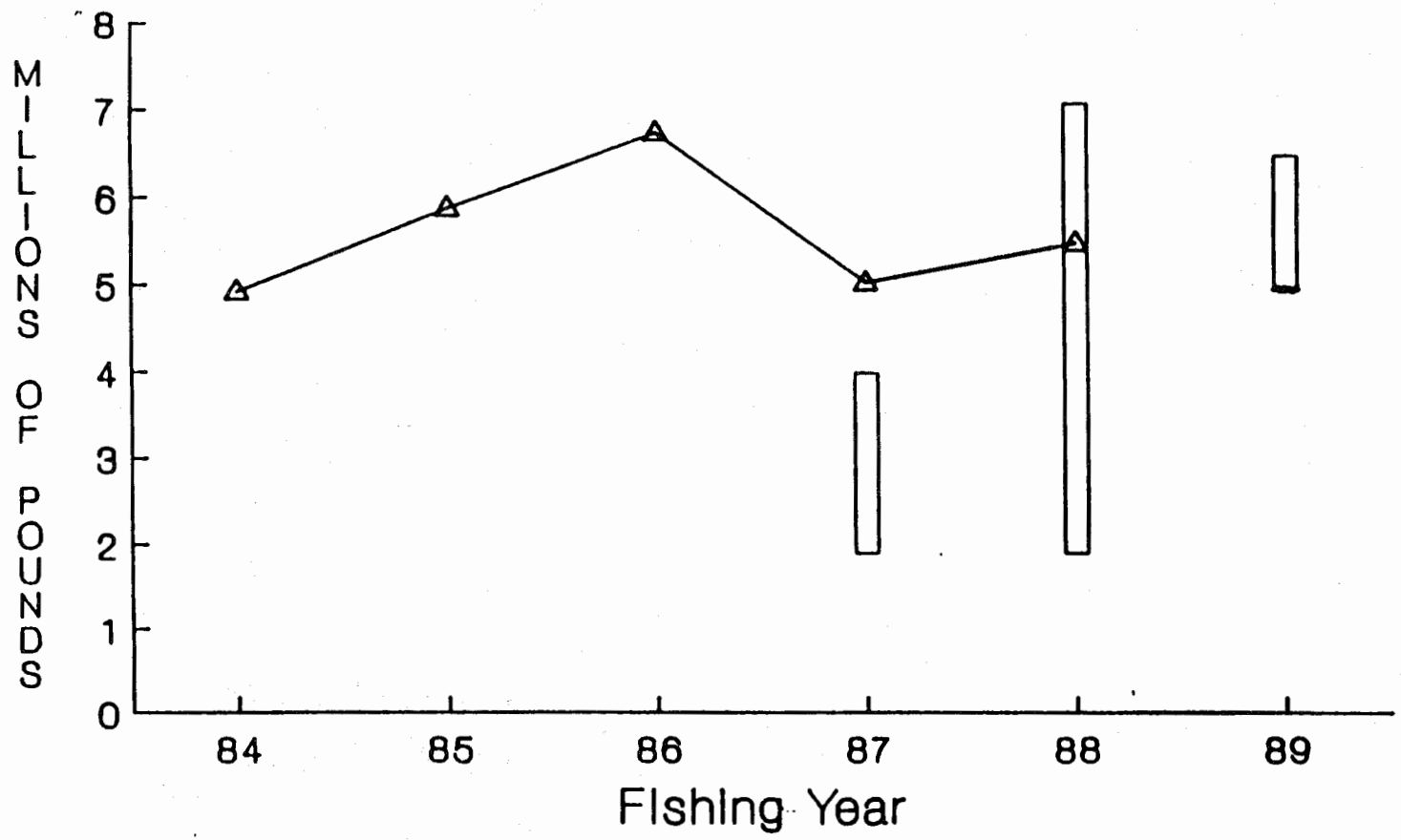


FIGURE 6

The Texas closure (about 45 days) produced an increase in brown shrimp landings of 3.8%, and an increase in white shrimp landings of 7.6%. The overall revenue was increased 3.9%.

TED's are purported to decrease the catch of shrimp as well as bycatch and turtles. If a 5% loss is considered as an example, or any other all loss scenario, the decrease in landings and revenue is less than the associated TED % loss. This is a result of lost shrimp being allowed to grow and migrate to other depths to be caught at a larger size. Because of this, the more shallow offshore depths fisheries will suffer more than the further offshore fisheries. For any given region, the decrease in landings of larger shrimp is less than the decrease in landings of smaller shrimp.

Because of different fishing patterns in the 4 regions, some regions will be more impacted by the TED loss than others. The Florida pink shrimp fishery, for example, is predominantly an offshore fishery from 11 to 20 fathoms in which the benefit of smaller shrimp escape 0 to 10 fathoms cannot be realized fully. The Texas fishery for brown and white shrimp, on the other hand, would appear to suffer the least impact from the use of TEDs. This is because the fishing effort is more evenly distributed throughout all depth zones enabling the fishery to realize the benefits of near shore shrimp escape. Again, the near shore vessels will suffer at the expense of the vessels which fish further offshore. Because of the greater number of vessels that fish further offshore, however, these offshore vessel class will suffer a greater overall loss in rent to the fleet.

The increase in inshore shrimp fishing in Louisiana from 1977 to 1988 may be due to the decline in economic activity in offshore oil and gas. 72% of these shrimpers used trawls, 15% used butterfly nets, and 13% used a combination of both.

General

A video training program was developed for fishing tournament directors and managers to facilitate safety and resource awareness. The five tape series is available from Florida Sea Grant.

The giant snake eel (Keoghfish) is caught at depths of 140-500 ft. on soft bottoms. This high protein, low fat resource has good acceptability in foreign markets, but the abundant number of bones makes this fish less acceptable domestically.

Saltwater recreational anglers were given information (brochures, video) stressing the need to comply with fishing regulations and to release fish rather than keeping them.

APPENDIX A

FEDERAL REGISTER NOTICE

Intended Use: See notice at 53 FR 31077, August 17, 1988.

Instrument Ordered: December 23, 1987. *Reasons for this Decision:* The foreign instrument provides a field emission electron source and a guaranteed resolution of 8.0 angstroms *Advice Submitted By:* The National Institutes of Health, September 27, 1988.

Comments: None received. *Decision.* Approved. No instrument or apparatus of equivalent scientific value to the foreign instrument, for such purposes as each is intended to be used, was being manufactured in the United States at the time the foreign instruments were ordered.

The capabilities of each of the foreign instruments described above are pertinent to each applicant's intended purpose and we know of no instrument or apparatus of equivalent scientific value to either of the foreign instruments for the applicant's intended use which was being manufactured in the United States at the time the foreign instruments were ordered

Frank W. Creel.

Director, Statutory Import Programs Staff

[FR Doc. 89-5423 Filed 3-7-89; 8:45 am]

BILLING CODE 3510-DS-M

National Oceanic and Atmospheric Administration

[Docket No. 90119-9019]

Financial Assistance for Research and Development Projects To Provide Information for the Full and Wise Use and Enhancement of Fishery Resources in the Gulf of Mexico

AGENCY: National Marine Fisheries Service (NMFS), NOAA, Commerce.

ACTION: Notice of availability of financial assistance.

SUMMARY: For fiscal year 1989, Marine Fisheries Initiative (MARFIN) funds are available to assist persons in carrying out research and development projects which optimize the use of a U.S. Gulf of Mexico fishery involving the U.S. fishing industry (recreational or commercial) including, but not limited to, harvesting methods, economic analyses, processing, fish stock assessment, and fish stock enhancement. NMFS issues this notice describing the conditions under which applications will be accepted and how NMFS will determine which applications will be funded.

DATE: Applications must be received by April 24, 1989. Applications received after that date will not be considered for funding.

ADDRESS: Send applications to Southeast Regional Office, 9450 Koger Boulevard, National Marine Fisheries Service, St. Petersburg, Florida 33702.

FOR FURTHER INFORMATION CONTACT: Dr. Donald R. Ekberg, 813-893-3720.

SUPPLEMENTARY INFORMATION:

Classification

NMFS reviewed this solicitation in accordance with Executive Order 12291 and the Department of Commerce guidelines implementing that Order. This solicitation is not "major" because it is not likely to result in (1) an annual effect on the economy of $100 million or more; (2) a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions; or (3) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets. This notice does not contain policies with sufficient Federalism implications to warrant preparation of a Federalism assessment under E.O. 12612. Prior notice and an opportunity for public comments are not required by the Administrative Procedure Act or any other law for this notice concerning grants, benefits, and contracts. Therefore, a regulatory flexibility analysis is not required for purposes of the Regulatory Flexibility Act. Information collection requirements contained in this notice have been approved by the Office of Management and Budget (OMB clearance No. 0648-0175) under the provisions of the Paperwork Reduction Act. This program is subject to the provisions of Executive Order 12372.

I. Introduction

Section 3049(e) of the Magnuson Fishery Conservation and Management Act (16 U.S.C. 1854(e)) authorizes the Secretary to conduct research to enhance U.S. fisheries. The Departments of Commerce, Justice, and State, the Judiciary, and related Agencies Appropriation Act of 1989 makes funds available to the Secretary of Commerce for fiscal year 1989. This solicitation makes available approximately $2.0 million (including $315 thousand for continuing projects) for financial assistance under the MARFIN program to manage and enhance the use of fishery resources in the Gulf of Mexico. There is no guarantee that sufficient funds will be available to make awards for all approved projects. U.S. fisheries [1] include any fishery that is or may be engaged in by U.S. citizens. The phrase "fishing industry" includes both the commercial and recreational sectors of U.S. fisheries.

II. Funding Priorities

Fishery research and development proposals should be related to one or more of the priority areas listed below (in no rank order):

1. *Shrimp.* (a) Development of improved gear efficiency, on-board handling, grading, sorting and preservation methods, and methods to reduce catch of non-target species, (b) determination of social and economic impacts of turtle excluder devices (TEDs), (c) evaluation of alternative harvesting (other than otter trawls), handling and processing systems, (d) identification of numbers and types of fishing vessels and gear now in use, trends in capital inputs into the fleet, and assessment of multiple uses of shrimp trawlers in other fisheries, (e) characterization (catch, effort, size, etc.) and determination of impacts of the bait shrimping industry, (f) characterization (catch, effort, size, etc.) and determination of impacts of recreational shrimping, (g) assessment of impact of imported shrimp on domestic price structure, economics of the domestic industry and relationship to fishery management actions which influence the sizes of shrimp being landed, (h) methods to reduce conflicts between shrimp trawlers and other marine resource user groups, and (i) assessment and management strategies for white shrimp.

2. *Menhaden.* (a) Economic enhancement of products (surimi, oil, and food additives) for human consumption, and (b) prey-predator relationships.

3. *Coastal Pelagics.* (a) Determination of recruitment indices for king and Spanish mackerel, cobia, and dolphin (fish), (b) identification of king and Spanish mackerel management units, (c) development of methods to solve problems of competition between recreational and commercial fishermen, and (d) stock assessment for and economic analysis of fishing strategies for harvest of blue runners, little tunny, and related species.

[1] For purposes of this notice, a fishery is defined as one or more stocks of fish, including runs, and shellfish which are identified as a unit based on geographic, scientific, technical, recreational and economic characteristics, and any and all phases of fishing for such stocks. Examples of a fishery are Gulf of Mexico shrimp, groundfish, menhaden, etc.

4. *Reef Fish.* (a) Determination of socioeconomic impacts of recreational and commercial fishing, (b) determination of recruitment processes for shallow and deep-water reef fish, (c) identification of reef fish management units, (d) development of methods to solve problems of competition between recreational and commercial fishermen, (e) determination of trends in fishing effort for inshore and offshore fisheries, (f) determination of size composition by species for inshore and offshore fisheries, (g) determination of the role of artificial reefs and reef site location in productivity, (h) stock assessment information on secondary target species such as triggerfish, amberjack, etc., (i) analysis of biological and economic impacts of bottom longline depth-specific management strategies, (j) compilation of existing data on location and areal extent of reef fish habitats, and (k) development of rearing techniques for early life history stages of red snapper.

5. *Coastal Herrings.* (a) Handling and processing, shoreside methods, and product development, (b) resource surveys and gear development, (c) economic analysis of harvesting, handling, and processing systems, (d) assessment of predator-prey relationships, particularly with respect to recreational and commercial impacts, and (e) analysis of impacts of localized stock harvest and/or environmental perturbations on predator populations.

6. *Ocean Pelagics.* (a) Development of species-selective fishing gear, including longline methods, (b) determination of social and economic impacts of alternative fishing methods, (c) development of methods to determine recreational fishing participation, and (d) characterization of the Gulf longline fishery (including fish caught, participants, and landings).

7. *Marine Molluska.* (a) Development of methods for onshore and offshore oyster depuration systems, (b) development of guidelines for oyster reef expansion, rehabilitation, and management, (c) development of improved oyster varieties, culture methods, and technology transfer, and (d) determination of baseline information for a quahog fishery.

8. *Crabs and Lobsters.* (a) Determination of safe harvest potential for deepwater crabs, (b) development of methods to quantify the recreational blue crab fishery, (c) determination of conflicts and methods of resolution among blue crab user groups, (d) development of information for population assessment of blue crab stocks, and (e) life history studies and habitat requirements of early juvenile blue crabs.

9. *Bottomfish.* (a) Assessment of impact of shrimp trawling on bottomfish stocks, (b) determination of life history of Gulf butterfish, (c) development of methods to reduce incidental trawl catch of bottomfish, (d) assessment of biological, social, and economic impact of incidental catch reduction, and (e) evaluation of product development options fof Gulf butterfish and harvest fish.

10. *Marine Mammals and Endangered Species.* Assessment of nonshrimping mortality of sea turtles, using available data.

11. *Estuarine Fish.* (a) Improving estimates of age structures and catches of red and black drums, (b) measurement of escapement rate of inshore red drum juveniles to offshore stock, (c) determination of potential to develop an eel fishery, and (d) enhancing knowledge of recruitment of early juvenile stages of economically important sciaenids, including habitat requirements.

12. *General.* (a) Conduct social and economic research applicable to each Gulf of Mexico fishery including costs and returns plus production function analysis, demand analyses on recreational and commercial fisheries, economics of recreational or commercial multi-species fisheries, and analysis of foreign trade barriers affecting Gulf of Mexico fisheries; (b) description of procedures to implement limited entry for existing or developing fisheries such as reef fish, shark, stone crab, or butterfish, and (c) development of alternative methods to handle or use by-products generated from seafood processing common to the Gulf of Mexico.

MARFIN financial assistance for projects started in fiscal year 1988. For fiscal years 1986, 1987, and 1988 awards totaled ($5.288 million). Funding by fisheries was as follows:

	Thousands of dollars	Percent of total
1. Shrimp (includes TED technology transfer)	1,044.1	19.7
2. Menhaden	10.0	0.2
3. Coastal pelagics	666.9	12.6
4. Reef fish	256.9	4.9
5. Coastal herrings	284.3	5.4
6. Ocean pelagics	182.1	3.4
7. Marine molluska	230.0	4.3
8. Crabs and lobsters	478.4	9.1
9. Bottomfish	88.1	1.7
10. Marine mammals and endangered species	127.0	2.4
11. Estuarian fish	1,798.9	34.0
12. General	116.7	2.2

Priority in program emphasis will be placed upon funding projects which have the greatest probability of maintaining and improving existing fisheries, improving our understanding of factors affecting recruitment success, generating increased yields from fisheries, and generating increased recreational opportunity and harvest potential. Projects will be evaluated as to the likelihood of achieving these benefits through both short-term and long-term research projects with consideration of the magnitude of the eventual benefit that may be realized. Both short-term projects that may yield more immediate benefits and long-term projects yielding greater benefits will receive equal emphasis. Planning emphasis will be placed upon attaining each discrete target benefit either through a single project or series of projects necessary to attain that goal.

Further information on current programs that address the above listed priorities may be obtained from the NOAA National Marine Fisheries Service's Southeast Regional Office.

III. How to Apply

1. Eligibility Applicants

Applications for grants or cooperative agreements for MARFIN projects may be made, in accordance with the procedures set forth in this notice, by:

(a) Any individual who is a citizen or national of the United States;

(b) Any corporation, partnership, or other entity, non-profit or otherwise, if such entity is a citizen of the United States within the meaning of section 2 of the Shipping Act, 1916 as amended (46 U.S.C. 802).[3]

[3] To qualify as a citizen of the United States within the meaning of this statute, citizens or nationals of the United States or citizens of the Northern Mariana Islands (NMI) must own less than 75 percent of the interest in the entity or, in the case of a non-profit entity, exercise control of the entity that is determined by the Secretary to be equivalent to such ownership; and in the case of a corporation, the president or other chief executive officer and the chairman of the board of directors must be citizens of the United States. No more of its board of directors than a minority of the number necessary to constitute a quorum may be non-citizens; and the corporation itself must be organized under the laws of the United States, or of a State, including the District of Columbia, Commonwealth of Puerto Rico, American Samoa, the Virgin Islands of the United States, Guam, the NMI or any other Commonwealth, territory, or possession of the United States. Seventy-five percent of the interest in a corporation shall not be deemed to be owned by citizens of the

Continued

NOAA will consider not awarding a grant or cooperative agreement to any individual or organization who is delinquent on a debt to the Federal government until payment is made or satisfactory arrangements are made with the agency to whom the debt is owed. Any first time applicant for Federal grant funds is subject to a preaward accounting survey prior to execution of the award. Women and minority individuals and groups are encouraged to submit applications. NOAA employees including full, part-time, and intermittent personnel, (or their immediate families) and NOAA offices or centers are not eligible to submit an application under this solicitation, or aid in the preparation of an application, except to provide information about the MARFIN program and the priorities and procedures included in this solicitation.

2. Amount and Duration of Funds

Under this solicitation for fiscal year 1989 an estimated $2.0 million will be available to fund fishery research and development projects ($1.69 million for new projects and $315 thousand for continuing projects). Although grants or cooperative agreements will generally be awarded for a period of one year, two- or three-year projects may be approved for funding in subsequent years. Once approved, multi-year projects will not compete for funding in subsequent years. For multi-year projects, funding beyond the first year is contingent on the availability of program funds in subsequent fiscal years and the extent to which project objectives and reporting requirements are met during the prior year. Publication of this announcement does not obligate NMFS to award any specific grant or to obligate all or any part of the available funds. Selection of successful applications generally will be provided by June 6, 1989. Awards generally will be made no later than 60 days after the funding selection is determined and negotiations completed.

NMI, if: (1) The title to 75 percent of its stock is not vested in such citizens or nationals of the United States or citizens of the NMI free from any trust or fiduciary obligation in favor of any person not a citizen or national of the United States or citizens of the NMI; (2) 75 percent of the voting power in such corporation is not vested in citizens or nationals of the United States or citizens of the NMI; (3) through any contract or understanding it is arranged that more than 25 percent of the voting power in such corporation may be exercised, directly or indirectly in behalf of any person who is not a citizen or national of the United States or a citizen of the NMI; or (4) by any means whatsoever, control of any interest in the corporation is conferred upon or permitted to be exercised by any person who is not a citizen or national of the United States.

3. Cost-Sharing Requirements

Applications must reflect the total amount of money necessary to accomplish the project including contributions and/or donations. Cost sharing is not required for the MARFIN program. However, cost sharing is encouraged, and in case of a tie in considering proposals for funding, cost-sharing may affect the final decision. The appropriateness of all cost-sharing will be determined on the basis of guidance provided in Office of Management and Budget (OMB) circulars. Appropriate documentation must exist to support in-kind services or property used to fulfill cost-sharing requirements.

4. Format

Applications for project funding must be complete. They must identify the principal participants and include copies of any agreements between the applicant and the participants describing the specific tasks to be performed. Project applications should give a clear presentation of the proposed work, the methods for carrying out the project, its relevance to managing and enhancing the use of Gulf of Mexico fishery resources and cost estimates as they relate to specific aspects of the project. Budgets will include a detailed breakdown by category of expenditure with appropriate justification. Applicants may submit two or more related projects under one proposal but must identify project costs including administrative costs, separately for each individual project. Applicants should not assume prior knowledge on the part of the NMFS as to the relative merits of the project described in the application. Applications must be submitted in the following format:

(a) *Cover Sheet.* An applicant must use OMB Standard Form 424 (revised 4/88) as the cover sheet for each project or group of consolidated projects. Applicants may obtain copies of the form from the NMFS Regional Offices, or Department of Commerce's Central Administrative Support Center (CASC); addresses are set forth at Section E., Application Submission.

(b) *Project Summary.* Each project must contain a summary of not more than one page which provides the following information:

(i) Project title;

(ii) Project status: (new or continuing);

(iii) Project duration: (beginning and ending dates);

(iv) Name, address, and telephone number of applicant;

(v) Principal Investigator(s);

(vi) Project objective; and

(vii) Summary of work to be performed.

For continuing projects the applicant is to briefly describe progress to date in addition to any changes to the statement of work previously submitted.

(viii) Total Federal funds requested (for multi-year projects, identify each year's requested funding).

(ix) Project costs (matching funds) to be provided from non-NOAA sources (for multi-year projects, identify each year's requested funding). Specify whether cash or in-kind contributions.

(x) Total project cost.

(c) *Project Description.* Each project must be completely and accurately described. Each project description may be up to 15 pages in length. The NMFS will make all portions of the project description available to the public and members of the fishing industry for review and comment; therefore, NMFS cannot guarantee the confidentiality of any information submitted as part of any project nor will NMFS accept for consideration any project requesting confidentiality of any part of the project. Each project must be described as follows:

(i) Identification of Problem(s). Describe how existing conditions prevent the full use of Gulf of Mexico fishery resources. In this description, identify (1) the fisheries involved, (2) the specific problem(s) that the fishing industry has encountered, (3) the sectors of the fishing industry that are affected, and (4) how the problem(s) prevent the fishing industry from using the fishery resources.

(ii) Project Goals and Objectives. State what the proposed project will accomplish and describe how this will eliminate or reduce the problem(s) described above. For multi-year projects, describe the ultimate objective of the project and how the individual tasks contribute to reaching the objective. Describe the time frame in which tasks would be conducted.

(iii) Need for Government Financial Assistance. Explain why other fund sources cannot fund all the proposed work. List all other sources of funding which are or have been sought for the project.

(iv) Participation by Persons or Groups Other Than the Applicant. Describe the level of participation required in the project(s) by NOAA or other government and non-government entities. Specific NOAA employees should not be named in the proposal, even though the applicant may wish to acknowledge government expertise in an allied area.

(v) Federal, State, and Local Government Activities. List any programs (federal, state, or local government or activities, including State Coastal Zone Management Programs, Sea Grant, Southeast Area Monitoring and Assessment Program, Pub. L. 99-659 and Cooperative Statistics), this project would affect and describe the relationship between the project and those plans or activities.

(vi) Project Outline. Describe the work to be performed during the project, starting with the first month's work and continuing to the last month. Identify specific milestones that can be used to track project progress. For multi-year projects, major project tasks and milestones for future years must also be identified. If the work described in this section does not contain sufficient detail to allow for proper technical evaluation, the NMFS will not consider the application for funding and will return it to the applicant.

(vii) Project Management. Describe how the project will be organized and managed. Include resumes of principal investigators. List all persons directly employed by the applicant who will be involved in the project, their qualifications, and their level of involvement in the project.

(viii) Monitoring of Project Performance. Identify who will participate in monitoring of the project.

(ix) Project Impacts. Describe the impact of the project in terms of anticipated increased landings, production, sales, exports, product quality, safety, or any other measurable factors. Describe the specific products or services that will be produced by this project. Describe how these products or services will be made available to the fishing industry.

(x) Evaluation of Project. The applicant is required to provide an evaluation of project accomplishments in the final report. The application must describe the methodology or procedures to be followed to determine technical or economic feasibility, to evaluate consumer acceptability, or to quantify the results of the project in promoting increased landings, production, sales, exports, product quality, safety, or other measurable factors.

(xi) Total Project Costs. Total project costs is the amount of funds required to accomplish the proposed statement of work (SOW), and includes contributions and donations. All costs must be shown in a detailed budget. No cost-sharing can come from another Federal source. Costs must be allocated to the Federal share and non-NOAA share provided by the applicant or other sources. Non-NOAA costs are to be divided into cash and in-kind contributions. A standard budget form (ED-357 NG; Rev. 3-80) is available from the offices listed in section E. A separate budget must be submitted for each project. An applicant submitting a multi-year project must submit two budgets: one covering total project costs (including individual costs per year) and one covering the initial funding request for the project. The initial funding request should cover funds required during the first 12-month period. NMFS will not consider fees or profits as allowable costs for grantees. To support its budget, the applicant must describe briefly the basis for estimating the value of the non-NOAA funds derived from in-kind contributions. Costs for the following categories must be detailed in the budget as follows:

(A) *Personnel.* (*1*) Identify salaries by position and percentage of time of each individual dedicated to the project.

(*2*) Fringe Benefits. Indicate benefits associated with personnel working on the project. This entry should be the proportionate cost of fringe benefits paid for the amount of time spent in the project. For example, if an employee spends 20 percent of his/her time on the project, 20 percent of his/her fringe benefits should be charged to the project.

(B) *Consultants and contract services.* Identify all consultant and/or contractual service costs by specific task in relation to the project. If a commitment has been made prior to application for funding to contract with a particular vendor, explain how the vendor was selected, type of contract, deliverable expected, time frame, and cost. All contracts must meet the standards established in OMB circulars.

(C) *Travel and transportation.* Identify number of trips to be taken, purpose, and number of people to travel. Itemize estimated costs to include approximate cost of transportation, per diem, and miscellaneous expenses. Registration fees should be included.

(D) *Equipment, space or rental costs.* (*1*) Identify equipment purchases or rental costs, along with the intended use. Equipment purchases greater than $500.00 will not be allowed, since experienced investigators are expected to have sufficient capital equipment on hand. Use of lease to purchase (LTOP) or similar leases are prohibited.

(*2*) Identify space rental costs with specific uses.

(E) *Other costs.* (*1*) Supplies: Identify specific supplies necessary for the accomplishment of the project. Consumable office supplies may be included under Indirect Costs unless purchased in a large quantity to be used specifically for the project.

(*2*) Postage and shipping. Include postage for correspondence and other material produced under grant, as well as air freight, truck or rail shipping of bulk materials to be used in conferences and workshops.

(*3*) Printing costs. Include costs associated with producing materials in conjunction with the project.

(*4*) Telephone and telegraph. Identify estimated calls and monthly bills.

(*5*) Utilities may be included under Indirect Costs unless purchased in a large quantity to be specifically for the project. Identify costs of utilities and percentage of use in conjunction with performance of project.

(*6*) Indirect Costs. This entry should be based on the applicant's established indirect cost agreement rate with the Federal Government. A copy of the current approved negotiated Indirect Cost Agreement should be included.

(*7*) Additional costs. Indicate any additional costs associated with the project which are allowable under OMB Circulars A-21, A-87, and A-122.

(d) *Supporting Documentation.* This section should include any required documents and any additional information necessary or useful to the description of the project. The amount of information given in this section will depend on the type of project proposed. The applicant should present any information which would emphasize the value of the project in terms of the significance of the problems addressed. Without such information, the merits of the project may not be fully understood, or the value of the project to fisheries use may be underestimated. The absence of adequate supporting documentation may cause reviewers to question assertions made in describing the project and may result in a lower ranking of the project. Reviewers will not necessarily examine all material provided as supporting documentation except where sufficient detail is lacking in the project description to properly evaluate the project. Therefore, information presented in this section should be clearly referenced in the project description.

5. Application Submission and Deadline

(a) *Deadline.* NMFS will accept applications for funding under this program between March 8, 1989 and April 24, 1989. An application will be accepted if the application is received by the office listed below on or before April 24, 1989 (5 p.m. e.s.t.).

(b) *Submission of applications to NMFS.* Applications are not to be bound

in any manner and should be one-sided. Any application not fully including all information called for herein, will be returned to the applicant. Applicants must submit one signed original and two (2) copies of the complete application to the address set forth below:

Regional Director, Attn: D. Ekberg, National Marine Fisheries Service, Duval Bldg., 9450 Koger Blvd., St. Petersburg, Florida 33702, Telephone No. (813) 893-3720.

Questions of an administrative nature should be referred to:

NOAA RAS/CC31, Attn: Jean West, Central Administrative Support Center, Federal Bldg., Room 1758, 601 East 12th Street, Kansas City, Missouri 64106, Telephone No. (816) 426-7267.

IV. Review Process and Criteria

1. Evaluation and Ranking of Proposed Projects

For applications meeting the requirements of this solicitation, NMFS will conduct a technical evaluation of each project prior to any other review. If an application contains two or more projects, NMFS will evaluate the projects separately. All comments submitted to NMFS will be taken into consideration in the technical evaluation of projects. NMFS will provide point scores on proposals based on the following evaluation criteria:

(a) Adequacy of research/development/demonstration for managing or enhancing Gulf of Mexico marine fishery resources, addressing especially the possibilities of securing productive results (30 points).

(b) Soundness of design/technical approach for enhancing or managing the use of Gulf of Mexico marine fishery resources (25 points).

(c) Organization and management of the project, including qualifications and previous related experience of the applicant's management team and other project personnel involved (20 points).

(d) Effectiveness of proposed methods for monitoring and evaluating the project (15 points).

(e) Justification and allocation of the budget in terms of the work to be performed (10 points).

The average technical scores will be ranked by NMFS into three groups: (1) highly recommended, (2) recommended, and (3) not recommended, for presentation to MARFIN Board members. The Board members will consider the significance of the problem addressed in the project, along with the technical evaluation and need for funding. This evaluation and ranking will enable NMFS to determine the appropriate level of funding for each project.

2. Consultation with Others

NMFS will make project descriptions available for review as follows:

(a) Public review and comment.

Applications may be inspected at the National Marine Fisheries Service Regional Office in St. Petersburg, Florida from April 24, 1989, to May 1, 1989.

(b) Consultation with members of the fishing industry. The NMFS shall, at its discretion, request comments from members of the fishing and associated industries who have knowledge in the subject matter of a project or who would be affected by a project.

(c) Consultation with government agencies. Applications will be reviewed in consultation with the NMFS Southeast Science and Research Director and appropriate laboratory personnel, CASC Grants Officer and, as appropriate, Department of Commerce bureaus and other federal agencies for elimination of duplicate funding. The Regional Fishery Management Councils may be asked to review projects and advise of any real or potential conflicts with council activities.

3. Funding Decision

After projects have been evaluated, MARFIN Board members will develop and submit funding recommendations to the Director of the NMFS Southeast Regional Office. The Director of the NMFS Southeast Regional Office will ascertain that the projects do not substantially duplicate other projects that are currently funded by or are approved for funding by the U.S. Government, determine the projects to be funded, and determine the amount of funds available for the program. The exact amount of funds awarded to each project will be determined in preaward negotiations between the applicant, NMFS, and the Grants Office. The Department of Commerce will review all recommended projects and funding before an award is executed by the Grants Officer. The funding instrument will be determined by the Grants Officer. Projects may not be initiated by a recipient until a notice of award is received from the Grants Officer. For multi-year projects, funds will be provided when specified tasks are satisfactorily completed and after NMFS has received MARFIN funds for subsequent fiscal years.

V. Administrative Requirements

1. Obligations of the Applicant

An Applicant must:

(a) Meet all application requirements and provide all information necessary for the evaluation of the project.

(b) Be available, upon request, in person or by designated representative, to respond to questions during the review and evaluation of the project(s).

(c) If a project is awarded, manage the day-to-day operations of the project, be responsible for the performance of all activities for which funds are awarded, and be responsible for the satisfactory completion of all administrative and managerial conditions imposed by the award. This includes adherence to procurement standards set forth in the award and referenced OMB circulars.

(d) If a project is awarded, keep records sufficient to document any costs incurred under the award, and allow access to records for audit and examination by the Secretary, the Comptroller of the United States, or their authorized representatives.

(e) Fishery data collected during the course of a project that could be pertinent to fishery management needs must be available to NMFS on request, subject to pertinent confidentiality requirements.

(f) If a project is awarded, submit quarterly project status reports on the use of funds and progress of the project to NMFS within 30 days after the end of each calendar quarter to the individual specified as the program officer in the funding agreement. The content of these reports will include, at a minimum:

(i) A summary of work conducted, which includes a description of specific accomplishments and milestones achieved;

(ii) The degree to which goals or objectives were achieved as originally projected;

(iii) Where necessary, the reasons why goals or objectives are not being met; and

(iv) Any proposed changes in plans or redirection of resources or activities and the reason therefore.

(g) If a project is funded, submit an original and two copies of a final report within 90 days after completion of each project. The report must describe the accomplishments of the project and include an evaluation of the work performed and the results and benefits of the work in sufficient detail to enable NMFS to assess the success of the completed project. Results must be described in relation to the project objectives of resolving specific impediments to managing or enhancing fisheries, and be qualified to the extent possible. Potential uses of project results by private industry or fishery managment agencies should be

specified. Any conditions or requirements necessary to make productive use of the project results should be identified.

(h) Present current project results at the annual MARFIN conference and submit an abstract 15 days prior to the conference. Travel funds for this meeting will be provided by NMFS.

(i) Each recipient of MARFIN funding must comply with applicable OMB circulars, and Department of Commerce and NOAA policies. Each award contains standard terms and conditions and any special conditions which must be met by the recipient.

(j) For each project funded three copies of all publications or reports printed with grant funds must be submitted to the Program Officer. Any publication printed with grant funds must identify the MARFIN program of NOAA as the funding source along with the grant award number.

2. Obligations of the National Marine Fisheries Service

The NMFS Southeast Region will:

(a) Provide programmatic information necessary for the proper submission of applications.

(b) Provide advice to inform applicants of NMFS fishery management and development policies and goals.

(c) Monitor all projects after award to ascertain their effectiveness in achieving project objectives and in producing measurable results. Actual accomplishments of a project will be compared with stated objectives.

(d) Refer questions of an administrative nature from applicants/recipients to the Grants Office.

3. CASC Grants Officer Responsibility

The CASC Grants Officer is responsible for the administrative processing of NOAA Federal Assistance Awards and will provide all forms needed by an applicant. Processing includes review of applications to determine that they are in conformance with Federal requirements, negotiation, determination of the funding instrument, clearance through administrative review once program funding has been determined, execution of awards, reports and administrative monitoring, and close out of awards. The official grant file will be maintained by the Grants Officer.

4. Legal Requirements

The applicant will be required to satisfy the requirements of applicable local, State, and Federal laws.

This program is not included in the Catalog of Federal Domestic Assistance.

Authority: 16 U.S.C. 1854(e).

Dated: March 3, 1989.

James E. Douglas, Jr.,

Deputy Assistant Administrator for Fisheries, National Marine Fisheries Service.

[FR Doc. 89-5371 Filed 3-7-89; 8:45 am]

BILLING CODE 3510-22-M

Pacific Fishery Management Council; Public Meeting

AGENCY: National Marine Fisheries Service, NOAA, Commerce.

The Pacific Fishery Management Council's Groundfish Management Team (GMT) will meet on March 21, 1989, at the National Marine Fisheries Service, Northwest and Alaska Fisheries Center, Building 4, Room 2079, 7600 Sand Point Way, NE., Seattle, WA. The GMT will meet at 12:30 p.m., to discuss 1989 commercial groundfish catch projections, research needs, technical revisions to the fishery management plan, and management of the commercial sablefish fishery. Other issues related to management of the west coast groundfish fishery may also be discussed.

FOR FURTHER INFORMATION CONTACT: Lawerence D. Six, Executive Director, Pacific Fishery Management Council, Metro Center, Suite 420, 2000 SW. First Avenue, Portland, OR 97201: telephone: (503) 221-6352.

Date: March 2, 1989.

Alan Dean Parsons,

Acting Director, Office of Fisheries Conservation and Management, National Marine Fisheries Service.

[FR Doc. 89-5372 Filed 3-7-89; 8:45 am]

BILLING CODE 3510-22-M

COMMITTEE FOR THE IMPLEMENTATION OF TEXTILE AGREEMENTS

Adjustment of Import Limits for Certain Cotton and Wool Textile Products Produced or Manufactured in Brazil

March 3, 1989.

AGENCY: Committee for the Implementation of Textile Agreements (CITA).

ACTION: Issuing a directive to the Commissioner of Customs adjusting limits.

EFFECTIVE DATE: March 6, 1989.

FOR FURTHER INFORMATION CONTACT: Naomi Freeman, International Trade Specialist, Office of Textiles and Apparel, U.S. Department of Commerce, (202) 377-4212. For information on the quota status of these limits, refer to the Quota Status Reports posted on the bulletin boards of each Customs port. For information on embargoes and quota re-openings, call (202) 377-3715.

SUPPLEMENTARY INFORMATION:

Authority: Executive Order 11651 of March 3, 1972, as amended; section 204 of the Agricultural Act of 1956, as amended (7 U.S.C. 1854)

The current limit for Categories 347/348 and sublimit for Category 410 are being increased for swing and carryforward. Category 410 is being increased further by special shift from Categories 410/624.

A description of the textile and apparel categories in terms of HTS numbers is available in the CORRELATION: Textile and Apparel Categories with the Harmonized Tariff Schedule of the United States (see **Federal Register** notice 53 FR 44937, published on November 7, 1988). Also see 53 FR 46644, published on November 18, 1988.

The letter to the Commissioner of Customs and the actions taken pursuant to it are not designed to implement all of the provisions of the bilateral agreement, but are designed to assist only in the implementation of certain of its provisions.

Ronald I. Levin,

Acting Chairman, Committee for the Implementation of Textile Agreements.

Committee For The Implementation Of Textile Agreements

March 3, 1989.

Commissioner of Customs, Department of the Treasury, Washington, DC 20229

Dear Mr. Commissioner: This directive amends, but does not cancel, the directive issued to you on November 15, 1988 by the Chairman, Committee for the Implementation of Textile Agreements. That directive concerns imports into the United States of certain cotton, wool and man-made fiber textile products, produced or manufactured in Brazil and exported during the twelve-month period which began on April 1, 1988 and extends through March 31, 1989.

Effective on March 6, 1989, the directive of November 15, 1988 is amended to adjust the current limit and sublimit for cotton and wool textile products in the following categories, as provided under the terms of the current bilateral agreement between the Governments of the United States and the Federative Republic of Brazil:

Category	Adjusted twelve-month limit [1]
347/348	728,000 dozen
410	3,697,355 square meters

[1] The limits have not been adjusted to account for any imports exported after March 31, 1988.

The Committee for the Implementation of Textile Agreements has determined that these actions fall within the foreign affairs

APPENDIX B

APPROVED APPLICATION SUMMARIES

MARFIN PROJECT SUMMARY 89MAR01.I.03

Project Title: Enhancing the Benefits Derived from Shrimp in the Gulf of Mexico through Optimizing Shrimp Management in Louisiana

Project Status: New X Con't ___ Start: Oct. 1, 1989 End: Sept. 30, 1991

Name, Address, and Telephone Number of Applicant:

Marine Fisheries Division
Louisiana Department of
Wildlife and Fisheries (LDWF)
P.O. Box 9800
Baton Rouge, LA 70896-9000
(504) 765-2370

Louisiana State University
Coastal Fisheries Institute
Center for Wetland Resources
Baton Rouge, Louisiana 70803-7503
(504) 388-6456

Principal Investigator(s):

Jerry Clark, Ph.D.
William S. Perret, M.S.
Philip Bowman, M.S.
Richard Condrey, Ph.D.
Michael Wascom, Ll.M.
Walter Keithly, Ph.D.
Deborah Fuller, M.S., M. Ap.Stat.

Project Objective:

Develop a fishery management plan for saltwater shrimp from Louisiana waters which will maximize the economic benefit derived from the resource by Louisiana and the region. While management will encompass all saltwater shrimp occurring in Louisiana waters, brown, white, pink, and sea bob shrimp will be emphasized.

Summary of Work:

We will capitalize on the LDWF's newly enhanced authority to manage the harvest of shrimp in Louisiana, the newly constituted Governor's Task Force on Shrimp Management (GTFSM), and our extensive backgrounds in plan development to derive a management plan for the nationally prominent shrimp fishery in Louisiana waters.

LSU will hold an initial series of public information meetings throughout the coastal zone. The meetings will begin with an overview of the population dynamics of shrimp and the present status of the fishery. Public input will then be solicited on the needs and goals of the public, as they relate to the resource and industry.

A comprehensive fishery management plan will be developed in the first year and a half, which will be consistent with the National Standards in the Magnuson Act. The plan's goal to "maximize the economic benefit which is derived from the resource by Louisiana and the region," recognizes that this is a regional resource whose magnitude and potential represent the single most effective way in which Gulf fisheries can be enhanced. Mechanisms by which this goal can be obtained will be developed in a series of options. These options will incorporate modeling of shrimp population dynamics and socioeconomic factors and will address the possibility that shrimp may be spawner-recruit over fished, that critical nursery habitat is being, and that the goal may only be attainable through incremented adjustments. The options will be developed by LSU in cooperation with LDWF and the GTFSM. The initial draft of the plan will be completed by LSU by March 1991 and submitted to LDWF for review. After appropriate modification by LSU, LDWF, in cooperation with the GTFSM and LSU, will review the plan in a second series of public hearings. Input from the hearings will be incorporated into the plan by LDWF and LSU. The final plan will be completed by September 1991.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$145,345	$290,690	(83% of Total)
Matching	$ 29,734	$59,468	(17% of Total)
Total	$175,079	$350,158	(100% of Total)

89MAR02.a.01

II. MARFIN PROJECT SUMMARY 04-21-89

Project Title : :- FOOD GRADE GULF MENHADEN OILS
SHELF LIFE -:- FISH OIL/VEGETABLE OIL (FO/VO)
:- FO/VO USED IN FOOD SYSTEMS

Project Status: New X Start 10-01-89 End 09-30-90

Name, Address, and Telephone Number of Applicant :
T. M. Miller, Director
MARINE CHEMURGICS R/D Tel. - (919) 393 2198
1834 J. Bell Lane (Ocean)
Newport, NC 28570

Principle Investigators & Brief Statement of Qualifications :
-T. M. Miller, B. S. Chem.'35 (Johns Hopkins) 40 years menhaden research, Director, Marine Chemurgics R/D since 1957.
-J. W. Stuart, B. S. Phys.'74 (U. of Arkansas) 11 years Chief Chemist, Empire Menhaden Co., Inc.
-W. B. Wallace, B. S. Zool.'69; M.A.T. Marine Science '70 (Duke University) Pres. Wallace Menhaden Products, Inc.

Project objective :
Enhance the value of Gulf menhaden oil by demonstrating how to use refined and deodorized Gulf menhaden oil, or menhaden oil prepared directly from food grade Gulf menhaden, as part of the fat content of prepared foods that presently contain rather reactive "natural" structurally unchanged soybean oil, or other vegetable oils as ingredients, and to evaluate stability of the fish oils and the vegetable oils in these products on the basis of the chemical indices and sensory evaluations that the fats and oils industry uses to describe stability of fats and oils.

Summary of Work :
Food grade Gulf menhaden oils will be prepared (1) by refining and deodorizing prime crude Gulf menhaden oil, and (2) by wet rendering and removing the fat from edible portions of food grade Gulf menhaden. The fish oils, alone or mixed with vegetable oil (FO/VO), with and without antioxidants, will be characterized by determining moisture, impurities, color, free fatty acids, iodine value, peroxide number, anisidine value, oven storage, TBA, and sensory evaluations. The same data will be determined at intervals on the oils, stored under inert atmosphere, at 25 de C., for up to 9 months. The FO/VO's will be combined with food ingredients to produce food systems, ie, dressings, sauces, pancake mixes, chowder, and others, which will be subjected to appropriate shelf life tests.

Project Funding	Total Funds Requested	% of Total
Federal	$34,785.00	53
Matching	30,888.00	47
Total	$65,673.00	100

89 MAR 03. A.02

MARFIN PROJECT SUMMARY

Project Title: Age, Growth, and Reproductive Biology of Greater Amberjack (Seriola dumerili) and Cobia (Rachycentron canadum) from Coastal Louisiana Waters-Year One

Project Status: New X Con't ___ Start Oct. 1, 1989 End Sept. 30, 1990

Applicant: Louisiana State University
Coastal Fisheries Institute
Baton Rouge, LA 70803-7503
(504) 388-6093

Principal Investigator(s): Bruce A. Thompson Ph.D., Charles A. Wilson and Jeffrey H. Render

Project Objectives: For both Greater Amberjack and Cobia, (1) to validate aging periodicity using otoliths via marginal increment analysis, (2) to determine age and growth patterns, (3) to determine sex ratios, fecundity, timing, and location of gonad development to understand reproductive cycle, (4) to compare data from objectives two and three from major sources of specimens, including commercial, charterboat, and recreational fishing rodeo catches, and (5) to compare our data with previous information on each species--Burch (1979), Greater Amberjack and Richards (1967, 1977), Cobia.

Summary of Work: We will obtain Greater Amberjack and Cobia from commercial processing plants, charterboats, and recreational saltwater fishing rodeos. We will obtain the following information for these species: (1) fork and total length, (2) total and empty body weight, (3) sex, (4) gonad weight, (5) otoliths, and (6) maturation stage of gonads.

This information will be used to derive age estimations for both species after validating the periodicity of otolith increments. Size-at-age and age-at-maturity profiles will be done for both species. Length/weight and other selected body proportion relationships will be determined.

Reproductive patterns will be monitored via gonadosomatic indices, macroscopic staging, and validation of these two procedures from histological sections of representative gonads. Two hundred cobia, previously collected during 1987 and 1988 will be analyzed as part of this project.

This work is proposed as a two year project.

Project Funding	Year Two Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 75,302	$150,604	(79.4% of Total)
Matching	$ 19,593	$ 39,186	(20.6% of Total)
Total	$ 94,895	$189,790	(100% of Total)

2. PROJECT SUMMARY

a. **Project Title:** Implementation of a log book system for spotter pilots and fleet captains to record observations on mackerel schools in south Florida.

b. **Project Status:** New

c. **Project Duration:** **Start Date:**12/1/1989 **End Date:**11/30/1991

d. **Applicant:** Rosenstiel School of Marine and Atmospheric Science
University of Miami. 4600 Rickenbacker Causeway
Miami, Florida 33149
Telephone: (305) 361-4604

e. **Principal Investigator(s):**
Dr. Nelson M. Ehrhardt. Associate Professor
Division of Biology and Living Resources
(305) 361-4741

f. **Project Objectives:** The goal of this project is to study the temporal-spatial distribution of schooling mackerels and the character of the directed fishing acting upon them. Objectives include: 1) To obtain data on the winter distribution and abundance of mackerel schools, 2) to estimate the level of school utilization by the fleet, 3) To describe the operational characteristics of the fishing fleets associated with spotter pilots, and 4) To describe environmental and other factors affecting fishing operations and school distributions.

g. **Summary of Work:**A log book system to record information on number and size of mackerel schools sighted by spotter pilots was designed and implemented in the 1988 Florida winter fishery. A similar interview log book was designed and implemented with selected fishing boat captains associated with air spotting activities. Preliminary data analyses resulted in valuable information on previously unknown dynamic interactions between fish schools and fishing activities. Project tasks will include: preparation, distribution, monitoring and retrieval of log books; interviews with pilots and captains; integration, analysis and interpretation of all data collected and preparation of interim and annual reports. Analyses will include: geographical distribution of observed and fished schools; distances of schools from main fishing ports; estimates of biomass available; rates of school utilization; and environmental effects on school distributions and fishing success.

h. **Total MARFIN Funds Requested:**

FY 1989	$29,120	(Percent of total 48.8%)
FY 1990	$30,549	(Percent of total 51.2%)

i. **Project costs to be provided from non-Federal Government:** No other sources of funding are contemplated although in-kind contribution is expected from the fishing industry.

j. **Total Project Costs:** Two years $59,669

MARFIN PROJECT SUMMARY SGMAR 03.B.04

Project Title: KING AND SPANISH MACKEREL MIGRATION AND STOCK ASSESSMENT STUDY IN THE SOUTHERN GULF OF MEXICO

Project Status/: New x Con't ___ **Start Date** November 1989 **End Date** December 1990
Duration 14 months

Name, Address, and Telephone Number of Applicant:

Mote Marine Laboratory
1600 City Island Park
Sarasota, FL 34236
(813) 388-4441

Principal Investigator(s) and "Brief" Statement of Qualification:

Karen Burns and Bruce Fortune, Senior and Staff Biologists, respectively, at MML; 24 years experience in the marine environment and sciences. Principal Investigators for the past three years of the King and Spanish Mackerel Migration and Stock Assessment Study in the Southern Gulf of Mexico.

Project Objective: Obtain king and Spanish mackerel migration information from Mexican Gulf coast states through tagging efforts and length/frequency-CPUE data collection at strategic sites along mackerel migration routes. Specimen collection for electrophoresis and historical landings data will also be obtained, as well as otoliths/sex/fish size data. Gonadosomatic index (GSI) will be determined for mackerel from Mexican gulf coast states.

Summary of Work: (For continuing projects, include, briefly, progress to date)

This project can be divided into six integral parts:

I. Movement and Migration of Mackerel
   A. Tagging (see details, Project Summary, p. 1)
   B. Tag Recovery System
   C. Reward Poster Distribution

II. Length/Frequency Distribution of Mackerel
   Obtain length measurements and CPUE data for king and Spanish mackerel during months of prime harvesting.

III. Otoliths/Sex/Fish Size Data Collection
   Obtain otoliths/sex/fish size data, collecting 10 fish of each sex over the available size range in groups of 20 fish within 10 cm intervals.

IV. Historical Landings
   Provide recorded landings for king and Spanish mackerel by weight, value and area of harvest for all Mexican states bordering the Gulf.

V. Stock Identification
   Deliver whole frozen adult king and Spanish mackerel or mackerel tissue samples (100 of each species from Yucatan in winter and 100 from Veracruz in spring; and small juveniles (<20 cm) from Yucatan, and Veracruz when available to NOAA/NMFS Panama City for electrophoresis.

VI. Mackerel Gonad Collection
   Gonads from up to 100 adult king mackerel from either the Yucatan or Veracruz and Spanish mackerel, if available, will be examined to determine the gonadosomatic (GSI) for each fish.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 81,230	$ 81,230	(73.2 % of Total)
Matching	$ 29,740	$ 29,740	(26.8 % of Total)
Total	$ 110,970	$ 110,970	(100 % of Total)

89MAR04.0.02

MARFIN PROJECT SUMMARY

Project Title: MACKEREL AND REEF FISH BIOPROFILE AND CATCH/EFFORT DATA COLLECTION FROM THE NORTHERN GULF OF MEXICO

Project Status: New

Project Duration: October 1, 1989-September 30, 1992 (three years)

Applicant: Center for Wetland Resources
Louisiana State University
Baton Rouge, Louisiana 70803-7503
(504) 388-6507

Principal Investigator: Sandra J. Russell, Research Associate IV
Coastal Fisheries Institute

Project Objectives:

The goal of this study is to record catch/effort and bioprofile data from the mackerel and reef fish fisheries in the northern Gulf of Mexico.

Project Summary:

This proposed three-year project will build upon the computerized database of mackerel and reef fish effort and biological information established by LSU's MARFIN-funded sampling program during 1986-89. Specifically, we will continue to obtain interviews (goal of 150) from both recreational and commercial mackerel and reef fish fishermen. Their catches will be randomly sampled so that at least some fish from every trip are measured (goal of 2,000 fork lengths, each, of king mackerel and red snapper). Spanish mackerel, greater amberjack, vermilion snapper, tilefish, and yellowedge grouper will also be measured when available (goal of at least 1,000 fork lengths).

Otoliths and muscle tissue/other organ samples will continue to be collected and shipped to the NMFS-Panama City Lab as per their requirements.

LSU will continue a new task begun in 1988 of studying red snapper fecundity and size-at-maturity, which have previously never been examined in any detail in the Gulf, yet which are extremely important parameters needed in estimating spawning stock biomass. CFI has the laboratory facilities available to use the hydrated oocyte method for determining the rate of spawning and batch fecundity.

All data generated by this project will be computerized at CFI and made available to NMFS on magnetic tape.

Project Funds:	1st Yr. Funds	2nd Yr. Funds	3rd Yr. Funds Req.	Total Costs
Federal	$43,628.00	$45,674.00	$47,721.00	$137,023.00
Matching	3,199.00	3,294.00	3,390.00	9,883.00
Total	$46,827.00	$48,968.00	$51,111.00	$146,906.00

MARFIN PROJECT SUMMARY 89MAR04.H.01

Project Title: "Investigation of Life History Paramenters of Species of Secondarily Targeted Reef Fish and Dolphin (Fish) in the Northern Gulf of Mexico"

Project Status/: Duration New X Con't ___ **Start Date** 1 Jan. 90 **End Date** 31 Dec. 91

Name, Address, and Telephone Number of Applicant:

University of South Alabama
Robert L. Shipp/Coastal Research and Development Institute
AD 300
Mobile, AL 36688
(205) 460-7136

Principal Investigator(s) and "Brief" Statement of Qualification:

Drs. Robert L. Shipp and Richard K. Wallace - Both applicants have Ph.D. degrees in fishery biology/ichthyology, with combined 30 years experience in fishery related projects. Robert L. Shipp has served onnumerous FMC committees; Richard K. Wallace, through his role with Miss./Ala. Sea Grant Extension services has continual interaction with fishery groups along the north central Gulf Coast.

Project Objective:

Provide data on age/length relationships and basic life history of secondary reef target species, (snappers, porgies, groupers, amberjacks) and dolphins from the northern Gulf of Mexico. These data will establish a base for optimal management of these species during anticipated changes in fishing pressure with implementation of the Reef Fish Management Plan. Supplementary data on red snapper will also be gathered.

Summary of Work: (For continuing projects, include, briefly, progress to date)

Otoliths will be gathered from numerous sources (archived lab material, commercial outlets, on board, docksides) from secondary target reef species and dolphins. Concurrently additional life history data (length, sex, gonadal condition, etc.) will be gathered. Data will be entered and analyzed according to accepted fishery procedures to provide information on basic life history parameters of these secondary target species.

Althougn administratively this is considered a new project, a very similar MARFIN funded project is currently in its first year. A state of the science aging laboratory is currently being developed at the Univeristy of South Alabama (USA), and personnel from other laboratories are interacting with the USA staff. Otoliths have been obtained from NMFS labs, and the other sources described above. Exchange of otoliths with complementary programs is also occurring, and will continue.

In addition, a graduate student in this laboratory has completed an MS thesis on age of dolphins in the norht central Gulf. This is being prepared for publication, and will provide a base of one year's data on which to build a definitine evoluation of age/growth data on this heavily fished pelagic species.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 47,521	$ 96,961	(80 % of Total)
Matching	$ 11,700	$ 24,102	(20 % of Total)
Total	$ 59,221	$ 121,063	(100 % of Total)

89MAR04.K.02

MARFIN PROJECT SUMMARY

Project Title: EARLY LIFE HISTORY OF SNAPPERS IN COASTAL AND SHELF WATERS OF THE NORTHCENTRAL GULF OF MEXICO, LATE SUMMER/FALL MONTHS, 1983-1989.

Project Status/: New_X_ Con't___ Start Date 01/10/89 End Date 30/09/91
Duration

Name, Address, and Telephone Number of Applicant:
Gulf Coast Research Laboratory
P.O. Box 7000
Ocean Springs, MS
(601) 875-2244

Principal Investigators and Qualifications:
J. Lyczkowski-Shultz, Ph.D., Associate Biologist
B.H. Comyns, M.S., Research Associate

Project Objectives: Document and describe the distribution, relative abundance, and ecology of snapper larvae, especially red and vermilion snapper. Provide new data on snapper spawning locations in relation to artifical reef sites. Describe developmental morhology of small (<4 mm), preflexion red snapper. Assess the feasiblility of aging red snapper larvae using daily otolith growth increments. Begin to develop a database from which larval snapper growth and mortality rates can be estimated and recruitment processes described.

Summary of Work: Snapper larvae will be identified from archived ichthyoplankton collections (including discrete-depth, finescale, and broadscale samples) taken from Aug. through Nov. 1983-85, and Sep. 1986-89. Horizontal and vertical, distribution and abundance patterns will be determined and compared to known locations of artifical reef habitats. Reared red snapper larvae (and vermilion snapper larvae if available) of known age, provided through cooperation with the Alabama Marine Resources Division (AMRD), Gulf Shores, Alabama, will be used to describe the morphology and development of preflexion larvae and to verify daily periodicity of otolith growth increments. Determination of age structure and field growth and mortality rates will be undertaken depending on the success of the AMRD rearing program, and the extent of the field collected, larval snapper database.

Project Funding	First Year	Second Year	% of Total
Federal	$10,051	$11,056	44%
Matching	$12,785	$14,064	56%
Total	$22,836	$25,120	100%

MARFIN PROJECT SUMMARY

89MAR05.B.01

Project Title: Investigations of inshore and offshore population dynamics of Spanish sardines along the central west coast of Florida.

Project Status/Duration: New x Start Date 1 October 1989
End Date 30 September 1990

Name, Address, and Telephone Number of Applicant:

Florida Department of Natural Resources
Florida Marine Research Institute
100 Eighth Avenue SE
St. Petersburg, FL 33701-5095 813-896-8626

Principal Investigator(s) and "Brief Statement of Qualification:

Frederick C. Sutter—M.S. University of Massachusetts. Ten years of fisheries research experience in the Gulf of Mexico, specializing in near-shore population dynamics of coastal pelagics.

Behzad Mahmoudi — Ph.D. University of Miami. Specialist in stock assessment and population dynamics of South Atlantic and Gulf of Mexico finfishes.

Project Objective:

To provide estimates of population parameters to compare inshore and offshore Spanish sardine stock structures off the central west coast of Florida. This study will provide information for the assessment of this increasingly utilized resource.

Summary of Work:

Spanish sardines will be collected in the Tampa Bay area to study stock structure by using age and growth and reproductive parameters from inshore (approximately 5 fathoms) and offshore (greater than 10 fathoms) populations. Offshore collections will be made bimonthly, near the time of a new moon, using night lighting to attract fish. Sampling devices will include multi-panel gill nets, cast nets, and a hoop net outfitted with an underwater light. Inshore collections will be made on a monthly basis from the commercial purse seine fishery and from night-lighting trips. These techniques have been successful in preliminary collections of juvenile and adult Spanish sardines. Lengths, length-weight measurements and otoliths will be taken during each cruise to provide an analysis of growth patterns. Juvenile and adult Spanish sardines will be either injected with or placed in a tetracycline solution and held to validate annuli and daily rings. Reproductive studies of sex ratios, maturity stages, development, and seasonality will be made in concert with age and growth investigations to better define the stock structure of this important commercial latent resource.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 48,203	$ 48,203	$ 100 %
Matching	$ 0	$ 0	$ 0
Total	$ 48,203	$ 48,203	$ 100 %

SAMARC6 001

PROJECT SUMMARY

Project Title: Age, Growth, Diet and Spawning Dates of Yellowfin Tuna, Thunnus albacares, about the Mississippi River Plume

Project Status: New

Project Duration: October 1, 1989 to September 30, 1991

Name, Address, and Telephone Number of Applicant:
Coastal Fisheries Institute
Center for Wetland Resources
Louisiana State University
Baton Rouge, LA 70803-7503

Principal Investigators:
1. Dr. Richard F. Shaw
2. Ms. Kathy L. Lang

Project Objective:

The goal of this project is to provide information on age, growth, diet and spawning dates of yellowfin tuna that is relevant to evaluating the importance of the Mississippi River plume as a spawning area and source of recruits to Gulf of Mexico fisheries.

Summary of Work to be Performed:

We will use approximately 1,000 larvae and small juveniles collected on Mississippi River plume cruises by LSU and by NMFS, Panama City, FL in July and September of 1987 to estimate age, growth, back calculate spawning dates, and determine diet. Any additional young yellowfin tuna collected during other LSU or NMFS research cruises to the Mississippi plume will also be available for use by this project. Age and growth will be estimated from otolith microstructure as observed and recorded on an optical pattern analysis system. Diet will be determined from quantitative analysis of stomach contents, and food availability estimated from ichthyoplankton and zooplankton collections made when specimens were captured. These data will be utilized by LSU and NMFS scientists in their ongoing efforts to evaluate the importance of the Mississippi plume as a spawning area and source of recruits.

Project Funding	Total Funding Requested (2 years)	Funds Requested 89-90	Percentage of Total
Federal	$ 53,928	$ 26,964	84%
Matching	$ 10,196	$ 5,098	16%
Total	$ 64,124	$ 32,062	100%

89MAR C6.D.01

MARFIN PROJECT SUMMARY

Project Title: BIOLOGICAL AND CATCH/EFFORT SAMPLING FROM THE DOMESTIC TUNA AND SHARK FISHERIES IN THE NORTHERN GULF OF MEXICO

Project Status: New

Project Duration: October 1, 1989 - September 30, 1992 (3 years)

Applicant: Louisiana Department of Wildlife and Fisheries
Seafood Division
P.O. Box 98000
Baton Rouge, Louisiana 70898
(504) 765-2371

Principal Investigators: Joseph A. Shepard
Louisiana Department of Wildlife & Fisheries

Sandra J. Russell (504) 388-6507
Coastal Fisheries Institute
Center for Wetland Resources
Louisiana State University
Baton Rouge, Louisiana 70803-7503

Project Objectives:

The goals of this project are to collect biological and catch/effort data from the domestic tuna and shark longline fisheries in the northern Gulf of Mexico, and to collect biological and catch/effort data from the nearshore shark gill-net fishery in Louisiana.

Summary of Work to be Performed:

LSU observers will be placed aboard commercial tuna and shark longline vessels to record such otherwise unobtainable biological information as species composition, length frequencies, sex ratios, alive/dead status, and reproductive conditions from both the catch and by-catch of each set. They will also document catch/effort parameters for each observed set such as fishing locations and depths at payout and haulback of the mainline, numbers of each species retained for sale, numbers, alive/dead status, and estimated lengths or weights of discarded by-catch species, gear configurations (including any variations or innovations), fishing hours, species and condition (alive/dead) of bait used, boat length, wind direction, and crew size.

LDWF personnel will be placed aboard nearshore commercial gill-net vessels targeting sharks to obtain similar biological and catch/effort information as that recorded from the longline fishery.

This project will not only build upon the information gathered by LSU's MARFIN-funded 1987-89 tuna observer program which is used to verify NMFS's swordfish logbook records, but will also establish a data base for use in the management of the shark fishery in the Gulf.

Project Funding:	Total Funds Requested	Funds Requested 1st Year
Federal	$318,383.00	$98,330.00
Matching	24,201.00	8,067.00
Total	$342,584.00	$106,397.00

S9MAR 07.0.01

MARFIN PROJECT SUMMARY

Project Title: An Economic Analysis of Leasing Activities in the Louisiana Oyster Industry: Part II

Project Status: New X Con't ___ Start: Oct. 1,1989 End: Sept. 30, 1990

Name, Address, and Telephone Number of Applicant:
Louisiana State University
Coastal Fisheries Institute
Center for Wetland Resources
Baton Rouge, Louisiana 70803-7503
(504) 388-6296

Principal Investigator(s):
Walter R. Keithly, Jr., Assistant Professor,
Coastal Fisheries Institute
Kenneth J. Roberts, Professor,
Louisiana State University, Sea Grant

Project Objectives:

The overall objective of this project is to provide an economic analysis of the Louisiana oyster leasing situation by: (a) identifying in a business sense stability among lease owners; (b) specifying sales agreements between oyster lease buyers and sellers and to use these values to examine the relative economic "climate" in the industry; (c) examining locational movement in leasing arrangements, (d) tabulating sales values established via public auction of leases; (e) identifying all leases serving as collateral for loans for the purpose of determining leverage capacity, and (f) surveying financial institutions and Farmers Home Administration loan offices to gather information as to the extent of debt in the oyster industry incurred for lease maintenance and rehabilitation.

Summary of Work:

Approximately six months of work has been devoted to collecting the data required to accomplish the overall objective stated above. Leases transferred during the 1970-86 period have been researched and documented with all relevant information recorded. Work is underway to collect all relevant information, with respect to transfers, back to at least the early 1950's. Also, all leases serving as collateral have been identified. Associated with this identification, all relevant information regarding the extent of debt in the oyster industry incurred for oyster lease maintenance and rehabilitation has been gathered.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 43,144	$ 43,144	(81% of Total)
Matching	$ 9,927	$ 9,927	(19% of Total)
Total	$ 53,071	$ 53,071	(100% of Total)

MARFIN PROJECT SUMMARY 89MAR07.D 01

Project Title: Evaluation of Quahog (Mercenaria mercenaria) Abundance and Growth in Inshore Alabama and Northwestern Florida Waters: An Assessment of Habitat Favorability for Clam Culture

Project Status: New X Con't Start Date July, 1989 End Date July, 1991

Name, Address, Telephone No. of Applicant: Dr. Kenneth L. Heck, Jr. and Dr. Loren D. Coen, Marine Environmental Sciences Consortium, Dauphin Island Sea Lab & University of South Alabama's Coastal Research and Development Institute, Dauphin Island, Alabama, 36528, (205) 861-2141

Principal Investigator(s) and "Brief" Statement of Qualifications:
Kenneth L. Heck, Ph.D., 1976. (Florida State University). Senior Marine Scientist. Efforts are focused on ecological studies og seagrass-associated macrofauna, expecially shrimps, crabs, and fishes. Current studies include assessment of the nursery value and rates of secondary production in seagrass habitats along the Atlantic and Gulf coasts of seagrass meadows.

Loren D. Coen, Ph.D., 1987. (University of Maryland). Research Scientist. Research focuses on experimental ecology, emphasizing aquatic plant-animal interactions. Current work includes the functional morphology and ecology of tropical decapod crustaceans, seagrass ecology and herbivore susceptibility and life history evolution of seaweeds.

Project Objective: To collect information on survival and growth rates of Quahogs (Mercenaria mercenaria) in Alabama and northwest Florida and to evaluate the favorability of nearshore vegetated habitats for hard clam populations.

Summary of Work: (For continuing projects, include, briefly, progress to date).

Field surveys of recently discovered Quahog (Mercenaria mercenaria) populations in seagrass habitats in Alabama and northwest Florida will document existing population sizes and habitat specific growth and rates of survival. We will also test the hypothesis that seagrasses increase the probability of clam survival by evaluating experimentally in the field whether and how different types of seagrasses can protect clams from: (1) lethal predation by crabs and other predators; and (2) sublethal partial predation by animals such as flatfish that "nip" clam siphons and in so doing reduce clam growth rates.

This information will be used to provide a more general and complete understanding of the environmental factors that influence survival and growth rates of hard clams in the northern gulf of Mexico. Of special importance will be an assessment of the relative importance of seagrasses, which we believe to be serving as "critical" habitats for hard clams just as they are for young shrimp, crabs and fishes in the Gulf.

Project Funding:	Initial Funds Requested Year 1	Total Funds Requested Year 1 & 2	Percentage of Total
Federal	$ 57,832	$ 118,933	(76 % of Total)
Matching	$ 18,356	$ 38,303	(24 % of Total)
Total	$76,188	$ 157,236	(100 % of Total)

89 MAR 08, E. 01

MARFIN PROJECT SUMMARY

Project Title: Habitat Selection and Recruitment of Juvenile Blue Crabs (*Callinectes sapidus*) Along Environmental Gradients in Louisiana.

Project Status: New__X__ Con't___ Start: *Oct 1, 1989* End: *Sep 30, 1990*

Name, Address, and Telephone Number of Applicant:
Louisiana State University
Coastal Fisheries Institute
Center for Wetland Resources
Baton Rouge, Louisiana 70803-7503
(504) 388-6512

Principal Investigator:
D. M. Baltz, Assistant Professor, Coastal Fisheries Institute

Project Objectives:

1) Identify and physically characterize optimal environmental variables of nursery microhabitats of juvenile blue crabs by systematically sampling vegetated and non-vegetated microhabitats along environmental gradients in the Barataria Bay system. 2) Determine seasonal abundances, size-frequency distributions and sex ratios of blue crabs in different microhabitats. 3) Describe associations between blue crabs and the larval and juvenile stages of other benthic macroinvertebrates and fishes by quantifying co-occurring species. 4) Relate physico-chemical and biological microhabitat variables to blue crab abundance and distribution to describe unsuitable, suitable, and optimum habitat characteristics useful to fishery managers.

Summary of Work: Many of the samples we will analyze have already been collected in an ongoing study; however, we are requesting additional funds to process the samples and extend the sampling over a 12-month cycle. A stratified sampling design is used to place a drop sampler along gradients of salinity, depth, and distance from marsh edge. The drop sampler is similar to that developed by NMFS (Minello and Zimmerman 1983) to sample shrimp and associated organisms on the flooded marsh, along the marsh edge, and on adjacent non-vegetated water bottom. Each sample will be used to estimate absolute abundances and is characterized in terms of abiotic and biotic variables to describe both optimum and suitable ranges of habitat characteristics for juvenile blue crabs. The proposed project will provide information on the habitat requirements and preferences of juvenile blue crabs that will be useful for the management of fisheries, for evaluating the impacts of marsh loss, and for development of habitat and population dynamics models. This project will provide further evaluation of this gear as a fishery-independent tool for estimating the abundance of blue crabs prior to recruitment to the fishery.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$26,707	$26,707	(85.5% of Total)
Matching	$ 4,537	$ 4,537	(14.5% of Total)
Total	$31,244	$31,244	(100.0% of Total)

MARFIN PROJECT SUMMARY 89MAR10.0.01

Project Title:

Project Status/: New xxx Con't ___ Start Date 10/1/89 End Date 9/30/90
Duration

Name, Address, and Telephone Number of Applicant:

DR. ANNE RUDLOE
GULF SPECIMEN MARINE LABORATORY
P O BOX 237
PANACEA, FLORIDA 32346

(904) 984-5297

Principal Investigator(s) and "Brief" Statement of Qualification:

Dr. Rudloe has conducted marine ecological research for 20 years in the northeastern Gulf of Mexico (see vita), including a preliminary tag and release study involving 106 Atlantic ridleys between 1984-1988. The turtles were obtained thru an extensive network of contacts in the commercial fishing community. Data on habitat preference was also obtained.

Project Objective: To provide fishery independent data on the occurrence, seasonality, and population structure of Kemp's Ridley sea turtle in shallow, inshore waters of the northeastern Gulf of Mexico. Such data is needed to evaluate whether Turtle Excluder Devices should be required inshore. It will develop population data necessary to develop a management plan for this species and will allow development of sampling procedures adequate for later efforts to calculate a population estimate for this region.

Summary of Work: (For continuing projects, include, briefly, progress to date)

Prior research in which ridleys have been obtained from commercial fishermen for tagg and release has allowed us to identify several shallow inshore sites in Wakulla and Fran Counties where ridleys occur consistently throughout the year. These sites will be sampl systematically on a biweekly and monthly basis using large mesh gill nets and trawls wit 60 minute tow times to capture ridley turtles. Turtles will be measured, tagged, and released in the field by project personnel.

A volunteer network will be organized to report beach strandings in Franklin and Gulf Counties. The shoreline of Wakulla County will be patrolled once a month by boat. Any strandings found will be identified to species and reported to the Florida Department of Natural Resources.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 62,592	$ 62,592	(96 % of Total)
Matching	$ 3,000	$ 3,000	(4 % of Total)
Total	$ 65,592	$ 65,592	(100 % of Total)

89 MAR 10 0 03

MARFIN PROJECT SUMMARY

Project Title: Systematic Survey of Stranded Marine Turtles for NMFS Statistical Zones 4 and 5

Project Status/: Duration — New X Cont'___ Start 1 Oct.'89 End 30 Sept.'90

Name, Address, and Telephone Number of Applicant:
Florida Department of Natural Resources
Florida Marine Research Institute
100 Eighth Avenue S. E.
St. Petersburg, Florida 33701-5095
(813) 896-8626

Principal Investigators and Qualifications (in brief):
Colleen C. Coogan, Biologist Scientist I - Conducted stranding/salvage and necropsies on sea turtles for 2 years for New York State. Acting as principal investigator for this grant since December 12, 1988.
Patricia A. Castaneda, Laboratory Technician IV - Had been an associate researcher for hawksbill and green turtle conservation and management in Mexico. Assists in aerial surveys and stranding responses.

Project Objective: To standardize effort in the detection, retrieval and examination of sea turtle carcasses in National Marine Fisheries Service (NMFS) statistical zones 4 and 5. Possible causes of mortalities will be assessed through gross external examination of all carcasses and through necropsies performed on selected fresh or unusual specimens.

Project Summary: All coastal beaches and inlets will be patrolled by weekly aerial surveys. Participants in the existing stranding and salvage network (Table 1) will assist in documenting stranding events that are accessible from the mainland. Fresh carcasses and carcasses indicating human induced mortality will be reported to FMRI for immediate necropsy. Necropsies will be conducted by FMRI personnel from the St. Petersburg main laboratory. Necropsies will follow the guidelines of Wolke and George (1981). Tissues from fresh carcasses will be sampled for histopathological examination by Dr. Greg Bossart, Miami Seaquarium. Liver and fat samples will be taken for toxicological analyses by the state's Kissimee Diagnostic Lab and through an outside contract. Voucher specimens will be prepared for deposition in museums.

During the first year of this project there were 124 strandings in NMFS statistical zones 4 and 5. During the first half of the second project year, 97 strandings have been encountered. The mandatory use of Turtle Excluder Devices (TEDs) will be implemented during the second half of this year (1 May 1989). This should reduce the number of sea turtle strandings, especially in Zone 4, where regulations require year-around use of TEDs. We estimate that less then 100 carcasses will be encountered between 1 October 1989 and 30 September 1990. In addition, we estimate that 25 carcasses will be necropsied and 5 to 10 will be processed for histopathological and toxicological assessment.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 62,630	$ 62,630	$ 100 %
Matching	$ 0	$ 0	$ 0
Total	$ 62,630	$ 62,630	$ 100 %

89 MAR 10, A C 1

PROJECT SUMMARY

Project Title: Assessment of Nonshrimping Mortality of Sea Turtles

Project Status: New

Project Duration: September 1, 1989 to August 31, 1991

Name, address and telephone number

Texas A&M University
College Station, Texas 77843
(409) 845-2828

Principal Investigators: Raymond F. Sis and Andre M. Landry

Project Objective: The objective of the proposed research will be to assess the causes of mortality in beached sea turtles by an intensive effort of obtaining information from necropsies of stranded sea turtles.

Summary of Work to be Performed: We propose to use the available data from current stranding network sources of past necropsies, and observations made by knowledgeable persons employed in marine related work and in other professions and from future necropsies of stranded turtles found dead from now until 8-31-91.

The work will include necropsies on all dead sea turtles stranded on the Texas coast, southwestern Louisiana coast, and the Florida Gulf Coast. All the turtles will be necropsied to obtain information on gross lesions, the ingestion of food, and the ingestion of non-biodegradables. We also propose to determine cause of death, if possible, from gross, histologic, bacteriologic, parasitologic, mycotic, and toxicologic analyses on a selected number of dead stranded turtles that have not begun to decay.

We propose to maintain a sea turtle pathology specimen and data base with photographs, preserved tissues, histologic slides, preserved parasites, non-biodegradables and bacterial pathogens, as well as materials from normal specimens. Information from this data base will be used in further development of a protocol and criteria for determination of cause of death in sea turtles, and for handling and preserving samples from dead sea turtles.

We will provide consultation and opinion by telephone or correspondence on sea turtle pathology, necropsy, and cause of death to NMFS and other personnel working with sea turtles.

Total Federal Funds Requested:

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 115,040	$ 234,353	81.7%
Matching	$ 25,989	$ 52,435	18.3%
Total	$ 141,029	$ 286,788	100.0%

Applicant Organization: Texas A & M Research Foundation
Box 3578
College Station, TX 77843
(409) 845-8641

89MHR 11-C-01

PROJECT TITLE

Estimation of Spawning Stock Biomass and Exploitation/Escapement Rates for Population Assessment of Black Mullet (Mugil cephalus)

PROJECT STATUS: NEW — CON'T -X— START: 1 OCTOBER 1989
END: 30 SEPTEMBER 1990

NAME, ADDRESS, AND TELEPHONE NUMBER OF APPLICANT:

FLORIDA DEPARTMENT OF NATURAL RESOURCES, DIvision of Marine Resources
Florida Marine Research Institute (813-896-8626)
3900 Comonwealth Blvd., Tallahassee, Florida 32399

PRINCIPAL INVESTIGATOR(S) AND BRIEF STATEMENT OF QUALIFICATIONS:

BEHZAD MAHMOUDI, PH.D. UNIVERSITY OF MIAMI,
SPECIALIST IN FISH POPULATION DYNAMICS, MODELING, AND STOCK ASSESSMENT.
THREE YEARS OF EXPERIENCE IN THE STUDY OF FLORIDA'S BLACK MULLET FISHERY

PROJECT OBJECTIVE:

Determine spawning stock biomass and the commercial gill net exploitation/escapement rates for black mullet during the roe mullet season.

SUMMARY OF WORK:

This proposal is a continuation of a MARFIN mark/recapture program to provide estimates of black mullet population parameters during the roe mullet fishery. As steps are taken to develop a management plan for the black mullet fishery, there is a critical need for fishery-independent estimates of important parameters such as spawning stock biomass, the rates of the exploitation and escapement of the spawning populations from the commercial fishery, and the monthly rates of natural and fishing mortality.

The spawning stock biomass of black mullet schools will be measured through mark/recapture experiments made during each spawning run in three selected systems in the Tampa Bay region. Spawning runs occur approximately 4 to 6 times during the season when aggregated schools of mullet emigrate in response to cold front events from inshore waters to offshore spawning grounds. The Petersen-type estimates of spawning stock size, exploitation rate, and escapement rate will be calculated during each spawning run.

Prior to each spawning run, approximately 500 mullet will be marked from aggregated schools in each of the three systems. Two of the sampling areas selected are heavily utilized and one is lightly utilized by the commercial fishery. Immediately after the passage of a cold front and subsequent emigration of mullet schools from the tag-release areas, data on the returns and associated catches will be collected from the commercial fishery to develop a data base for parameter estimations.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 48,066	$ 48,066	73
Matching	$ 17,715	17,715	27
Total	$ 65,781	65,781	100

MARFIN PROJECT SUMMARY

A. Project Title: Age Class Structure of Exploited Red Drum Stocks From The Near and Inshore Fishery Conservation Zone, North Central Gulf of Mexico

B. Project Status: New

C. Project Duration: October 1, 1989 - September 30, 1990

D. Name, Address and Telephone Number of Applicant

Alabama Department of Conservation and Natural Resources
Marine ResourcesDivision, P. O. Drawer 458, Gulf Shores, Al 36542, (205) 968-7576

E. Principal Investigators and a Brief Statement of Qualifications

Walter M. Tatum, Chief Marine Biologist, Marine Resources Division
R. Vernon Minton, Biologist IV, Marine Resources Division
Henery G. Lazauski, Ph.D., Biologist III, Marine Resources Division

F. Project Objective:

To improve on the life history and related information for red drum, including : aging verification, and length information, age and size of recruitment into offshore stocks, age and size of sexual maturity, the dynamics of age classes in the FCZ in association with offshore exploitation, and percent escapement from the Alabama estuarine systems into the EEZ.

G. Summary of Work: (See attached report)

Age Verification - Twenty thousand 6-8 " juvenile red drum will be producedat MRD's Claude Peteet Mariculture and tagged and released into the coastal areas of Alabama. Information to be obtained from the release and subsuquent recapture of stocked red drum include: (a) Movement of sexually immature red drum, (b) time of recruitment into the offshore stocks, (c) verification of aging techniques by stocking and tagging known age stocks, (d) Movement of offshore stocks, (e) A crude estimate of fishing mortality, (f) A crude estimate of inshore and offshore harvest by user groups.

H. Fiscal Year 1989-1990 $70,000

I. Percent Federal Funding - 100

J. Total Project Cost for Project - $70,000

89MAR 11 A 02

MARPIN PROJECT SUMMARY

A: Project Title: The Variation of Year-Class Strength and Annual Reproductive Output of Red Drum, Sciaenops ocellatus, and Black Drum, Pogonias cromis, from the Northern Gulf of Mexico

B: Project Status: New X Cont. ___

C: Start: Oct. 1, 1989 End: Sep. 30, 1992

D: Name, Address, and Telephone Number of Applicant:
Louisiana State University
Coastal Fisheries Institute, Center for Wetland Resources
Baton Rouge, Louisiana 70803-7503
(504) 388-6283

E. Principal Investigators: Charles A. Wilson and Daniel W. Beckman

F. Project Objective: To provide age, year-class strength, and reproductive information needed for management of red drum and black drum in the northern Gulf Mexico, including: 1) Determination of age frequency distributions of populations each year for 3 years, 2) Comparison of year-class strengths and annual growth rates with environmental variables, 3) Estimation of adult mortality rates, 4) Estimation of spawning frequency and batch fecundity and identification of relationships between reproductive output and age, size, and year-class strength, 5) Collection of age, growth, and reproductive information on species caught incidental with red and black drum.

G. Summary of Work: Red drum and black drum will be randomly sampled fro purse seine landings in northern Gulf of Mexico federal waters. Red drum purse seine samples will be concentrated during the spawning season, and will be augmented with samples from commercial long-line catches. Black drum purse seine samples will be augmented with fish sampled at commercia seafood houses. Length, weights, and sex will be recorded and otoliths a gonads removed from fish sampled. Otoliths will be sectioned and annuli counted for age determination. Otolith annulus widths will be measured a an indication of historic growth rates. Female gonads will be sectioned and stained for histological examination, and oocytes will be staged.

Annulus widths and population age-class structure will be compared between years and with environmental variables. Mortality estimates will be made using decline in abundance of consecutive year classes and change in abundance of individual cohorts over time. Spawning frequency will be estimated utilizing the ratio of spawning females to total mature females Batch fecundities will be estimated gravimetrically through hydrated oocy counts. The relationship between batch fecundity, spawning frequency, ar age will be determined.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 94,931	$290,206	(83.8% of Total)
Matching	$ 17,818	$ 56,212	(16.2% of Total)
Total	$112,749	$346,418	(100% of Total)

84MAR11.A03

MARFIN PROJECT SUMMARY

Project Title: Allozyme Variation in Black Drum, Red Drum, and Spotted Seatrout: Stock Boundaries, Recruitment, and Stock Composition

Project Status/ Duration: New xx Con't ____ Start Date 10/01/89 End Date 09/30/90

Name, Address, and Telephone Number of Applicant:

Louisiana Tech University
Office of University Research
Ruston, LA 71272
(318) 251-4130

Contact Person: Dr. Paul R. Ramsey
Department of Zoology
(318) 257-4573

Principal Investigator(s) and "Brief" Statement of Qualification:

Paul R. Ramsey, Professor of Zoology (Ph.D.)

Project Objective:

To complete the electrophoretic analysis (with 12 polymorphic systems) of adult red drum and black drum, define stock boundaries for spotted seatrout and black drum, and use rare alleles and migration models to simulate escapement/recruitment.

Summary of Work: (for continuing projects, include progress to date)

Electrophoresis of proteins will be used to complete the analysis of late-arriving red drum and black drum samples from a previous MARFIN project. A full complement of 12 known polymorphic systems will be used for red drum. In order to define the stock boundaries, 10 samples of 50 black drum will be taken from Vermilion Bay, LA to Port Aransas, TX and similar sampling will occur for spotted seatrout from Mississippi Sound to Cedar Key, FL. Samples of 100 red drum will be obtained from selected sites.

The work plan includes use of samples of drum already on-hand, selective (but, intensive) sampling, and sophisticated data analysis and computer simulations:

* To apply the Genetic Stock Identification (GSI) procedures and simulations to the expanded data set for red drum;
* To locate stock boundaries for black drum and spotted seatrout; and
* To perform rare-allele analysis for black drum and spotted seatrout and estimate migration rates and gene flow.

Thus, this proposed project is to complete the analysis of population structure for these three sciaenid species. The GSI procedure, examined, used, and obtained from the State of Washington fisheries laboratory at Tumwater, will provide estimates of regional contributions to the schools of offshore red drum. Applied on a yearly basis, the technique can show changes in recruitment numbers and patterns.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 28,117	$ 28,117	(95.2 % of Total)
Matching	$ 1,425	$ 1,425	(4.8 % of Total)
Total	$ 29,542	$ 29,542	(100.0% of Total)

84MAR 11,A,C4

MARFIN PROJECT SUMMARY

Project Title: Age Validation of adult black drum in Florida

Project Status/Duration: Cont__ New_XX_ Start Date 10/1/89

Name, Address, and Telephone Number of Applicant:

Florida Department of Natural Resources
Florida Marine Research Institute
100 Eighth Ave. S.E., St. Petersburg, FL 33701-5095
Phone: 813/896-8626

Principal Investigator (s) & "Brief" Statement of Qualifications:

Michael D. Murphy: M.S. Wildlife and Fisheries Sciences, Texas A&M University, 1981: eight years active research on life history, population dynamics, and stock assessment of scieanids off Florida.

Ronald G. Taylor: B.S. Marine Biology, Auburn University, 1970; fourteen years of experience determining aspects of fisheries species composition and fish reproduction.

Project Objective: To determine and validate the age of adult black drum using tetracycline-marked fish.

Summary of Work:

Approximately 300 black drum, each larger than 15 lbs., will be captured from the Mosquito/Indian River Lagoonal system, tagged with a numbered internal anchor tag, injected with 30 mg/kg body wt. oxytetracycline, and released back into the wild. Subsequent recaptures from this group will have their otoliths sectioned and examined for the number of opaque bands deposited after the fluorescing band of tetracycline. This reference mark will be used to test the hypothesis that one opaque band forms each year and thus are accurate indicators of age.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 4,200	12,600	100
Matching	0	0	0
Total	$ 4,200	12,600	100

ATTACHMENT A

MARFIN PROJECT SUMMARY

NA90AA-H-MF111

Project Title: UTILIZATION OF FISHERIES-INDEPENDENT DATA: FUTURE MANAGEMENT IMPLICATIONS

Project Status: New X Con't __ Start 1 Oct. 1989 End 30 Sept. 1992

Name, Address, and Telephone Number of Applicant:
Louisiana State University
Coastal Fisheries Institute
Center for Wetland Resources
Baton Rouge, Louisiana 70803-7503
(504) 388-6734

Principal Investigator(s):
R. F. Shaw, Ph.D., Assistant Professor
J. L. Lyczkowski-Shultz, Ph.D., Associate Biologist
J. G. Ditty, M.S., Research Associate IV
B. H. Comyns, M.S., Research Associate
J. R. Warren, M.S., Associate Biologist, Data Analyst

Project Objective: Utilize fisheries-independent data on early life stages of selected species of commercial and recreational importance in the Gulf of Mexico to: (1) develop spawning biomass estimates (SBE) for Atlantic thread herring, scaled sardine and possibly for round herring and Spanish sardine; (2) refine and continue time series of SBE's for red drum; (3) investigate for red drum the relationship between the abundance of offshore larvae and inshore postlarvae; (4) provide fisheries-independent data (spawning ecology and early life history) for our selected species of current or potential commercial and recreational fisheries concern, i.e., striped mullet, amberjacks, cobia, bluefish, Atlantic spadefish, and tripletail; (5) recommend options regarding long-term monitoring of adult populations using early life stages and data on reproductive parameters.

Summary of Work: Year 1. Calculate SBE utilizing a recently-generated gulfwide, larval clupeid database (1982-86) following and updating the methodologies employed by Houde (1977a, b, and c) for those species, and compare the estimates. Provide a more precise (i.e., reliable) estimate of red drum SBE using the expanded areal and temporal coverage, and increased sampling frequency of the planned 1989 survey of east LA-MS-AL inner shelf. Calculate overall precision of red drum SBE's (1987-89) by incorporating the variance components contributed by adult population parameters, namely spawning frequency and batch fecundity. Compile postlarval red drum abundance data from a daily (1987-) and twice-monthly (1973-) estuarine sampling associated with the Mississippi Fisheries Assessment and Monitoring (FAM) Program; evaluate the 1989 daily sampling regime for red drum; compare these data with offshore larval red drum collections; and ultimately develop an offshore larvae to inshore postlarvae recruitment index. Years 2 and 3. Continue investigating the linkage between offshore larvae and inshore postlarvae utilizing selected offshore and estuarine databases from Mississippi and Louisiana waters. Analyze gulfwide, SEAMAP-collected ichthyoplankton samples and supporting oceanographic data for our targeted species of fisheries concern.

Project Funding	Total Funding Requested (3 yrs)	Funds Requested 89-90	Percentage of Total
Federal	$ 238,800	$ 79,600	(80.3% of Total)
Matching	$ 58,450*	$ 18,734**	(19.7% of Total)
Total	$ 297,250	$ 98,334	(100% of Total)

*Includes $42,544 of match support from GCRL.
**Includes $13,636 of match support from GCRL.

Revised 7-17-89

89MAE11.D.03

MARFIN PROJECT SUMMARY

Project Title:The Relative Value of Vegetated and Unvegetated Habitats to Juvenile Spotted Seatrout and Red Drum: Comparisons of Nursery Habitats and Field Growth Rate Measurement Techniques

Project Status: New X Con't Start Date October, 1989 End Date September, 1991

Name, Address, Telephone No. of Applicant: Kenneth L. Heck, David Nadeau;Marine Environmental Sciences Consortium, Dauphin Island Sea Lab & University of South Alabama's Coastal Research and Development Institute, Dauphin Island, Alabama, 36528, (205) 861-2141

Principal Investigator(s) and "Brief" Statement of Qualifications:
Kenneth L. Heck, Ph.D. 1976. (Florida State University).
David Nadeau, M.S. (University of South Alabama)(Expected 1989).

Project Objective: (1)To better understand the habitat requirements of early juvenile spotted seatrout and red drum by determining the relative importance of food availability and refuge from predation in explaining the association of both species with seagrass habitats; and (2) to develop a simple, cost-effective method of comparing in situ individual growth rates of juvenile fishes among potential "nursery" habitats.

Summary of Work:(For continuing projects, include, briefly, progress to date).

We will use field growth comparison experiments to assess the relative habitat value of seagrass (Halodule wrightii) and nearby unvegetated habitats for early juvenile spotted seatrout and red drum. We will also evaluate different methods of measuring growth of fishes under field experimental conditions with the goal of developing a cost-effective technique for comparing habitat favorability for early juvenile fishes. This work is of both theoretical and practical importance, for it seeks to determine how habitat quality ultimately influences the size of adult fish populations. In particular, this work will allow us to rank quantitatively the various types of estuarine nursery habitats according to the growth rates exhibited by fishes in vegetated and unvegetated habitats.

Project Funding:	Initial Funds Requested Year 1	Total Funds Requested Year 1 & 2	Percentage of Total
Federal	$ 58,494	$ 139,342	(86 % of Total)
Matching	$ 9,280	$ 19,349	(14 % of Total)
Total	$ 67,774	$ 139,342	(100 % of Total)

MARFIN PROJECT SUMMARY

Project Title: Fishery Independent Characterization of Population Dynamics and Life History of Striped Mullet in Louisiana--Year Three.

Project Status: New ___ Con't X Start Oct. 1, 1989 End Sept. 30, 1990

Applicant: Louisiana State University
Coastal Fisheries Institute
Baton Rouge, LA 70803-7503
(504) 388-6093

Principal Investigator(s): Bruce A. Thompson Ph.D., Robert L. Allen, Jeffrey H. Render, and David L. Nieland

Project Objectives: (1) To produce a manuscript on age validation from otoliths, (2) To determine age and growth of all size classes of striped mullet in Louisiana, (3) To determine sex ratios, fecundity, timing, and location of gonad development to understand the reproductive cycle of striped mullet, (4) To determine population genetics of Louisiana striped mullet, (5) to conduct a workshop on the biology and fishery of striped mullet, (6) synthesize data from commercial mullet fishery project with data from this project.

Summary of Work: We are conducting a fishery independent analyses on Louisiana striped mullet population dynamics and life history. Striped mullet are being obtained from seven coastal areas via the Louisiana Department of Wildlife & Fisheries Finfish Section. We will continue to obtain the following information from striped mullet: (1) standard, fork, and total length, (2) total and empty body weight, (3) body girth, (4) sex, (5) gonad weight, (6) liver weight, (7) otoliths, (8) scales, and (9) maturation stage of gonads.

Age validation work has progressed to where we are confident the otolith marks are true annuli, generally formed between April and July. We will continue to determine size-at-age and age-at-maturity information for striped mullet. We will check our findings from Year One and Year Two during Year Three for possible annual variation. Length/weight and body proportion relationships are being determined across the state for different age classes. Histological information is being obtained from subsamples of striped mullet to compare with the reproductive information derived from ripe, commercially-caught striped mullet from the 1985 through 1988 Louisiana roe fishery. We will determine age, size at maturity, and if striped mullet mature at a smaller size than obtained previously from the commercial fishery, determine size related fecundity for these smaller fish. Samples of muscle, liver, and eyes will be taken from selected striped mullet to determine population genetics using starch gel electrophoresis. A workshop on the biology and fishery for striped mullet in the Gulf of Mexico in proposed for 1989 or 1990. We have completed a study, funded by the State of Louisiana, on the commercial mullet fishery and information from that project will be synthesized into our MARFIN work during Year Three. Information from Year One has been presented in Thompson et al. (1989b).

Project Funding	Year Two Funds Requested	Total Funds Requested	Percentage of Total
Federal	$ 51,224	$148,028	(84.3% of Total)
Matching	$ 8,024	$ 27,585	(15.7% of Total)
Total	$ 59,248	$175,613	(100% of Total)

2. PROJECT SUMMARY

a. **Project Title**: Supplement length and sex frequency data and catch per unit of effort information from the commercial fishery for Spanish mackerel (Scomberomorus maculatus) off west Florida

b. **Project Status**: Continuing

c. **Project Duration: Start Date**:10/1/1989 **End Date**:09/30/1990

d. **Applicant**: Rosenstiel School of Marine and Atmospheric Science
University of Miami.
4600 Rickenbacker Causeway
Miami, Florida 33149
Telephone: (305) 361-4604

e. **Principal Investigator(s)**:
Dr. Nelson M. Ehrhardt, Associate Professor
Division of Biology and Living Resources
Telephone: (305) 361-4741

f. **Project Objectives**: The goal of this project is to improve the data base used to assess exploited Spanish mackerel stocks in the eastern Gulf of Mexico. Objectives include: 1) Designing and implementing a 3-year frame survey to collect supplementary size frequencies and catch per unit of effort segregated by sex of Spanish mackerel caught in the commercial fishery off the west coast of Florida, 2) evaluating accuracy and precision of the information presently gathered by various other sources.

g. **Summary of Progress to Date**: The project consists of collecting catch and fishing effort statistics and sampling catch to obtain size and sex frequency distributions from Spanish mackerel commercial fishing trips. In the previous 2 years of the project, sampling effort has been allocated following an experimental design with various stratification levels and randomized elements which include: areas, fleets, and within landing sample replications. The statistical sampling design was first implemented during the 1987/1988 fishing season. During that season, 3633 fish were measured from samples drawn from 345,889 lb of fish landed. Analyses of data collected during that period showed a significant variability among samples within landings. To stabilize within landing variance, the number of replicate samples and sample size in replicate samples from individual trips were increased from 1 100-lb bail per landing to 2.5% of the estimated landing weight (2 to 8 100-lb bails per landing) during the 188/1989 season. Work is still in progress, and at this time more than 9000 fish have been measured and 100 otoliths for age-length key estimation have been collected.

h. **Total MARFIN Funds Requested**:

FY 1987	$40,929	(Percent of total 31.9%)
FY 1988	$42,601	(Percent of total 33.2%)
FY 1989	$44,895	(Percent of total 34.9%)

i. **Project costs to be provided from non-Federal Government**: No other sources of funding are contemplated.

Attachment A
NA90AA-H-MF095

MARFIN PROJECT SUMMARY

a. Project Title: Mississippi (MS) National Marine Fisheries Service (NMFS) King and Spanish Mackerel Sampling Program

b. Project Status: New ____ Con't X

c. Project Duration: Start Date ~~12/1/89~~ 2/1/90 End Date 11/30/90 1/31/91 ☺

d. Name, Address, and Telephone Number of Applicant:

Mississippi Department of Wildlife Conservation
2620 West Beach Blvd.
Biloxi, MS 39531 (601) 385-5860

e. Principal Investigator(s) and "Brief" Statement of Qualifications:

Fred Deegen - Ph.D., Chief, Data Management, 10 years Fisheries experience
Michael Buchanan - B.S., Fisheries Biologist I, 4 years Fisheries experience
Steve Breland - Wildlife and Fisheries Technician I, 10 years experience

f. Project Objective:

To collect King and Spanish Mackerel biological information for use in state and federal fisheries management programs.

g. Summary of Work: (For continuing projects, include, briefly, progress to date)

1. In FY 1988, a total of 378 Spanish Mackerel lengths have been recorded and 262 tissue and otolith samples have been obtained and sent to the NMFS (Panama City Lab).

2. Collection of length, sex, tissue and otolith samples from King and Spanish Mackerel landed on the Mississippi Gulf Coast. Target quotas for length data will be 250 fish per year (FY 89,90,91). Target quota for otholith and tissue samples will be 100 per year (FY 89,90,91).

3. Collection of length, sex, tissue and otolith samples for Spanish Mackerel landed on the Mississisppi Gulf Coast. Target quota for length information is 500 and 100 otolith and tissue samples will be obtained per year (FY 89,90,91).

h.

Project Funding	Year 1(88-89)	Year 2(89-90)	Year 3(90-91)	% of Total
Federal	24,683	26,856	28,945	(100% of Total)
Matching	---	---	---	
Total	24,683	26,856	28,945	

ATTACHMENT A

MARFIN PROJECT SUMMARY

Project Title: Larval Food, Growth, and Microhabitat Selection: Factors Affecting Recruitment of Estuarine-dependent fishes in the northern Gulf of Mexico 02/01/90 01/31/91

Project Status: New ___ Con't X Start: ~~Oct 1, 1989~~ End: ~~Sep 30, 1990~~

Name. Address, and Telephone Number of Applicant:
Louisiana State University
Coastal Fisheries Institute
Center for Wetland Resources & Zoology and Physiology
Baton Rouge, Louisiana 70803-7503
(504) 388-6512

Principal Investigator(s):
D. M. Baltz, Assistant Professor, Coastal Fisheries Institute
J. W. Fleeger, Professor, Zoology and Physiology

Project Objectives:

To better understand the factors affecting the recruitment of black drum, red drum, and spotted seatrout, we propose to identify and characterize the critical nursery microhabitats of these three important recreational and commercial species that range throughout the northern Gulf of Mexico and Southeast Atlantic. Our objectives are:

1) to identify and characterize nursery microhabitats by systematically sampling larval and postlarvarl fishes along environmental gradients in a coastal estuary,
2) to identify important food items in their diets,
3) to characterize recent growth by examining daily increments on otoliths, and
4) to relate microhabitat selection, food, and daily growth data to identify important factors affecting recruitment.

Summary of Work:

Larval and postlarval distribution in marsh microhabitats will be studied using a drop sampler to identify the primary nursery area. The nursery area will then be characterized using microhabitat variables (e.g., depth, salinity, temperature, dissolved oxygen, turbidity, substrate type, etc.). Analysis of larval samples will yield information on the daily growth rates and diet of young-of-year fishes, which together with microhabitat data will be used to evaluate the recruitment potential of various microhabitats in an estuarine nursery area. Since the project was initiated we have summarized existing microhabitat data on the target species and a wide range of other fishes (Table 1). We have analyzed the diets of about two dozen spotted seatrout and about 50 red drum and are preparing their otoliths to describe daily growth. Since all techniques were worked out using spot, we are accumulating useful data on another sciaenid.

Project Funding	Initial Funds Requested	Total Funds Requested	Percentage of Total
Federal	$73,400	$73,400	(85.3% of Total)
Matching	$12,677	$12,677	15% 14.7% of Total)
Total	$86,077	$86,077	(100% of Total)

ATTACHMENT A C.3
Grant No. ~~NA90AA-H-MF154~~ NA90AA-H-MF107

MARFIN PROJECT SUMMARY

Project Title: Population Genetic Studies of Red Drum in the Gulf of Mexico

Project Status: New ___ Con't X Start Date ~~1/1/90~~ 4/1/90 End Date 12/31/90 3/31/91
Duration

Name, Address, and Telephone Number of Applicant:

Texas A & M Research Foundation
Box 3578
College Station, Texas 77843
(409) 845-8600

Principal Investigator(s) and "Brief" Statement of Qualifications:

PI: Dr. John R. Gold, Professor Genetics.
Dept. of Wildlife & Fisheries Science
Texas A&M University
College Station, Texas 77843
(409) 845-5702

and

CO-PI: Dr. Gary C. Matlock,
Director of Fisheries
Texas Parks & Wildlife Dept.
4200 Smith School Road
Austin, Texas 78744
(512) 389-4863

PI Qualifications: Sixteen years experience in fish genetics research, including work on chromosomes, protein electrophoresis and nuclear and mitochondrail DNAs. Three years experience working on the genetics of red drum.

Project Objective:

(1) To determine if significant population substructuring (discrete breeding units) exist within the Gulf red drum fishery;
(2) To estimate relative levels of mixing (migration) between and among nearshore and offshore red drum sample localities; and
(3) To provide critical scientific information necessary for sound management of the Gulf red drum resource.

Summary of Work: (For continuing projects, include, briefly, progress to date)

(1) Appropriate tissues (heart, kidney, liver, muscle, eye, brain) will be removed from ca 25-30 adult red drum from each of eight discrete offshore localities within the Gulf, and from ca 35-40 juvenile red drum from one nearshore locality along the Gulf coast. Tissues will be flash frozen in liquid nitrogen. Lengths and weights will be taken from from all individuals, and otoliths, scales, and gonads will be removed for age and sex verification.
(2) Sequence variation in red drum mitochondrail (mt) DNAs will be analysed through restriction enzyme digestion and Southern hybridization using cloned red drum mt DNA probes. Up to 6 different restriction enzymes will be used. Allelic variation at a minimum of three, highly polymorphic presumptive nuclear gene loci will be analysed using starch or polyacrylamide gel electrophoresis of proteins.
(3) The resultant data on mtDNA sequence and protein variation will be used to: (a) determine if significant genetic heterogeneity (i.e., the existence of separate breeding units) occurs within the fishery; and (b) estimate relative levels of migration between the localities sampled.

Project Funding	Year 2 Funds Requested	Total Funds Requested	Percentage of Total
Federal	$71,462	$71,462	71% of Total
Matching	$28,690	$28,690	29% of Total
Total	$100,152	$100,152	100% of Total

MARFIN PROJECT SUMMARY

Project Title: An Evaluation of the Use of Large Fabricated Artificial Reefs to Enhance Fish Populations at Different Depths in the Florida Keys

Project Status/: Duration New ___ Con't X **Start Date** 10/1/89 **End Date** 9/30/90

Name, Address, and Telephone Number of Applicant:

Florida Keys Artificial Reef Association, Inc.
P.O. Box 917
Big Pine Key, FL 33043 # 305- 745-2719

Principal Investigator(s) and "Brief" Statement of Qualification:

- Curtis Kruer, M.S. Marine Sciences, 1977, Univ. of South Florida. 15 years field experience (incl. 10 years government) in marine environments of South Florida, Pres. FKARA 1985-1986, USCG Certified Ocean Operators license.
- Terry Thommes, M.F.A., 1979, Univ. of Georgia. Pres. FKARA, 16 years fishing and diving experience in Keys, licensed General Contractor.

Project Objective:

To obtain much needed quantitative information on whether artificial habitats produce significant new biomass thereby enhancing fishing opportunities or merely redistribute fishes already present. With this information, future management decisions regarding reef siting and the use of large fabricated units to enhance fishery resources are more properly made.

Summary of Work: (For continuing projects, include, briefly, progress to date)

In late June, 1988, 7 fabricated concrete units (weighing up to 8 tons each) were placed by the FKARA in sandy areas of the Florida Reef Tract off Big Pine Key in the Florida Keys. Two large units were placed 50 m apart and 50 m from adjacent natural reef lines at depths of 14 m and 25 m. Three smaller, low profile units were placed, also with 50 m seperation at a depth of 8 m approximately 50 m from a nearby shallow reef area. Using a visual census method developed for quantifying reef fish populations by NMFS in Miami the work outlined in the attached work description was initiated following placement.

The first 12 months of the planned census work has recently been completed with the 1st year MARFIN funding covering the last 8 months of the project year. The artificial units were censused as planned for fish species composition, abundance and length frequency information. The first year's effort resulted in 64 individual total counts of the fish population on the units as well as 38 total counts of the macroinvertebrate community. This is slightly more effort then originally outlined. Using the standard method proposed, a total of 33 counts were conducted over the year on the deep natural reef, 38 on the mid-depth natural reef and 64 on the shallow natural reef. In lieu of monitoring on the 4th shallow unit originally proposed but not placed, effort is being directed to conducting censuses on nearby

APPENDIX C

RED DRUM NEWSLETTERS

sciaenops

newsletter of the state-federal cooperative program for red drum research in the gulf

Volume 3, Numbers 2-4 March 1990

COOPERATIVE RED DRUM RESEARCH PROGRAM

HISTORY: As total landings of red drum increased dramatically in the early 1980's -- from eight million pounds in 1979 to 17 million pounds by mid-1986 -- fishery managers realized that critical information was lacking to effectively manage this resource. Much of the increased exploitation was occurring on the large, offshore red drum schools for which the size and age composition was not known. Little information was available on the recruitment rate of sub-adult fish from nearshore waters to the offshore population. Also, it was uncertain whether one or several separate stocks of red drum existed in the Gulf.

Following the initiation of management planning efforts in 1986, managers realized the need for scientific information about red drum. Meeting in May 1986, leading university, state, and federal fishery management specialists undertook to define areas of information needs and devise research programs to answer these needs. A coordinated research plan specifying objectives, tasks, and sampling schemes was produced and funding for individual projects sought through the Marine Fisheries Initiative (MARFIN) Program.

Since October 1986 when the Cooperative Red Drum Program began, 13 separate projects, both single and multi-year, have been carried out to examine the red drum resource. Much-needed management data has been produced in areas of stock identification and assessment, migration, age and growth, and economics. New assessment techniques have been investigated including aerial surveys and back-calculations from egg and larval densities to estimate adult spawning biomass.

The Cooperative Red Drum Program in completing its original mission has provided a great deal of quality information regarding red drum. This data has been used by managers to develop conservation programs; by scientists to assess future research needs; and by individuals to increase their personal familiarity with the species. As the Cooperative Red Drum Program completes its original scope, a number of activities will be continued by the states using other sources of funds and by other individual participants. Important areas of red drum biology to be monitored include: escapement rate of juveniles from inshore waters; refining estimates of spawning stock size; and age structure of the offshore population. These ongoing efforts will be critical to evaluating the effect of management measures now in place.

The following is a summary of the final work efforts under the original cooperative research program.

STOCK ASSESSMENT

THE GULF COAST RESEARCH LABORATORY (GCRL) continued its mark-recapture efforts. Through December 1989, 1099 fish were tagged and 208 tags were returned for a 19% return rate. Size at age calculations have revealed that red drum reach 14" TL by the end of the first year and approximately 22" by the end of the second.

The December 1989 freeze appeared to have minimal effect on red drum in Mississippi. Although some mortality was observed, and unsubstantiated reports of over 3000 dead individuals were received; actual recorded mortalities were low.

GCRL is continuing stock assessment of red drum via a three year Wallop-Breaux program grant from the Mississippi Department of Wildlife, Fisheries and Parks, Bureau of Marine Resources. In the first year of this project, GCRL will continue to monitor sub-adults in inshore waters and attempt to target tagging efforts on 22" TL fish (2-3 1/2 years old). The project will also involve age validation of inshore sub-adults by reading otoliths as recommended by Dr. Phil Goodyear in the 1989 MARFIN Status Report.

- - - James Warren

THE GULF COAST RESEARCH LABORATORY also published the final report of its efforts to assess spawner biomass from larval abundance in 1986, 1987, and 1988. These estimates were much lower than those determined from mark-recapture data for the same period. The cause of this underestimation was probably variability of larval catch which was used to calculate egg production and spawner biomass.

Sampling in September 1989 was tripled in order to reduce variability. During this cruise 101 samples were taken in the north central Gulf with approximately 50% containing red drum. The cruise was a coordinated effort funded by SEAMAP and MARFIN.

Future sampling and analysis of red drum larvae is anticipated under new efforts of MARFIN and SEAMAP.

- - - Joanne Lyczkowski-Shultz

THE GULF COAST RESEARCH LABORATORY completed efforts to determine separate stocks based on morphological characteristics. Although the morphosis imagining system and multivariate analysis were successful in identifying variations in individual fish, the data did not reveal significant differences in stocks.

- - - Stuart Poss

gulf states marine fisheries commission
p. o. box 726 • ocean springs, ms 39564 • 601/875-5912

THE ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (ADCNR) tagged 217 "wild caught" red drum from December 1988 through December 1989. A total of 38 returns were received for the same period. This 17.5% return rate compared well with the 19% rate in Mississippi (GCRL). Additionally, 20,708 hatchery-reared fish were tagged.

During the project period hatchery-reared fish were returned most frequently, 150-199 days after release, while wild fish returns were most numerous 0-49 days thereafter. Movement was similar for both groups, but the incidence of returns per releases was greater for wild fish.

In the future ADCNR will continue tagging wild and hatchery-reared red drum. Also, they plan to verify age information by otolith examination of hatchery-reared returns. Much of these future efforts will be supported by MARFIN.

- - - Vernon Minton

THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES (LDWF) completed its mark-recapture project in September 1989. From April-September 1989, 668 fish were tagged and 90 tags were returned. This 13.5% return rate is only slightly higher than the 9% recorded since the 1986 start of the project. LDWF will continue tagging red drum in association with ongoing monitoring and assessment projects in the future.

- - - Joey Shepard

TEXAS A&M UNIVERSITY has investigated stock substructuring and mixing of potential subunits using protein and mitochondrial DNA electrophoresis techniques. This data indicates that there may be weak subdivision between northern Gulf and Atlantic red drum. However, these groups appear to comprise single, randomly mating populations.

- - - John R. Gold, et. al.

FLORIDA DEPARTMENT OF NATURAL RESOURCES' MARINE RESEARCH INSTITUTE (FDNR) tagged 432 red drum in Apalachicola Bay from April-September 1989. By early 1990 approximately 108 returns have been recorded for a 25% return rate. Study data on the disappearance of fish from the estuary with age suggested that the decline in numbers is not due to fishing. Paradoxically, 85% of the returns were from the estuary within 1.0 km of the release site.

- - - Mike Murphy

AGE AND GROWTH

THE ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES amended its project to forego a portion of the grant concerning otolith collection and analysis. This change was necessitated because of the inability to collect otoliths from the offshore populations and the low availability of otoliths from inshore samples. Instead a video was produced during the project to inform the general public of basic facts regarding red drum populations and the need for more stringent regulations of catch. This 15 minute, 52 second film was a joint effort of the ADCNR, AL-MS Sea Grant Program and the Alabama Cooperative Extension Service.

- - - Vernon Minton

LOUISIANA STATE UNIVERSITY'S COASTAL FISHERIES INSTITUTE (CFI) has processed 487 red drum for age, growth, and reproductive analysis since March 1989. Some fish were received from a purse seine fisherman targeting black drum. Under contract he provided CFI with well-developed, adult females on the verge of reproduction and a good representation of the spawning population.

In December 1989, 25 red drum were received from a "bandit" snapper fisherman. The fish ranging from 10-15 pounds, were caught in approximately 160 feet of water and were reported to be abundant.

For years fishermen have been reporting the presence of a population of small, reef-associated red drum separate from the schooling populations which have been most often studied. Sampling of this population will continue.

CFI has started a new three-year project to monitor age frequency distribution and reproductive activities of both red and black drum schools off the coastlines of Mississippi and Louisiana.

- - - Chuck Wilson

THE FLORIDA DEPARTMENT OF NATURAL RESOURCES' MARINE RESEARCH INSTITUTE completed age validation studies of adult red drum intramuscularly injected with oxytetracycline at 25 mg/kg of body weight. After freedom for approximately one year, eight returns of fish 9-28 years of age showed that opaque bands on the otoliths were annual.

- - - Mike Murphy

ECONOMICS

THE UNIVERSITY OF SOUTHERN MISSISSIPPI'S study on economic value of recreational red drum fishing indicates increases in catch rates per trip will have greatest income impact in the marine services and wholesale/retail trade sector, followed by service stations and eating/drinking establishments. Hotel/motel and the lodging sector would be the least affected sector in terms of either income or employment rate.

Socioeconomic profiles indicate red drum anglers average slightly less than 40 years of age, fish closer to home than other angling groups and rank catching fish only behind sport as the primary motivation for fishing.

- - - Trellis Green

NEWS AND NOTES

THE MISSISSIPPI DEPARTMENT OF WILDLIFE, FISHERIES AND PARKS has recently considered for adoption of 22" minimum size limit for red drum. Also considered is a three fish/person/day bag limit with an allowance of only one fish larger than the 30" maximum size.

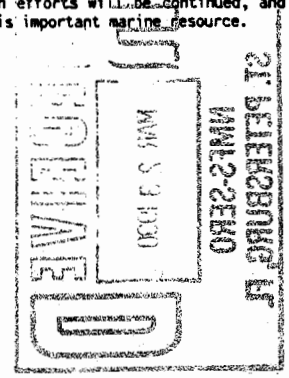
In February 1990 the Department in cooperation with Mississippi State University, the Gulf Coast Research Laboratory and Mississippi Power Company tagged and released approximately 1000 red drum averaging about 13" each into Back Bay of Biloxi. This effort follows a similar one conducted in December 1988 where nearly 750 fish were tagged and 50 returned to date.

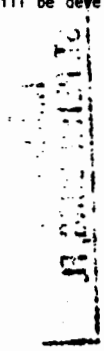
TEXAS reported losses of 62,000 red drum from the December 1989 freeze.

LOUISIANA also reported large numbers of red drum killed in the December 1989 freeze. The effect on the population is unknown.

LAST ISSUE

This edition constitutes the last issue of Sciaenops. Important strides have been made in the knowledge base and management of red drum in the Gulf of Mexico since the inception of the state-federal cooperative program. Many research efforts will be continued, and new initiatives will be developed in the future to insure the health of this important marine resource.





NEWS AND NOTES

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LAST ISSUE

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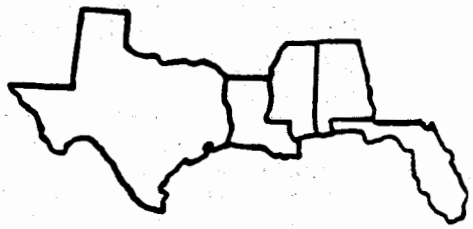
COMPACT NEWS



A Newsletter from the Gulf States Marine Fisheries Commission Staff

Volume 1, Number 2
April 1989

THE EXECUTIVE DIRECTOR'S REPORT

The Annual Spring Meeting of the Commission held in New Orleans in March was a productive, well attended meeting. As many of you know, a great deal of our work is performed by committees and then brought forward to the full Commission for policy actions and direction. These activities are covered under the program coordinators' reports and include some major accomplishments.

While unable to personally testify, I prepared on the Commission's behalf the Gulf States' formal testimony to the Merchant Marine and Fisheries Subcommittee on Fisheries and Wildlife Conservation and the Environment concerning reauthorization of the Interjurisdictional Fisheries Act of 1986, the Anadromous Fish Conservation Act and the NOAA Marine Fisheries Program Authorization Act. Copies of the testimony are available upon request. The acts are expected to be reauthorized for three additional years.

On behalf of the Commission, I prepared testimony to be presented to the House Appropriations Subcommittee on Commerce, State and the Judiciary. Much of our State/Federal program for cooperative work in marine fisheries falls under the Department of Commerce and it is vitally important to the States and the Federal Government to have adequate amounts of funding for our work. The Administration has tried since 1981 to drastically cut fishery funds; however, the Congress has restored the majority of these funds in the Federal Budget based on additional input such as these testimonies. Again, copies are available upon request.

The Marine Fisheries Initiative (MARFIN) solicitation of projects for financial assistance awards has been published in the *Federal Register*. Applications must be received in the NMFS Regional Office by April 24, 1989. For further information contact Dr. Donald Ekberg at 813/893-3720.

I would like to congratulate Lucia Hourihan on the fine production of our newly instituted newsletter. She is our publication specialist and in charge of this GSMFC project. I have received numerous positive comments about the newsletter from many of you. We hope the information transferred by this mechanism is useful and timely.

UPCOMING MEETINGS

SEAMAP Red Drum Work Group — April 17, 1989, Radisson Admiral Semmes Hotel, 251 Government Street, Mobile, AL, 205/432-8000

40th Annual Fall Meeting of the GSMFC — October 16-20, 1989, Royal d'Iberville Hotel, 3420 West Beach Boulevard (US Hwy 90), Biloxi, MS 39531-5293, 601/388-6610

Other meetings tentatively scheduled for June/July include the Marine Fisheries Initiative (MARFIN) Program Management Board, Tampa, FL, and the Fishery Management Committee.

For further information on meetings contact Ginny Herring.

SOUTHEAST AREA MONITORING AND ASSESSMENT PROGRAM (SEAMAP)

Tom Van Devender

The TCC SEAMAP Subcommittee continued its work toward a five-year management plan for the Gulf component of SEAMAP. A series of goals and objectives was developed, and once incorporated with those to be developed by the South Atlantic and Caribbean, will serve to guide the entire program. Each of the three components will then plan separate activities to meet the set of common objectives. Subcommittee members are currently assessing future resource information needs that can be met by fishery-independent surveys.

SEAMAP Adult Finfish Work Group members have initiated a project to identify existing and prior research activities designed to monitor and assess adult finfish. Summaries of State and Federal activities will be pooled to generate a complete picture of fishery research around the Gulf and will form a basis from which recommendations may be made for conducting future long-term fishery independent surveys.

The 1989 SEAMAP Spring Plankton Survey will begin April 24 and continue through May 23. The NOAA Ship ALBATROSS and Florida's R/V HERNAN CORTEZ II will sample offshore waters from the Dry Tortugas to 94°W. Longitude. Station locations are in a systematic grid across the northern Gulf in increments of 90° latitude/longitude. Primary objective of this survey is to provide data on the distribution and abundance of eggs and larvae of bluefin tuna as well as other commercial and recreational species.

MARFIN RED DRUM PROJECT

Tom Van Devender

Now in its third year of operation, this project facilitates cooperative activities of red drum researchers around the Gulf and provides a forum for information exchange. Participants in the "State Federal Cooperative Program for Red Drum Research" presented status reports on their research projects at the GSMFC Annual Spring Meeting in New Orleans. Information was presented in the broad areas of biological profiles for red drum, including age, growth and reproduction studies; stock assessment, including mark/recapture and back-calculated biomass studies and an economic analysis of recreational red drum fishing. Summaries of the excellent presentations are featured in Sciaenops, Vol. 3, No. 1. Following the Red Drum Conference, discussions centered on future research needed to monitor the effects on the red drum stock brought about by State and Federal management measures.

For Your Information...

Enclosed with this issue of *Compact News* is a full-color brochure outlining the needs for enhanced data collection programs in the Southeast. Sound management decisions by both State and Federal fishery agencies depend on dockside collection of commercial fishery landings, creel survey activities for recreational catches and fishery-independent surveys such as SEAMAP. Increasing demands for data collections from the number of species under management to the precision and volume of data required has strained budgets for cooperative programs. Support data collection efforts which will provide information for full and wise use and enhancement of fishery resources in the Gulf of Mexico.

DINGELL-JOHNSON/WALLOP-BREAUX PROGRAM

Ronald R. Lukens

During the first quarter of the third year of our DJ/WB Program, we have seen growth in size and scope of the program's activities. A major initiative to address marine recreational fishing licensing was begun in March by the Recreational Fisheries Committee. During the GSMFC Annual Spring Meeting in New Orleans, the Committee sponsored a symposium on marine recreational fishing licensing which profiled current Gulf States' situations and outlined the involvement of the Washington Federal Aid Office of the U.S. Fish and Wildlife Service. This well attended symposium elicited some important information and discussions. A proceedings of that symposium will be available around July of 1989. Further efforts to address marine recreational fishing licensing will focus on interaction with individual states toward the development of legislation for licensing programs.

During February 1989, the TCC Data Management Subcommittee sponsored a workshop designed to analyze and evaluate current state and federal marine recreational fishery data collection programs in the Gulf of Mexico. A publication summarizing the results of that workshop will be available soon. That workshop was the first step in a multi-year effort by the Subcommittee to develop, in conjunction with the National Marine Fisheries Service, a marine fishery data collection program for the Gulf of Mexico which will provide the precision and accuracy to allow fishery managers to make decisions at the regional and state level.

Other major initiatives are in progress within the Recreational Fisheries Committee and the TCC Anadromous Fish Subcommittee. Summaries of those activities will be included in our next issue of *Compact News*.

SPECIAL PROJECTS: ADMINISTERED BY THE DJ/WB PROGRAM

Ronald R. Lukens

As mentioned in our first issue of *Compact News*, progress is being made toward the completion of a report on "Two Methods of Monitoring and Assessment of Artificial Reef Material." We anticipate that the report will be available by July 1989.

Preliminary data from a project to locate and identify thermal refuges for striped bass on the Apalachicola River indicate that the remote sensing technology (Thermal Infrared Multispectral Scanner, TIMS) which was used in this project can more than sufficiently detect thermal anomalies within water bodies. Application of this data for striped bass management can significantly impact stocking locations and abundance and other important mechanisms. A completed report on this project is expected by October 1989.

INTERJURISDICTIONAL FISHERIES PROGRAM

Steve Meyers

This quarter has been a very busy one for the Interjurisdictional Fisheries (IJF) Management Program. The Blue Crab Technical Task Force (TTF) is now about 90% complete in drafting the technical portion of the Blue Crab Fishery Management Plan (FMP). During the most recent meeting in Mobile, the Blue Crab TTF defined the procedures that will be used to describe the condition of the fishery.

The Oyster FMP development process is well underway. At the latest GSMFC meeting in New Orleans, the Oyster TTF reviewed several section drafts and discussed problems within the fishery. Those section drafts reviewed at the meeting are currently being revised and drafts of the remaining sections of the FMP are being developed. Completion of the Oyster FMP is scheduled for December 1989.

Also meeting in New Orleans was the Menhaden Advisory Committee, which reviewed the wide acceptance of the recently published Menhaden FMP 1988 revision.

The Fishery Management Committee (FMC) has met twice this quarter to discuss management scenarios and recommendations for the Spanish Mackerel FMP, which was developed under GSMFC's DJ Program. The FMC fully discussed harvest and allocation issues and developed recommended management measures acceptable to all the Gulf States. The Spanish mackerel management measures were then approved by the GSMFC.

The reauthorization of the Interjurisdictional Fisheries Act is currently being considered by Congress. Tesumony was prepared by GSMFC supporting this legislation which distributes grants to the states for research programs and to interstate fisheries commissions for regional management plan development and monitoring.

AWARD ANNOUNCED

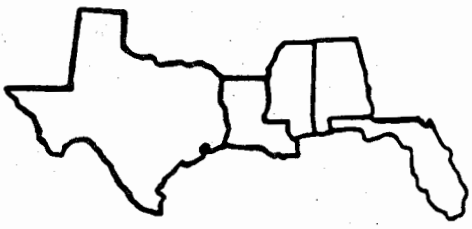
The GSMFC is pleased to report that Mr. I.B. "Buck" Byrd, NMFS-Southeast Regional Office, has been selected as the 1989 recipient of the "Charles H. Lyles Award." This award is presented annually by the GSMFC to an individual, agency or organization which has contributed to the betterment of the fisheries of the Gulf of Mexico through significant biological, industrial, legislative, enforcement or administrative activities. The award will be presented to Buck by GSMFC Chairman Charles E. Belaire at the Annual Fall Meeting to be held in Biloxi October 16-20, 1989.

Compact News is a quarterly newsletter of GSMFC to better inform the public on its operations and activities. For further information please contact our office (601) 875-5912.

Lucia B. Hourihan, Publication Specialist
Larry B. Simpson, Executive Director
Virginia K. Herring, Executive Assistant
Tom Van Devender, SEAMAP Coordinator
Ronald R. Lukens, DJ Program Coordinator
Steve Meyers, IJF Program Coordinator
Eileen M. Benton, Administrative Assistant
Nancy K. Marcellus, Staff Assistant
Cynthia B. Dickens, IJF Staff Assistant

GULF STATES MARINE FISHERIES COMMISSION
P.O. Box 726
Ocean Springs, MS 39564
601/875-5912

COMPACT NEWS



A Newsletter from the Gulf States Marine Fisheries Commission Staff

Volume 1, Number 3
July 1989

THE EXECUTIVE DIRECTOR'S REPORT

Larry B. Simpson

The Gulf States Marine Fisheries Commission (GSMFC) was created by Public Law 81-66 of the U.S. Congress and state enabling legislation in 1949. As a regional interstate compact the GSMFC has been involved in a wide variety of marine resources activities which affect the Gulf of Mexico.

In the early stages of the GSMFC, a major goal was to direct the exploratory fishing surveys of the NOAA Ship OREGON I operated out of the Pascagoula Laboratory of what is now the National Marine Fisheries Service (NMFS). Those surveys documented the tuna and billfish resources off the mouth of the Mississippi River in the early 1950s. One company tried to exploit those resources but supply and other factors prevented success of this operation. The plant which housed that operation is today completely modernized and expanded and is used to process menhaden.

Another of the original goals of the GSMFC was to seek Gulf-wide reciprocal agreements. Though it has never been fully achieved, it is still an important issue with recreational and commercial fishermen today. Some states have enabling legislation which will allow them to enter into reciprocal agreements, and some states, on a limited basis, have initiated reciprocal agreements. Examples of this are shrimping and recreational angling licenses which allow citizens of State A to purchase licenses at the same price for which State B can purchase them from State A. The states seek to obtain revenue from licenses and fees, an appropriate activity for the states to conduct. The revenues are used to fund their state marine resource agency activities for resource monitoring and assessment, research, personnel, and other important activities. Difficulties in achieving Gulf-wide reciprocal agreements are many. Living marine resources are not uniformly distributed geographically, and many feel that revenues derived from those resources should likewise not be distributed uniformly. Perhaps a single, prorated license fee similar to interstate trucking tags would offer a model around which to formulate reciprocal agreements. In any case, the issue is still important and is deserving of some attention.

FALL MEETING

GSMFC's 40th Annual Fall Meeting will be held at the Royal d'Iberville Hotel, 3420 West Beach Boulevard (US Hwy 90), Biloxi, Mississippi, Monday, October 16 through Friday, October 20, 1989. Please make your reservations no later than September 15, 1989 in order to receive the special rate of $45 single/double.

Charles E. Belaire of Fulton, Texas is the presiding Chairman of the GSMFC for this session. As always the GSMFC will address relevant issues affecting marine fisheries. A preliminary agenda of committee meetings is as follows: Monday, October 16 - SEAMAP Subcommittee (1-5 pm), GS-FFMB Menhaden Advisory Committee (1-5 pm); Tuesday, October 17 - TCC Data Management Subcommittee (9 am - 5 pm), Industry Advisory Committee (9 am - 5 pm); TCC Anadromous Fish Subcommittee (1-5 pm); Wednesday, October 18 - Fishery Management Committee (8:30 am - 12 noon), Recreational Fisheries Committee (9 am - 5 pm), Enforcement Committee (9 am - 5 pm), Technical Coordinating Committee (1-5 pm); Thursday, October 19 - Gulf State-Federal Fisheries Management Board (9-11 am), Executive Luncheon (11 am - 1 pm), Executive Session (1-5 pm); Friday, October 20 - Executive Session/Breakfast (8-11 am). Remember to send in your pre-registration forms and also response cards for a Talent Show (to be or not to be!).

SOUTHEAST AREA MONITORING AND ASSESSMENT PROGRAM (SEAMAP)

Tom Van Devender

The TCC SEAMAP Subcommittee held its annual meeting for purposes of planning activities and budgetary requirements for FY'90 in Savannah, Georgia. The July 26-28 meeting also brought together all three components of the Southeast Area Monitoring and Assessment Program — Gulf, South Atlantic and Caribbean — for joint discussions. Though the majority of activities carried out by each component are discreet to its region, certain aspects of SEAMAP such as data management, specimen archiving and program management are conducted jointly. Periodic reviews of joint activities insure that the common objective of providing fishery-independent resource information throughout the Southeast Region is met.

The 1989 SEAMAP Shrimp/Groundfish Survey across the northern Gulf of Mexico was completed on July 12. Sampling strategy, as in past years, was to work from the eastern Gulf to the Texas/Mexico border in order to sample during or prior to the migration of brown shrimp from bays to the open Gulf. A total of 311 trawl samples was taken from coastal and offshore waters out to 50 fm from Perdido Bay, Alabama to Brownsville, Texas. During the survey, the NOAA Ship OREGON II and Mississippi's R/V TOMMY MUNRO sampled offshore waters with 40-ft trawls. Alabama's R/V VERRILL sampled offshore Alabama waters with 16-ft trawls in inshore areas less than 5 fm and used 40-ft trawls in deeper waters. The R/V PELICAN sampled both Louisiana's territorial waters and offshore areas with 40-ft nets, and five Texas vessels sampled inshore to offshore waters adjacent to major bay systems with 20-ft nets. All vessels took environmental data including temperature, salinity, dissolved oxygen and chlorophyll at each station.

For a complete report of station locations, catches of penaeid shrimp, finfish and environmental conditions during the 1989 survey contact Tom Van Devender, SEAMAP Coordinator.

MARFIN RED DRUM PROJECT

Tom Van Devender

The SEAMAP Red Drum Work Group met in Mobile on April 17, 1989 to review information produced by the various state-federal-university participants in the "State/Federal Cooperative Program for Red Drum Research" and to aid in the development of the annual stock assessment mandated by the Gulf Council's Red Drum Fishery Management Plan. The program was developed by the work group in 1986 to provide data for the sound management of red drum resources in the Gulf. Under the umbrella program thirteen separate research projects, both single and multi-year, have been conducted to answer needs on red drum management in such areas as stock identification, stock assessment, age and growth, migration and economics of the recreational catch. Benefits from the nearly three years of red drum research include estimates of the escapement rate of juvenile fish from estuarine waters to offshore, the age structure and fecundity of the offshore spawning stock and a method to estimate size of this spawning stock from back-calculations on the number of red drum eggs and larvae taken in plankton samples.

After reviewing the progress made by researchers, the Red Drum Work Group urged continued monitoring of the offshore population's age structure and continuing efforts in tagging juveniles inshore as a method to measure escapement rates. Both areas of investigation will serve to monitor the success or failure of recently enacted management schemes concerning red drum.

DINGELL-JOHNSON/WALLOP-BREAUX PROGRAM

Ronald R. Lukens

During the course of the DJ/WB Program, both the GSMFC Recreational Fisheries Committee and TCC Anadromous Fish Subcommittee have been very active, working on several important initiatives. Among those is a project to profile Gulf of Mexico state and federal marine resource agency recreational fisheries programs and activities. It is felt that results this project will provide the basis for coordination of research, education, and management activities affecting recreational fisheries resources in the Gulf of Mexico.

Another project involves the National Recreational Fisheries Policy which was completed and widely adopted in 1988 during National Fishing Week. A questionnaire designed around the policy and including questions about state and federal resource management was sent to approximately 170 outdoor writers, fishing clubs and fishing tournament directors. It is hoped that the results of the project will provide the basis for a more involved and productive relationship between marine resource management agencies and the general public. We are currently awaiting return of the questionnaires.

The Recreational Fisheries Committee is also working on a profile of artificial reefs in the Gulf of Mexico. A questionnaire, adopted from an identical project by the Atlantic States Marine Fisheries Commission, was sent to state resource agency personnel for completion. Information such as location, water depth, type of material, size of reef site, and project administrative structure will be gathered and published in a single volume. A future product of this will be the development of individual, state-by-state artificial reef guidebooks.

An important project undertaken by the TCC Anadromous Fish Subcommittee is the development of a profile of state sampling programs to monitor striped bass eggs, larvae, and juveniles. Stocking of striped bass fingerlings has been going on since the 1960's. It is important to monitor the success of those efforts by sampling for the occurrence of eggs, larvae and juveniles to ascertain if natural reproduction is occurring and if stocked fingerlings are successfully surviving. A longterm result of this profile will be the development of a set of standard guidelines for monitoring striped bass.

Many of the projects being administered by the DJ/WB Program will be the subject of follow-up initiatives during a 1990-1992 program period if we are successful in qualifying for Wallop-Breaux administrative funds. The proposal will be the subject of our next DJ/WB newsletter segment.

NEW PUBLICATIONS

June 1989. "Proceedings: First Annual MARFIN Conference, September 19-20, 1988."

June 1989. "Executive Summary to the Annual Report, Marine Fisheries Initiative (MARFIN) Gulf of Mexico, 1 October 1987-30 September 1988."

Single copies are available upon request.

INTERJURISDICTIONAL FISHERIES PROGRAM

Steve Meyers

A completed draft of the Blue Crab Regional Fisheries Management Plan (FMP) has been received from the Blue Crab Technical Task Force. Once minor editorial and style changes are completed, the FMP will be sent back to the task force for their approval. The draft FMP will then be sent to the Technical Coordinating Committee and Fisheries Management Committee for review and approval. The Commission's other standing committees will review and comment on the FMP. Final approval of the FMP by the Commission is expected in October 1989.

Section drafts of the Oyster Fisheries Management Plan continue to be developed and reviewed by the Oyster Technical Task Force. Completion of the Oyster Fisheries Management Plan is scheduled for December 1989. John Cirino, chairman of the Oyster Technical Task Force, briefed the Gulf and South Atlantic States Shellfish Conference on the goals and timetable of the Oyster FMP.

During this quarter the IJF Program Coordinator attended the meeting of the Gulf of Mexico Fisheries Management Council in Tampa, Florida, and a meeting with the Florida Department of Natural Resources to review the five year research plans of the Florida Marine Research Institute.

The program coordinator attended a hearing of the Louisiana House Natural Resources Committee on the extension of the menhaden fishing season beyond that specified in the Commission's menhaden interjurisdictional FMP, and also prepared and presented testimony to the Louisiana Senate Natural Resources Committee on the same subject.

SPECIAL PROJECTS: ADMINISTERED BY THE DJ/WB PROGRAM

Ronald R. Lukens

As reported in our last issue of *Compact News*, the report "Two Methods of Monitoring and Assessment of Artificial Reefs" is now at the printers and will be available for distribution soon. Let us know if you would like a copy.

Our last issue also reported on a project entitled "Location and Identification of Thermal Refuges for Striped Bass in the Apalachicola River, Florida." That project collected remote sensing data on water temperatures using Thermal Infrared Multispectral Scanner (TIMS) mounted on a Lear jet. Field work to verify the remote data is being conducted this summer with the assistance of the U.S. Fish and Wildlife Service in Panama City, Florida. It is hoped that the field verification of the data will indicate a high degree of usefulness of this remote technique in locating important environmental conditions for survival of striped bass.

Compact News is a quarterly newsletter published by the Gulf States Marine Fisheries Commission (GSMFC). It is designed to better inform the public on GSMFC operations and activities. For further information on any article presented please contact our office (601) 875-5912.

GULF STATES MARINE FISHERIES COMMISSION
P.O. Box 726
Ocean Springs, MS 39564
601/875-5912

sciaenops

newsletter of the state-federal cooperative program for red drum research in the gulf

Volume 3, Number 1 April 6, 1989

COOPERATIVE RED DRUM RESEARCH PROGRAM

Participants in the State/Federal Cooperative Program for Red Drum Research presented status reports on their MARFIN-funded projects at the Gulf States Marine Fisheries Commission's Annual Spring Meeting held in New Orleans. Presentations at the March 13th Conference on Red Drum Research are summarized as follows:

STOCK ASSESSMENT

THE GULF COAST RESEARCH LABORATORY through use of an image analysis system is examining the question of multiple stocks of red drum in the Gulf. The system quickly makes measurements from a specimen's image in efforts to detail proportions throughout growth. Tissues from the same specimens are utilized in electrophoretic comparisons. To date using both sets of data, little differentiation has been found for red drum from seven regions around the Gulf.

- - - Stuart Poss

THE ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES is utilizing hatchery-raised red drum in studies to determine fishery exploitation rates, movements and juvenile escapement rates to offshore waters. Fingerlings stocked in brackish water ponds at the Claude Peteet Mariculture Center in Gulf Shores are held until a taggable minimum size of 35.0g (6-7 inches) is attained. Since September 1987 over 16,900 red drum have been tagged with internal anchor tags and released in four areas of coastal Alabama. Reported returns to date indicate little general movement of red drum from release sites, since most returns are caught soon after release. Biologists estimate a 45-50% reporting rate of tagged fish.

In addition to hatchery-raised red drum, over 100 wild stock fish ranging from 40.0-69.0 cm (16-27 inches) have been marked and released since September 1988. Reported returns indicate both hatchery-raised and wild stock red drum exhibit similar behavior in movement.

- - - Mark Van Hoose

THE GULF COAST RESEARCH LABORATORY reports that tagging operations carried out in Mississippi's estuaries have marked approximately 800 juvenile red drum. Over 170 returns have been reported. Returned fish generally were from the area of release, however in those fish recaptured more than 10 miles from the release site, movement was to the east. From tag return data little movement of red drum has been noted toward offshore waters.

Daily sampling in estuarine areas found peak recruitment of post-larval red drum (5.0-9.0 mm total length) generally occurs during a 30-40 day period from September through mid-October. Data from the fall of 1988 indicate a large increase in red drum post-larvae in Mississippi's estuaries, and an increase of juveniles appearing in seine samples.

- - - James Warren

THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES from October 1986 through January 1989 has tagged 5,805 juvenile red drum with internal anchor tags and released the fish in coastal marshes. At present, 475 returns have been reported. Implementation of size restrictions has shifted reported recreational returns from age I to age II red drum. Return rates of tagged red drum were unusually high in March, April and May 1988 with movement from marshes to offshore waters indicated.

- - - Joey Shepard

THE GULF COAST RESEARCH LABORATORY reported on a methodology to derive an estimate of the offshore red drum spawning biomass from back-calculations on the egg and larval abundance in plankton samples. Factors in biomass estimates include sex ratios, female adult population parameters such as batch fecundity and spawning frequency and area and season of spawning. Since red drum eggs incubate in less than one day, few eggs are found in plankton samples; however larval abundance coupled with growth and mortality rates can be used to calculate egg abundance. Mean density of eggs multipled by the stations sampled provided an estimate of daily egg abundance for the study area. Using 1.7 million eggs per batch figure, a spawning biomass of 15 million pounds was calculated for that portion of the red drum stock in the study area.

Though the back-calculation methodology appears to provide meaningful estimates of stock size, refinement of the variability in some parameters will lead to increased precision. Much of the variability inherent in plankton collections will be reduced by plans for multiple sampling of prime spawning areas during September, 1989.

- - - Joanne Lyczkowski-Shultz

gulf states marine fisheries commission
p. o. box 726 • ocean springs, ms 39564 • 601/875-5912

FLORIDA DEPARTMENT OF NATURAL RESOURCES' MARINE INSTITUTE since 1982 has conducted investigations on age specific rates of fishing mortality of estuarine red drum. From over 1,300 fish marked and released in Apalachicola Bay, a disappearance rate of 90-95% per year from nearshore waters has been calculated. Annual tag return rates of only 0-2% for red drum ages III and IV versus 17% for younger fish suggest that the fishing rate is not constant across all ages. Fishing mortality rates for ages I and II ranged from 25-65%, but dropped to 20% for age III fish. Assuming a constant natural mortality rate, emigration out of the estuary is estimated at 50% for age II red drum and nearly 90% for age III fish in the Apalachicola Bay area.

- - - Mike Murphy

AGE AND GROWTH

THE ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES is continuing in its program to collect biological data on red drum through its recreational creel survey. Efforts are underway to accurately determine growth rates of young red drum, particularly ages 1 through III. A regression technique of back-calculation of length-at-age data depends on a good predictive equation between body length and otolith radius. Since none of the otoliths thus far examined have come from fish less than 55 cm (21.6 inches), there is a need for otoliths from smaller-sized red drum. Emperical verification of early growth such as analyzing hatchery-raised fish of a known age will also be explored.

- - - Henry G. Lazauski

LOUISIANA STATE UNIVERSITY'S COASTAL FISHERIES INSTITUTE AGE AND GROWTH LABORATORY since 1986 has processed 2,000 red drum otoliths taken during NMFS's offshore sampling operations, and an additional 1,000 from inshore fish. Otoliths are examined to provide information on the age structure of red drum populations. Ages represented in the offshore samples now range up to 39-year-old fish. Data from 1986-1988 indicate that the overall age structure offshore has not changed, except for yearly progression and the reduced abundance of ages X, XI and XII (1975, 1976 and 1977 year classes) is still evident. Continued monitoring of the adult offshore population will be required to assess the impact of inshore regulation. A minimum of 16 purse seine sets with 50 red drum samples from each set is estimated as necessary to monitor the age structure of the offshore population.

Reproductive biological studies based on 1986-1988 ovarian collections indicate red drum spawning begins in mid-August and continues through early to mid-October. Some female red drum can mature as early as age II, with 50% of females spawning by age III-IV. During the spawning season, overall estimates of spawning frequency is every 5.2 days. Mean batch fecundity, the number of eggs released per female every 5 days, is estimated at 2.1 million eggs/batch with a range from 1.1 million to 3.2 million.

- - - Chuck Wilson

LOUISIANA STATE UNIVERSITY'S COASTAL FISHERIES INSTITUTE has run simulations utilizing size-at-age information to examine historical levels of recruitment of juvenile red drum to the offshore adult population. Current levels of recruitment and the time available for recovery of the offshore spawning stock under the Gulf Council's 30% juvenile escapement guideline have also been simulated. Based on projected number of age V red drum escaping to the offshore adult population for 1983, 1984, 1985, 1986 and 1987 year classes, three simulations of different management strategies on the 1987 and subsequent year classes were produced.

With no change in pre-1988 management strategies, recruitment by at least 1992 would fall below the 20% level of the simulated historical spawn, thus triggering a test of the Gulf Council's 30% escapement figure. With a gulfwide 30% escapement rate of juveniles, the effects of the 1987 year class "kick in" in 1992 to prevent falling below the simulated historical spawn. A total moratorium on red drum fishing (100% escapement) builds the level of spawn by the year 2000 to that of 1983.

- - - Richard Condrey

ECONOMICS

THE UNIVERSITY OF SOUTHERN MISSISSIPPI has completed an economic study of recreational red drum fishing activities. Specific goals of the investigation included a socio-economic profile of red drum anglers, estimation of catch rate elasticity of demand, net benefit values of a fishing site for red drum use and economic values of sport-caught red drum. Analysis of data from a 1981 socioeconomic survey and the 1986 Marine Recreational Fishing Statistics Survey led to a rejection of the hypothesis that catch has no influence on recreational fishermen's fishing for red drum. Catch elasticities, the percent change in fishing activity and spending given a proportionate change in catch, ranged from 0.2 to 0.6 (an increase in catches by 10% would increase fishing participation from 2-6%). A change in use value or the net benefits from an increased catch of red drum by one fish per trip were estimated to range from $12-$37.

- - - Trellis Green

Gulf States Marine Fisheries Commission
P O Box 726
Ocean Springs, MS 39564

sciaenops

newsletter of the state-federal cooperative program for red drum research in the gulf

Volume 3, Numbers 2-4 March 1990

COOPERATIVE RED DRUM RESEARCH PROGRAM

HISTORY: As total landings of red drum increased dramatically in the early 1980's -- from eight million pounds in 1979 to 17 million pounds by mid-1986 -- fishery managers realized that critical information was lacking to effectively manage this resource. Much of the increased exploitation was occurring on the large, offshore red drum schools for which the size and age composition was not known. Little information was available on the recruitment rate of sub-adult fish from nearshore waters to the offshore population. Also, it was uncertain whether one or several separate stocks of red drum existed in the Gulf.

Following the initiation of management planning efforts in 1986, managers realized the need for scientific information about red drum. Meeting in May 1986, leading university, state, and federal fishery management specialists undertook to define areas of information needs and devise research programs to answer these needs. A coordinated research plan specifying objectives, tasks, and sampling schemes was produced and funding for individual projects sought through the Marine Fisheries Initiative (MARFIN) Program.

Since October 1986 when the Cooperative Red Drum Program began, 13 separate projects, both single and multi-year, have been carried out to examine the red drum resource. Much-needed management data has been produced in areas of stock identification and assessment, migration, age and growth, and economics. New assessment techniques have been investigated including aerial surveys and back-calculations from egg and larval densities to estimate adult spawning biomass.

The Cooperative Red Drum Program in completing its original mission has provided a great deal of quality information regarding red drum. This data has been used by managers to develop conservation programs; by scientists to assess future research needs; and by individuals to increase their personal familiarity with the species. As the Cooperative Red Drum Program completes its original scope, a number of activities will be continued by the states using other sources of funds and by other individual participants. Important areas of red drum biology to be monitored include: escapement rate of juveniles from inshore waters; refining estimates of spawning stock size; and age structure of the offshore population. These ongoing efforts will be critical to evaluating the effect of management measures now in place.

The following is a summary of the final work efforts under the original cooperative research program.

STOCK ASSESSMENT

THE GULF COAST RESEARCH LABORATORY (GCRL) continued its mark-recapture efforts. Through December 1989, 1099 fish were tagged and 208 tags were returned for a 19% return rate. Size at age calculations have revealed that red drum reach 14" TL by the end of the first year and approximately 22" by the end of the second.

The December 1989 freeze appeared to have minimal effect on red drum in Mississippi. Although some mortality was observed, and unsubstantiated reports of over 3000 dead individuals were received; actual recorded mortalities were low.

GCRL is continuing stock assessment of red drum via a three year Wallop-Breaux program grant from the Mississippi Department of Wildlife, Fisheries and Parks, Bureau of Marine Resources. In the first year of this project, GCRL will continue to monitor sub-adults in inshore waters and attempt to target tagging efforts on 22" TL fish (2-3 1/2 years old). The project will also involve age validation of inshore sub-adults by reading otoliths as recommended by Dr. Phil Goodyear in the 1989 MARFIN Status Report.

- - - James Warren

THE GULF COAST RESEARCH LABORATORY also published the final report of its efforts to assess spawner biomass from larval abundance in 1986, 1987, and 1988. These estimates were much lower than those determined from mark-recapture data for the same period. The cause of this underestimation was probably variability of larval catch which was used to calculate egg production and spawner biomass.

Sampling in September 1989 was tripled in order to reduce variability. During this cruise 101 samples were taken in the north central Gulf with approximately 50% containing red drum. The cruise was a coordinated effort funded by SEAMAP and MARFIN.

Future sampling and analysis of red drum larvae is anticipated under new efforts of MARFIN and SEAMAP.

- - - Joanne Lyczkowski-Shultz

THE GULF COAST RESEARCH LABORATORY completed efforts to determine separate stocks based on morphological characteristics. Although the morpnosis imagining system and multivariate analysis were successful in identifying variations in individual fish, the data did not reveal significant differences in stocks.

- - - Stuart Poss

gulf states marine fisheries commission
p. o. box 726 • ocean springs, ms 39564 • 601/875-5912

THE ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (ADCNR) tagged 217 "wild caught" red drum from December 1988 through December 1989. A total of 38 returns were received for the same period. This 17.5% return rate compared well with the 19% rate in Mississippi (GCRL). Additionally, 20,708 hatchery-reared fish were tagged.

During the project period hatchery-reared fish were returned most frequently, 150-199 days after release, while wild fish returns were most numerous 0-49 days thereafter. Movement was similar for both groups, but the incidence of returns per releases was greater for wild fish.

In the future ADCNR will continue tagging wild and hatchery-reared red drum. Also, they plan to verify age information by otolith examination of hatchery-reared returns. Much of these future efforts will be supported by MARFIN.

- - - Vernon Minton

THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES (LDWF) completed its mark-recapture project in September 1989. From April-September 1989, 668 fish were tagged and 90 tags were returned. This 13.5% return rate is only slightly higher than the 9% recorded since the 1986 start of the project. LDWF will continue tagging red drum in association with ongoing monitoring and assessment projects in the future.

- - - Joey Shepard

TEXAS A&M UNIVERSITY has investigated stock substructuring and mixing of potential subunits using protein and mitochondrial DNA electrophoresis techniques. This data indicates that there may be weak subdivision between northern Gulf and Atlantic red drum. However, these groups appear to comprise single, randomly mating populations.

- - - John R. Gold, et. al.

FLORIDA DEPARTMENT OF NATURAL RESOURCES' MARINE RESEARCH INSTITUTE (FDNR) tagged 432 red drum in Apalachicola Bay from April-September 1989. By early 1990 approximately 108 returns have been recorded for a 25% return rate. Study data on the disappearance of fish from the estuary with age suggested that the decline in numbers is not due to fishing. Paradoxically, 85% of the returns were from the estuary within 1.0 km of the release site.

- - - Mike Murphy

AGE AND GROWTH

THE ALABAMA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES amended its project to forego a portion of the grant concerning otolith collection and analysis. This change was necessitated because of the inability to collect otoliths from the offshore populations and the low availability of otoliths from inshore samples. Instead a video was produced during the project to inform the general public of basic facts regarding red drum populations and the need for more stringent regulations of catch. This 15 minute, 52 second film was a joint effort of the ADCNR, AL-MS Sea Grant Program and the Alabama Cooperative Extension Service.

- - - Vernon Minton

LOUISIANA STATE UNIVERSITY'S COASTAL FISHERIES INSTITUTE (CFI) has processed 487 red drum for age, growth, and reproductive analysis since March 1989. Some fish were received from a purse seine fisherman targeting black drum. Under contract he provided CFI with well-developed, adult females on the verge of reproduction and a good representation of the spawning population.

In December 1989, 25 red drum were received from a "bandit" snapper fisherman. The fish ranging from 10-15 pounds, were caught in approximately 160 feet of water and were reported to be abundant.

For years fishermen have been reporting the presence of a population of small, reef-associated red drum separate from the schooling populations which have been most often studied. Sampling of this population will continue.

CFI has started a new three-year project to monitor age frequency distribution and reproductive activities of both red and black drum schools off the coastlines of Mississippi and Louisiana.

- - - Chuck Wilson

THE FLORIDA DEPARTMENT OF NATURAL RESOURCES' MARINE RESEARCH INSTITUTE completed age validation studies of adult red drum intramuscularly injected with oxytetracycline at 25 mg/kg of body weight. After freedom for approximately one year, eight returns of fish 9-28 years of age showed that opaque bands on the otoliths were annual.

- - - Mike Murphy

ECONOMICS

THE UNIVERSITY OF SOUTHERN MISSISSIPPI'S study on economic value of recreational red drum fishing indicates increases in catch rates per trip will have greatest income impact in the marine services and wholesale/retail trade sector, followed by service stations and eating/drinking establishments. Motel/motel and the lodging sector would be the least affected sector in terms of either income or employment rate.

Socioeconomic profiles indicate red drum anglers average slightly less than 40 years of age, fish closer to home than other angling groups and rank catching fish only behind sport as the primary motivation for fishing.

- - - Irellis Green

NEWS AND NOTES

THE MISSISSIPPI DEPARTMENT OF WILDLIFE, FISHERIES AND PARKS has recently considered for adoption of 22" minimum size limit for red drum. Also considered is a three fish/person/day bag limit with an allowance of only one fish larger than the 30" maximum size.

In February 1990 the Department in cooperation with Mississippi State University, the Gulf Coast Research Laboratory and Mississippi Power Company tagged and released approximately 1000 red drum averaging about 13" each into Back Bay of Biloxi. This effort follows a similar one conducted in December 1988 where nearly 750 fish were tagged and 50 returned to date.

TEXAS reported losses of 62,000 red drum from the December 1989 freeze.

LOUISIANA also reported large numbers of red drum killed in the December 1989 freeze. The effect on the population is unknown.

LAST ISSUE

This edition constitutes the last issue of Sciaenops. Important strides have been made in the knowledge base and management of red drum in the Gulf of Mexico since the inception of the state-federal cooperative program. Many research efforts will be continued, and new initiatives will be developed in the future to insure the health of this important marine resource.

APPENDIX D

BOARD MEETING MINUTES

DRAFT

MARFIN PROGRAM MANAGEMENT BOARD (PMB)
Monday, February 13, 1989/
Tuesday, February 14, 1989
MINUTES
Mobile, Alabama

The meeting held in the Admiral Semmes Hotel was called to order at 1:09 pm by Chairman Tom Murray. The following were in attendance:

Members
Larry B. Simpson, GSMFC, Ocean Springs, MS
Tom Murray, GASAFDFI, Tampa, FL
William S. "Corky" Perret, Gulf States, Baton Rouge, LA
Ralph Rayburn, Commercial Industry (designee), Austin, TX
Jim Jones, Sea Grant (designee), Ocean Springs, MS
Bob Shipp, Recreational Industry, Mobile, AL
Andy Kemmerer, NMFS, Pascagoula, MS
Wayne Swingle, GMFMC, Tampa, FL
Jean Martin-West, NOAA, Kansas City, MO

Staff
Don Ekberg, NMFS, St. Petersburg, FL
Virginia K. "Ginny" Herring, Ocean Springs, MS
Lucia Hourihan, GSMFC, Ocean Springs, MS
*Steve Meyers, GSMFC, Ocean Springs, MS

Others
*Brad Brown, NMFS, Miami, FL
Jack Greenfield, NMFS for Acting Regional Dir., St. Petersburg, FL
Nikki Bane, NMFS, Miami, FL
Brad Durling, Lillian, AL
Mike Tonsmeire, Bon Secour, AL

*In attendance on 2/13/89 only.

Adoption of Minutes

The minutes of the meeting held September 21, 1988 in Tampa, Florida and the minutes of the December 16, 1988 conference call were adopted as written.

Adoption of Agenda

D. Ekberg informed the PMB that terms for three members were up for 3-year renewal (Foundation, Council, Recreational) in February. The PMB accepted continuation of the current representatives contingent on forthcoming documentation stating their reappointment.

Other business dealing with reef fish was added to the end of the agenda.

The agenda was adopted as amended.

Status of FY88 MARFIN Projects

J. West reported that of the 28 awards to be funded, 2 were withdrawn (due to the closure of Louisiana's marine lab), 11 were awarded to date, 2 were not yet in the processing cycle (the Foundation and the University of Miami), and the remainder were in Legal or FARB. She expected to be able to report further on those during the course of the meeting.

West said that the PMB needs to communicate the importance of having the projects awarded before the end of the fiscal year, so that priority for MARFIN contractual work could be elevated. This would help to process the awards in a more timely fashion.

Regarding the pre-award audits, West stated the IG had responded that the four applicants in question (University of South Alabama, Sport Fishing Institute, Marine Chemurgics, Florida Keys Artificial Reef Association) would not require a pre-award accounting survey.

There was discussion regarding the need to develop a flow chart for the program showing milestones and time frames. The chart may help to avoid some of the delays experienced this year. Delays discussed include the Federal Register notice publication, program officers' technical review period, and the administrative backlog primarily above CASC. West stated that after leaving CASC, projects went to fisheries general counsel, then to NCASC, and finally to FARB.

* A motion was made to establish a tracking system for both the RFP and the proposals where there would be bimonthly reports sent to all members of the PMB and the Regional Director, and to establish a tracking system for the review process. The motion carried without objection.

FY 89 Federal Register Status

Ekberg said that the Federal Register notice was somewhere between NOAA and the Department of Commerce (DOC) and that he would do his best to better track the notice and report further during the meeting.

FACA Status

Ekberg reported that with the new administration, the new people had sent the request for a FACA charter back. Pedrick had rewritten the

request and sent it forward. Evans had signed the request and sent it on to the DOC. Randy Blumenschein, Management Support Division (DOC), had specific questions with the request from the government (submitted by Ekberg) for advisory and assistance to do this year's contract with the Gulf States Marine Fisheries Commission (GSMFC). Blumenschein thinks the request is too high because other advisory committees run for $15,000-$20,000. Ekberg has forwarded all material requested in justification and he is awaiting their response.

West said this year's contract for GSMFC which expires on March 23 can be extended to continue operations because the government has a need for service and the GSMFC is willing to provide it.

V. Herring stated that the GSMFC proposal for this year has not yet been submitted as it has not yet been requested by the government. She said the base amount would include a conference and would be approximately $77,000 without a PMB meeting in Washington, DC or approximately $82,000 with a Washington meeting as requested by the PMB.

The uncertain FACA status was discussed. A suggestion was made that in the budget process language (to clarify the PMB's function) be added to the line item for MARFIN funds to state that funds be allocated based on the advice of the PMB to the Regional Director. No action was taken at this time.

FY89 MARFIN Budget Review

Ekberg distributed and reviewed the FY89 budget allocation to date (attachment 1) showing an estimated balance available for new cooperative agreements of $1,594,100. A congressional decrease of $295,000 was questioned. The Regional Office will try to find further information on the decrease and report at a later date. The transfer to the Galveston Lab included the $64,000 returned from the withdrawn Louisiana projects. Ekberg stated that last year the Galveston Laboratory received $125,000 for TEDs, but only spent $50,000 and requested a $75,000 carryover. The carryover was not received and the Regional Director made the decision to transer the return money to Galveston. The PMB had had no prior knowledge of this transfer.

Ekberg reported the Federal Register notice was now in Mr. Don Malone's office in the DOC; from there it is sent to OMB where it gets a control number; it is then sent back to NMFS for Brennan's signature and on to the Federal Register for publication. Publication could occur in as little as three weeks.

NMFS Proposal Discussion

Proposals for discussion included three NMFS-SEFC proposals outlined at the September 21 PMB meeting for which full proposals had been submitted to the PMB for review in January; one proposal by the National Academy of Sciences (NAS); and one new NMFS-SERO proposal.

The proposal by the NAS entitled "Support of a Study on Sea Turtle Conservation" was distributed (attachment 2). This proposal was received by the SERO on February 9 and the Regional Director had been directed to fund this $210,000 proposal out of MARFIN. Individual comments heard indicated approval for funding not to exceed $210,000 but the PMB desires MARFIN identification on the project (noted in the final report as the funding source).

There was consensus for Ekberg to draft a detailed letter through the Regional Director to the Director of NMFS indicating the PMB's disapproval with the way this proposal was presented to the PMB. The letter will ask for justification for the use of regional funds on this project, will state that the PMB expects the DOC to monitor the funding and review of the project, and will state that the PMB does not want to see a precedent set which would allow the mandating of MARFIN funding.

There was discussion regarding the $315,000 slated for continuation of multi-year projects. Because of delays in starting the projects this year, the continuation of projects may not be begun until FY90. It was the consensus of the PMB that continuing projects be funded with FY89 funds if satisfactory progress can be determined.

West reported that 9 awards had cleared FARB on this date. Those awards went to the University of South Alabama, the Louisiana Department of Wildlife and Fisheries, Louisiana State University (4 projects), the University of South Florida, the Florida Keys Artificial Reef Association, and Marine Chemurgics. Six more projects remain to be awarded.

J. Greenfield discussed the proposal from the SERO entitled "Proposal for Expanded Cooperative Tagging and Angler Ethics Program" and stated the strong support of the Regional Director for the cooperative effort. There were questions on the budget and the cooperative applicant. A clarified proposal and budget will be submitted to the PMB within two weeks for review and individual comment.

The first day's session adjourned at 5:10 pm.

Tuesday, February 14, 1989

Chairman Murray reconvened the MARFIN PMB meeting at 8:15 am.

NMFS Proposal Discussion

Kemmerer summarized the three NMFS-SEFC Mississippi Laboratories' proposals which had been previously distributed for PMB review. He noted that the proposals had not been reviewed externally.

"TED Technology Transfer" requesting $55,000 to support the adoption of TEDS in the southeastern United States by the shrimp fishery through workshops, training and problem solving activities on commercial shrimp vessels received favorable comments from individual members for full funding.

The proposal entitled "Small Turtle TED Evaluation" requested $40,000 to conduct tests on proposed new TED designs to evaluate their efficiency in reducing the capture of small turtles, to document performance of TED designs using underwater video and to provide video documentation to TED manufacturers and researchers to assist in modification and improvement of TEDs. Kemmerer said the work was primarily requested by the environmental community. He pointed out a budget problem in the proposal as they had planned to use the NOAA Vessel CHAPMAN and it now appears the vessel will have to be sent to the Northeast for 60 days this summer. A commercial vessel would have to be chartered for 10 sea days resulting in an increase of at least $15,000.

Individual comments of five members indicated that MARFIN funding would be better spent for some other purpose at this time. Two members

(Sea Grant and Recreational representatives) stated that the information was critical and the project should be funded immediately.

The third proposal entitled "Shrimp Trawl Bycatch Reduction" requested $200,000 in MARFIN funds. The project to develop effective and efficient trawling gear to selectively harvest shrimp by reducing the bycatch of finfish, to demonstrate the effectiveness of selective gear in reducing the bycatch of important commercial and recreational finfish species generated much discussion. NMFS rated the project as one of extremely high priority. Comments of five members of the PMB indicated that although the work was important, the timing of the project was a little premature; that results of projects funded by MARFIN and S/K last year to look at bycatch should be examined as well as an evaluation of what TEDS do to reduce bycatch this year; and that MARFIN should not fund the work in total but should share in the funding. Written comments (attachment 3) submitted by John Ray Nelson (GSMFC designee) were discussed. Two members (GMFMC and the Recreational representatives) expressed strong support for full funding of the project with this year's funds.

The PMB asked that they be informed of the Regional Director's decisions on the NMFS projects.

FY88 Annual Report

Ekberg distributed copies of the draft Annual Report. Members will review the draft and send comments to Ekberg by March 1.

FY88 Conference Report

Ekberg distributed copies of the revised draft of the Conference Proceedings. He noted that a Preamble had been added as requested. Further comments are to be mailed to Ekberg by March 1. It was the desire of the PMB that this publication, when complete, be photocopied rather than printed and have a limited distribution.

FY88 Executive Summary

The draft Executive Summary to the Annual Report was distributed for review and comment. It was the desire of the PMB that this

publication be the showcase to highlight MARFIN activities. This publication will be typeset and printed for broad distribution. Comments are to be received by Ekberg no later than March 1.

MARFIN Operating Procedures

Ekberg said that he had added a section on NMFS facilities to the draft Operations Plan. He distributed and reviewed a new section entitled "Current MARFIN Procedures" (attachment 4) showing current and proposed administrative operating procedures which follow the PMB review of proposals. The change in procedures requested by the Regional Director places the program manger (Ekberg) as program officer for all cooperative agreements. He will work directly with the technical monitors.

West remarked that CASC sees this change in procedure as layering but they will follow the desire of the Regional Director.

New Business

Kemmerer stated that SEAMAP has formed an adult finfish work group which will try to put together a cooperative effort on reef fish similar to the cooperative red drum effort. A motion was made that the PMB endorse the concept of a cooperative reef fish effort but failed for lack of a second. Several members spoke in favor of endorsing the concept of a cooperative reef fish effort.

Ekberg will write a letter of thanks on behalf of the PMB to the Mobile Chapter of CCA for sponsoring a fine reception.

Pending Federal Register notice publication and subsequent proposal review, the next PMB meeting was tentatively scheduled to be held in Tampa at the end of June.

There being no further business the meeting adjourned at 12:40 pm.

REVISED 01/30/89

NATIONAL MARINE FISHERIES SERVICE

SOUTHEAST REGION

FY89 MARFIN BUDGET ALLOCATION

Initial Allocation: (G-R-H cut of 6.3% has not been returned)		$ 3279.1K
Congressional decrease:		- 295.0K
		$ 2984.1K
Commitments:		
Transfer to Regional Office:	- 75.0K	
Transfer to Miami Laboratory:	- 55.0K	
Transfer to Panama City Lab:	- 205.0K	
Transfer to Mississippi Lab:	- 540.0K	
Transfer to Galveston Lab:	- 140.0K	
		- 1015.0K
Balance		$ 1969.1K
Estimated cost of contract with GSMFC		60.0K
Available for cooperative agreements		$ 1909.1K
2nd year project funding		315.0K
Revised available funds for c/a		$ 1594.1K

Attachment 2

RECEIVED 4/01 via AIRBORNE EXPRESS (CYNTHIA WALKER) 210K

NATIONAL ACADEMY OF SCIENCES
NATIONAL RESEARCH COUNCIL
COMMISSION ON LIFE SCIENCES

BOARD ON ENVIRONMENTAL STUDIES AND TOXICOLOGY

BOARD ON BIOLOGY

Proposal No. 89-140

for support of a study on

Sea Turtle Conservation

This proposal is submitted by the National Academy of Sciences, which assumes full technical and financial responsibility under its Act of Incorporation for the work to be carried out under any contract resulting from this proposal.

Contract Administration

Gary E. Dvoskin, Director
Office of Contracts and Grants
National Academy of Sciences
Telephone: 202/334-2888

Program Administration

John E. Burris
Executive Director
Commission on Life Sciences
Telephone: 202/334-2500

December 1988

NATIONAL ACADEMY OF SCIENCES
NATIONAL RESEARCH COUNCIL
COMMISSION ON LIFE SCIENCES

BOARD ON ENVIRONMENTAL STUDIES AND TOXICOLOGY

BOARD ON BIOLOGY

Sea Turtle Conservation

SUMMARY: The Board on Environmental Studies and Toxicology (BEST) and the Board on Biology (BB), propose to convene an expert committee to perform a study mandated by the Endangered Species Act Amendments of 1988: a review of scientific and technical information pertaining to the conservation of sea turtles and the causes and significance of turtle mortality, including that caused by commercial trawling. The committee would review information on the population biology, ecology, and behavior of five species of endangered sea turtles: the Kemp's ridley, loggerhead, leatherback, hawksbill, and green sea turtles. The committee would also review information on present or needed programs to increase turtle populations. The resulting report will be used by the Secretary of Commerce to assess the effectiveness of and need for regulations requiring the use of turtle-excluder devices by commercial shrimp-trawlers. The study will cost an estimated $210,000 and take 12 months to complete.

BACKGROUND: Sea turtle populations have been declining for many years, not only worldwide but especially in the Gulf of Mexico and along the southeastern U. S. coast (Bjorndal 1981). Chiefly because of the declines, all five species occurring in these waters have been listed under the Endangered Species Act (1973, 1978). The five species are the green sea turtle (Chelonia mydas), loggerhead (Caretta caretta), Kemp's ridley (Lepidochelys kempi), leatherback (Dermochelys coriacea), and hawksbill (Eretmochelys imbricata); they are all considered to be in danger of extinction in all or significant portions of their ranges. Provisions of the Endangered Species Act include protection of known habitats, recovery plans for each species, and status reviews of each species population every five years for possible reclassification. The Department of Commerce, through the National Marine Fisheries Service (NMFS), and the Department of the Interior, through the Fish and Wildlife Service (FWS), have the primary federal responsibility for these endangered species.

Each of the endangered sea turtle species has different ecological requirements, different distributions, and probably different survival and longevity characteristics. For example, the green sea turtle grazes on grasses and algae, the leatherback eats jellyfish, the hawksbill feeds largely on sponges, and the loggerhead eats molluscs and crustaceans. Because of these and other ecological differences, each species has a different recovery plan. In general, FWS recovery plans are compatible with all federal and state laws, as well as international agreements (such as plans for Kemp's ridley nesting along Gulf coast beaches of Mexico). The immediate objective of a recovery plan is to prevent extinction--stop population declines--and, where possible, to increase population sizes.

Special problems arise in preparing recovery plans for sea turtles because they are migratory. Thus, at different times of the year a species population traverses different political jurisdictions. Furthermore, sea turtles are frequently in offshore waters, where only international agreements could protect them.

A green sea turtle fishery once thrived along the Gulf of Mexico coast of the United States, providing meat for human consumption and turtle oil as a lubricant and ingredient in cosmetics. For example, in Texas the catch of green sea turtles peaked at 265,000 kg/yr in the 1890s, but was virtually zero by 1963 (Bjorndal 1981). Such mass slaughter over many years undoubtedly was chiefly responsible for overall nesting and population declines of this species. More recently, other factors appear to have contributed to the declines of sea turtle populations in the Gulf of Mexico. These include human and animal plundering of nests for eggs, coastal and ecological degradation of turtle habitat, chemical contaminants in marine ecosystems, continued turtle harvesting (particularly in international waters), oil and gas activities, and trawling.

Several aerial surveys over parts of the Gulf of Mexico and the southeast Atlantic coast provided some information on turtle population sizes in 1979-1981 (Fritts et al., 1983). Those surveys have not been repeated at regular intervals, so their fragmented and sparse data are not particularly useful to identify specific distributional limits, population trends, or ecological characteristics of sea turtles. Additionally, the lack of basic life-history data for most species hampers the understanding, management, and conservation of sea turtles in the Gulf and south Atlantic regions. The United States continues to work with many other countries toward the protection and conservation of sea turtle populations.

Concern over mortality of turtles in the trawl nets of shrimpers, and proposed regulations to reduce it, motivated Congress to request the proposed study. It has long been known that commercial fish and shrimp trawlers sometimes catch sea turtles in their nets. Accurate estimates of sea turtle deaths in trawls are difficult to obtain, but recent estimates suggest that more than 11,000 sea turtles die in commercial shrimp trawls each year (National Marine Fisheries Service, 1987; Henwood and Stuntz, 1987). To reduce this mortality, NMFS began a gear research program in 1978 to identify shrimp trawling gear that would exclude sea turtles while retaining shrimp-catching efficiency.

As a result of its research, NMFS drafted a Recovery Plan for Marine Turtles (Hopkins and Richardson, 1984), including regulations that would require all shrimp trawlers to implement conservation measures to protect sea turtles. Large trawlers would use turtle-excluder devices (TEDs), smaller trawlers would restrict tow times to 90 minutes or less, and various season and area restrictions would take effect. Field tests in different areas indicated that the best TEDs reduced the incidental catch of turtles by up to 97%, with little or no loss in the shrimp catch.

An immediate conflict arose between the proposed TED requirements and the Gulf shrimping industry. In Alabama alone, this industry generates $30 to

$100 million annually. Shrimpers were not convinced that the "incidental" turtle killed in a shrimp trawl could be responsible for overall declines in sea turtle populations. Representatives of the shrimping industry in the Gulf asserted that the imposition of TEDs on trawlers would reduce shrimp catch and devastate the industry.

As a result of the concerns over this issue, the Endangered Species Act Amendments of 1988 contained an amendment (see appendix) requiring, among other items, a National Research Council review of the biology and behavior of the five species of sea turtles; the study is intended to assist the Secretary of Commerce in assessing the need for regulations. The amendment also delays the implementation of the TED regulations (promulgated on June 29, 1987) until May 1, 1989, for inshore areas and until May 1, 1990, for offshore areas; by April 1 the Secretary of Commerce is expected to report to Congress on the need for the regulations, based on the NRC study. The amendment specifies that if the report cannot be completed by April 1, 1989, the "panel shall give priority to completing the independent review as it applies to the Kemp's ridley sea turtle. . ."

PROPOSED PLAN OF ACTION: The Board on Environmental Studies and Toxicology and the Board on Biology propose to convene a committee with expertise in the biology of sea turtles, population biology, ecology, fishery biology and management, and conservation biology to review the technical and scientific information concerning the following issues:

1. Estimates of the size, status, and structure of populations of the five species of sea turtles.

2. The distribution of the turtles in U.S. waters.

3. The worldwide distribution of critical life stages of the five species, i.e., during periods of reproduction, migration, and development.

4. The causes of mortality of the turtles and their magnitude and significance.

5. Estimates of the magnitude and significance of present and needed head-start and other programs to increase turtle populations.

6. Description of conservation measures taken by Mexico and other countries and an assessment of their effectiveness.

7. The identification of nesting and reproductive sites and current and needed measures to protect them.

A progress report will be submitted to the sponsor by April 1, 1989.

ANTICIPATED RESULTS: A report would be prepared reviewing the available scientific and technical information concerning the biology, population dynamics, behavior, and distribution of Kemp's ridley, loggerhead, hawksbill, leatherback, and green sea turtles. The report would describe

and assess the sources of mortality incurred by these species and the effectiveness of current and required conservation measures.

Reports resulting from this effort shall be prepared in sufficient quantity to ensure their distribution to the sponsor, to the Committee Members, and to other relevant parties in accordance with Academy policy. Reports may be made available to the public without restrictions.

ESTIMATE OF COSTS: The estimated cost of the study for a 12-month period is $210,000.

REFERENCES:

Bjorndal, K. A. (ed.). 1981. Biology and Conservation of Sea Turtles. Smithsonian Institution Press, Washington, DC.

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NATIONAL ACADEMY OF SCIENCES
NATIONAL RESEARCH COUNCIL
COMMISSION ON LIFE SCIENCES

BOARD ON ENVIRONMENTAL STUDIES AND TOXICOLOGY

BOARD ON BIOLOGY

Proposal No. 89-140

Sea Turtle Conservation

Estimate of Costs

2/1/89 through 1/31/90 (12 months)

1.	Salaries & Wages*			
	Professional:			
	Acting Director, BEST 5% at $73,700	$ 3,685		
	Program Director 10% at $49,800	4,980		
	Sr. Staff Officer 60% at $55,000	33,000		
	Research Asst. 40% at $24,500	9,800		
	Editor 15% at $52,000	7,800	$59,265	
	Salary Adjustment		988	
	Secretarial - Clerical			
	Proj. Secretary 60% at $20,000		12,000	
	Salary Adjustment		450	$ 72,703
2.	Fringe Benefits 22% of Item 1			15,995
3.	Overhead (see note)**			
	66.5% of Items 1 and 2			58,984
4.	Travel Expenses			
	Committee (12 members)			
	4 3-day trips @ $530 ea.		25,440	
	Staff			
	4 3-day trips @ $530 ea.		2,120	27,560

5. Other Direct Costs

Reproduction & Duplication		
Report (250 copies at $10 ea.)	$2,500	
Copying (114,000 copies @$.025/page)	2,850	
Telephone & Telegraph	1,400	
Postage	2,400	
Supplies	1,400	
Meeting Expense	500	
Books & Periodicals	1,400	
Computer Maintenance ($20/mo.)	240	
Computer Support	1,260	$ 13,950

6. General & Administrative Costs

11.0% of all above items	20,808
TOTAL	$210,000***

NOTE: The NRC annually utilizes the services of over 9,000 volunteer scientists, engineers, and other professionals in its committee system. Largely drawn from universities and industry, the NRC committees represent over $18,000,000 in services provided at no cost to sponsors during the performance of studies. Placing the value of these donated services in the overhead base would result in an effective overhead rate of less than half of the current negotiated rate.

The use of all rates in this proposal has been reviewed and agreed to by ONR for use in Academy proposals to assist sponsors in cost estimating, pending approval of final fixed rates.

*Includes accrual for annual and sick leave, holidays, and other leave such as for jury duty, military service, and special personal leave, currently estimated at 18% of direct salaries and wages.

**Includes a facilities capital cost of money factor of approximately 4.02% of overhead and 0.1% of G&A.

***It is understood that the contract will provide for advance payments.

MAFMC BOARD MEETING

February 13 & 14, 1989

Admiral Semmes Hotel

Mobile, Alabama

My name is John Ray Nelson. I am President of Bon Secour Fisheries, Inc. of Bon Secour, Alabama. I would like to address our meeting in an effort to point out some of the things needed by the commercial shrimping industry in the Gulf of Mexico.

Each of the proposals here are needed very much. Please let me make a few comments on each one beginning with the TED Technology Transfer.

First of all, I am sure the applicant, Dr. Kemmerer, is very well qualified to handle this proposal. I know of no one who has done more while working in NMFS to help our shrimping industry than Dr. Kemmerer. Identification of the problem here is reasonable as we do inadvertently capture and kill some turtles in our shrimp trawls in some areas of the South Atlantic and Gulf of Mexico in numbers that should be lessened. I sincerely hope that as pointed out, on May 1, 1989, the requirement that approximately 7,000 shrimpers will be required to use TEDs does not come about. I want to see further studies made as to where turtles are concentrated. I also want to see the National Academy of Sciences complete it's studies before this device if forced upon a suffering industry. I believe that it is the intent of Congress to see this study first, and to look at our problem again in order to prove that some other method must be used to prevent killing sea turtles in certain areas, at certain times of the year. However, I hope this study will

further show that we, the shrimpers, are not the real culprit here. Again I say something must be done by the shrimper to help prevent drowning turtles. The number of turtles we kill is far exaggerated by NMFS. The effectiveness of this turtle excluder device is further far exaggerated by NMFS. I sincerely hope that information pertaining to improvment of the turtle excluder device can be made available to all fishermen as soon as possible.

I have read through the Project that Dr. Kemmerer has proposed, and from the standpoint of someone who actually owns and operates shrimp boats, I would like to point out that some of those studies may be of little use. Please remember that when the water is clear, we cannot catch enough shrimp to make it economically feasible to drag. Therefore, I do not know the real value of testing in very clear water using video equipment to prove anything relevant to this issue.

On Page 2 of the TED Techonology Transfer, Paragraph 2, I point out that it certainly was a disservice to the industry to discontinue the Seperater Trawl Development Project. It was my understanding that good progress was being made with webbing panels and other techniques to separate fish from shrimp, and I saw no need to drop that and jump on the turtle problem.

The turtle excluder device developed, in our experience, does not get rid of any significant amount of trash fish. Our studies today show (and these studies which have been made over the past few months are updated studies, not old studies) that we lose about the same percentage of trash fish as we do shrimp. In some cases this loss is from 10% to 20%. As you well know, this is the reason why legal efforts to prevent using TEDs resulted in a delay, and we

sincerely hope that this delay will go beyond May of this year. I wholeheartedly hope that the commercial shrimping industry will support this TED Technology Transfer.

Next, I would like to ask you review with me The Small Turtle TED Evaluation Project. The applicant is Dr. Kemmerer whom I believe is also well qualified in this area.

On Page 1 of the Project Description, the last sentence in the bottom paragraph tells us exactly what is going on. The test determined (the test we are referring to is testing of the turtle excluder devices) that small turtles did have difficulty escaping through several of the TED designs. Further proof in this Project Description shows significant work is needed to improve these devices. On Page 6 under K, "Project Costs", it is pointed out that this project is planned as a two year project because of the expected continuing development of new TEDs through the TED phase-in period, etc. [illegible] you can easily see the necessity of much more work being done on these devices.

Next, I would like to review with you the Project entitled " Shrimp Trawl By-Catch Reduction" which is also by Dr. Kemmerer. Again, I would like to point out Dr. Kemmerer is very well qualified to supervise this project also. In his work summary he states that he will conduct studies to investigate the behavior of fin fish and shrimp in shrimp trawls using video cameras, etc. I would point out that it has been my experience that we cannot economically drag for shrimp in clear or slightly murky water. We need muddy, or very cloudy water conditions, to catch shrimp. I do not wish to criticize his efforts. I only hope that this will prove more useful than the several studies I have read in the past where video cameras have been used to show and teach they way trawls and trawl doors work. Much of what I

refer to was a study that was conducted in the very clear water around Bimini, off the Florida coast, where the water is as clear as gin. This film was somewhat helpful in that it showed people how shrimp trawls work, but my fishermen found it was of very little value to them. Again, I apologize for my criticism, but I am only here to help point out what I need in my industry.

This Shrimp Trawl By-Catch, or as I prefer to call it, The Trash Fish Problem, has been blown all out of proportion over the past years. The term "by-catch" does not suit the shrimping industry as applied to all that is contained in the bag end of our nets. This term was originally intended to refer to non-targeted species. We see these figures used to try and show loss of something that <u>might</u> be recruited into the fishery. As I see it, it is simply another effort by NMFS to gain grant money to work in this industry, and I have no objection to that. However, I do honestly and sincerely object to the first sentence on Page 1 which states, "Shrimp fisheries throughout the world are being increasingly scrutinized for their impact on non-target species incidentally captured and destroyed (and I emphasize the use of the word "destroyed") during shrimp harvesting". I would prefer that the finger not be pointed at our industry in this manner. Perhaps your thoughts could be phrased in another way, i.e., "this is our most valuable fishery and it needs help in developing better gear", or you might also note that over the years we have gone from one trawl to two trawls and now to four trawls towed behind our boats in an effort to help improve our gear. There is an old saying that we boat owners just give the fish to the crew and this is absolutely untrue. I do remember the time 10 or 15 years ago when what fish we did save was of little value and we did use that to pay the third or fourth man on the boat. This man was commonly called "the fish boy". I

think you will find now that there is a great move to save everything that we can to help pay our expenses. Pointing out that we are not equipped to save the fin fish or anything else we catch along with the shrimp is absolutely not true. I sincerely hope some adjustment can be made in these statements. For proof of what I am proposing, I invite you to come to my dock at any time and watch a boat being unloaded. You will see the valuable flounder that we save, and the very valuable bullnose lobster that we save.

I wish to get back to the trash fish problem as it is being pointed out. We have been dragging for shrimp in a small area of the Gulf of Mexico in which we drag with the same intensity as before, and we are finding little change in the trash fish makeup now. NMFS' reports seem to give a different picture. However, my belief is that NMFS' studies have never been carried out on a 12-month basis or over any period of time sufficient to prove their allegations. I would like to refer to Page 2 of the "Shrimp Trawl By-Catch Reduction Project" and to Dr. Gordon Gunther's (Director of the Gulf Coast Research Lab) report that in 1956 in spite of large increases in the shrimping effort during the past 25 years (and I repeat 25 years), the population of fin fish still has not been affected. I greatly respect the people who came behind Gordon and conducted further studies. I find it unusual that they found what they did. This business of pointing a finger at us for having to throw away the trash fish which is of no value is, in my estimation, not conservation. It is simply an attempt to damage the industry of shrimp trawling in the eyes if the public. There is little economic value of the trash fish, and there has been little change in the make up of trash fish over the last 30 years. Some of NMFS' records and research prove differently. However, again I invite you to my dock to take a trip and see.

In the last Paragraph on Page 2, please read what is said about the croaker industry. This is not all fact and is in my opinion, very slanted. I remember well what we did. We simply flooded the market, ran the price down, and as a result, most boats quit. Shrimping got better so we forgot about the croaker. I believe it is impossible for shrimpnets to be held responsible for an 85% decrease in croaker population. The problem is in our rivers and shallow areas where the little ones grow. I point out the last sentence in the 3rd Paragraph of Page 3 where it says, "Again, other factors may be involved in the decline of the bottom fish resource, but this discard level easily makes the shrimping industry the largest harvester of bottom fish". Another black picture painted of shrimpers. The statement in the last Paragraph is one that I simply disagree with. The period from 1972 to 1987 was not a good time for our industry. Fuel prices skyrocketed in 1974 and 1975, a fact which limited our dragging. The industry did not take an upturn until diesel fuel prices dropped drastically, and after that, we were doing pretty well until NMFS saddled us with the TEDs.

Again, I point out the statement that the shortage of croaker and the problem of producing surimi from croaker failed because of the fish shortage. This is not so. There was a little research done in Bayou La Batre and several other places relative to using croaker to produce surimi. I tried to sell the product in areas where I had been selling Japanese-produced surimi, and I found it could not compete. It was not the price that made it noncompetitive....it was simply the flavor and texture of the product.

On Page 4, the Paragraph at the top states that we catch spanish mackerel, king mackeral, red snapper, and red

drum. I have read these author's reports, and they are simply good editorials. I find no commercial fisherman believes them. To simply suggest that reduction in the by-catch of red snapper could increase the yield as much as 20% is absurd since no consideration of the habitat was discussed. Truthfully, we have never produced a vast amount of red snapper on this side of the Gulf, and we do not catch a significant amount of red snapper of any size in our shrimpnets. My red snapper production dropped to practically nothing when we were no longer allowed to go across the Gulf to Mexican waters to catch red snapper, grouper, etc. For verification of this statement, I suggest that you simply obtain the records from my business, or from Clark Seafood in Pascagoula, Starfish Oyster Company in Mobile, E. E. Saunders Company in Pensacola, Warren Fish Company is Pensacola, or several other companies in this area, and you will find exactly where the American red snapper came from. We produced tons and tons from the Mexican waters and very few from this side of the Gulf. The 200 Mile Conservation Zone put us out of that business. Not only did the 200 Mile Conservation Zone affect our red snapper and grouper fishing, it also drove hundreds of boats out of the Mexican waters back to this side of the Gulf, a fact which certainly was no help to the industry.

I wish to support all three MARFIN Proposals since I believe they are needed. I will not support all of the statements as written giving background and information as to why this money should be spent. There is too much implied in these statements that my shrimping industry disagrees with and which we feel are harmful to our industry.

Again, I wish to apologize for all of my criticism. However, I find it is necessary to point out that regardless

of the good that Dr. Kemmerer will do in his work, I fail to see the necessity to hurt (and I mean drastically hurt) my business in the eyes of the public.

I submit my statements for this review. If you have any questions, I will be happy to answer them. If you have questions later on, please call me at my office (205) 949-7411.

Respectfully submitted,

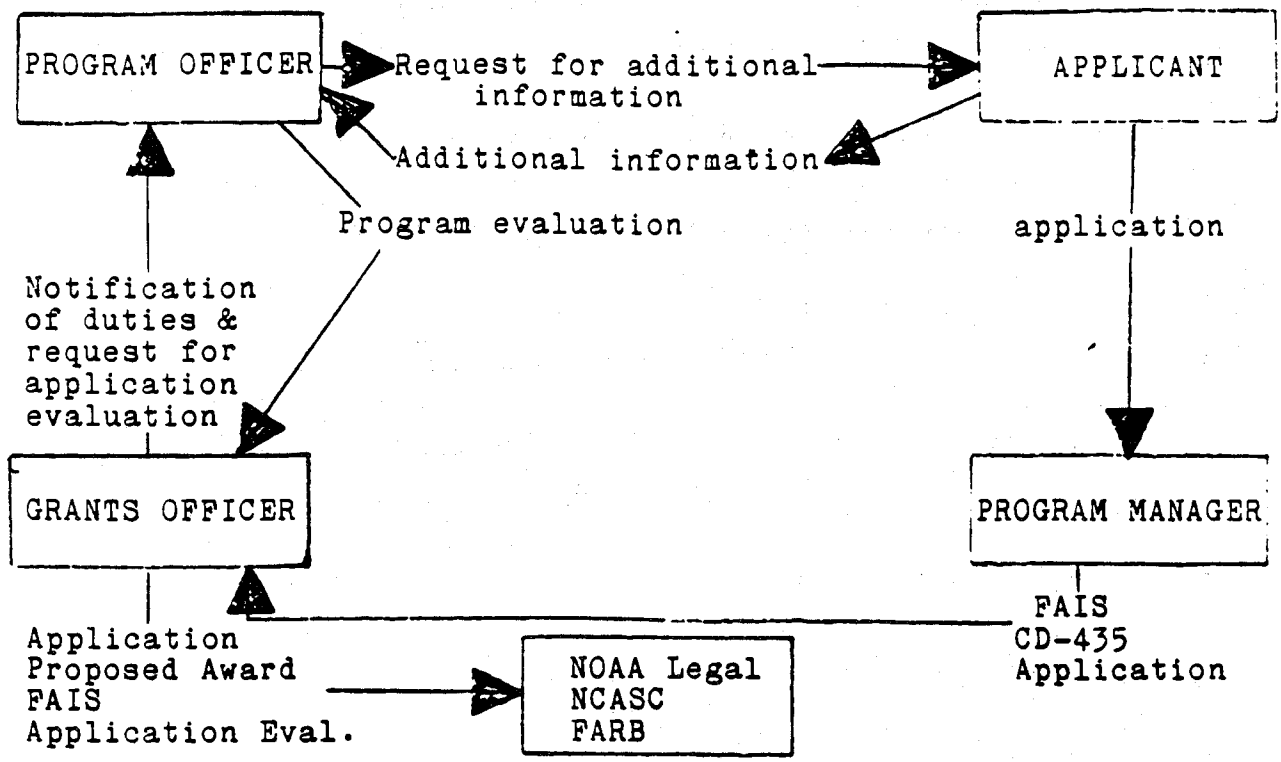
John Ray Nelson

2/13/89

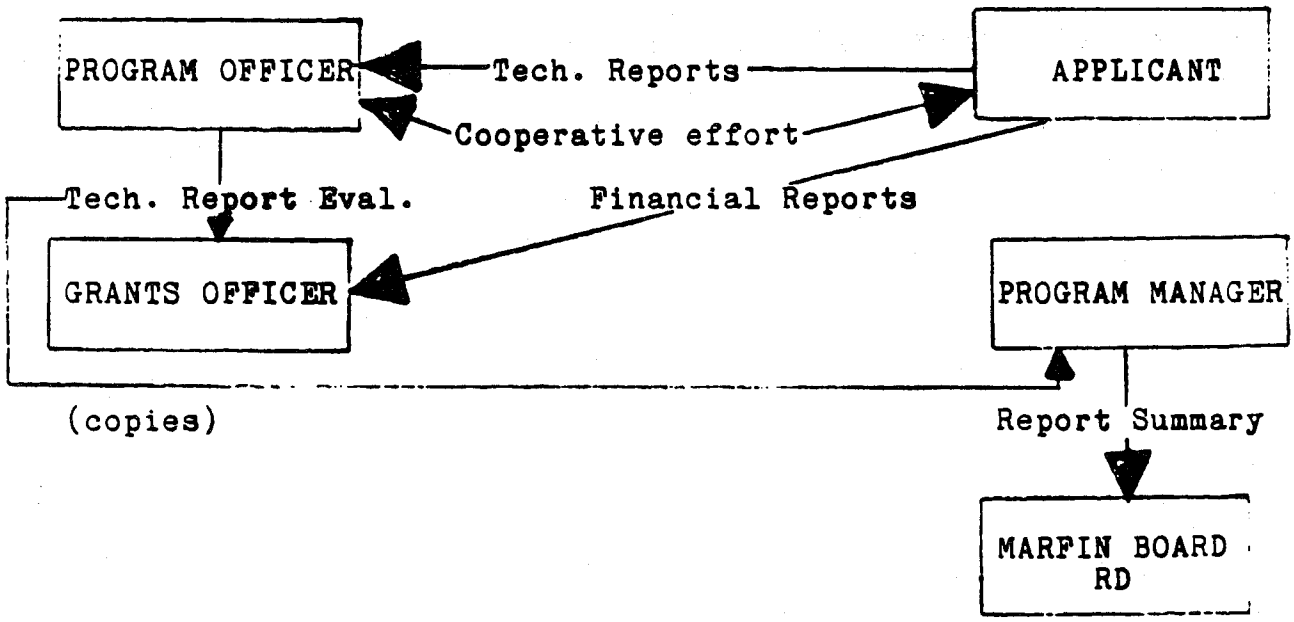
Current MARFIN Procedures

	PROGRAM MANAGER	PROGRAM OFFICER
o Develop Federal Register notice. Distribute Federal Register notice.	X	
o Log in applications, arrange for reviews.	X	
o Notify board of reviews.	X	
o Summarize board and RD recommendations.	X	
o Prepare FAIS, CD-435, application and submit to CASC.	X	
o Notify unsuccessful applicants.	X	
o Review application for technical substance, prepare an evaluation for CASC.		X
o Review reports (quarterly, annual, final) for technical compliance with award. Prepare written review and send to CASC & Program Manager.		X
o Coordinate CASC submission of selected applicants with NOAA GC, NCASC, & FARB.	X	
o Coordinate Program Officer activities	X	
o Provide summary performance data on all projects to MARFIN Board and RD.	X	
o Develop MARFIN annual report and executive summary.	X	

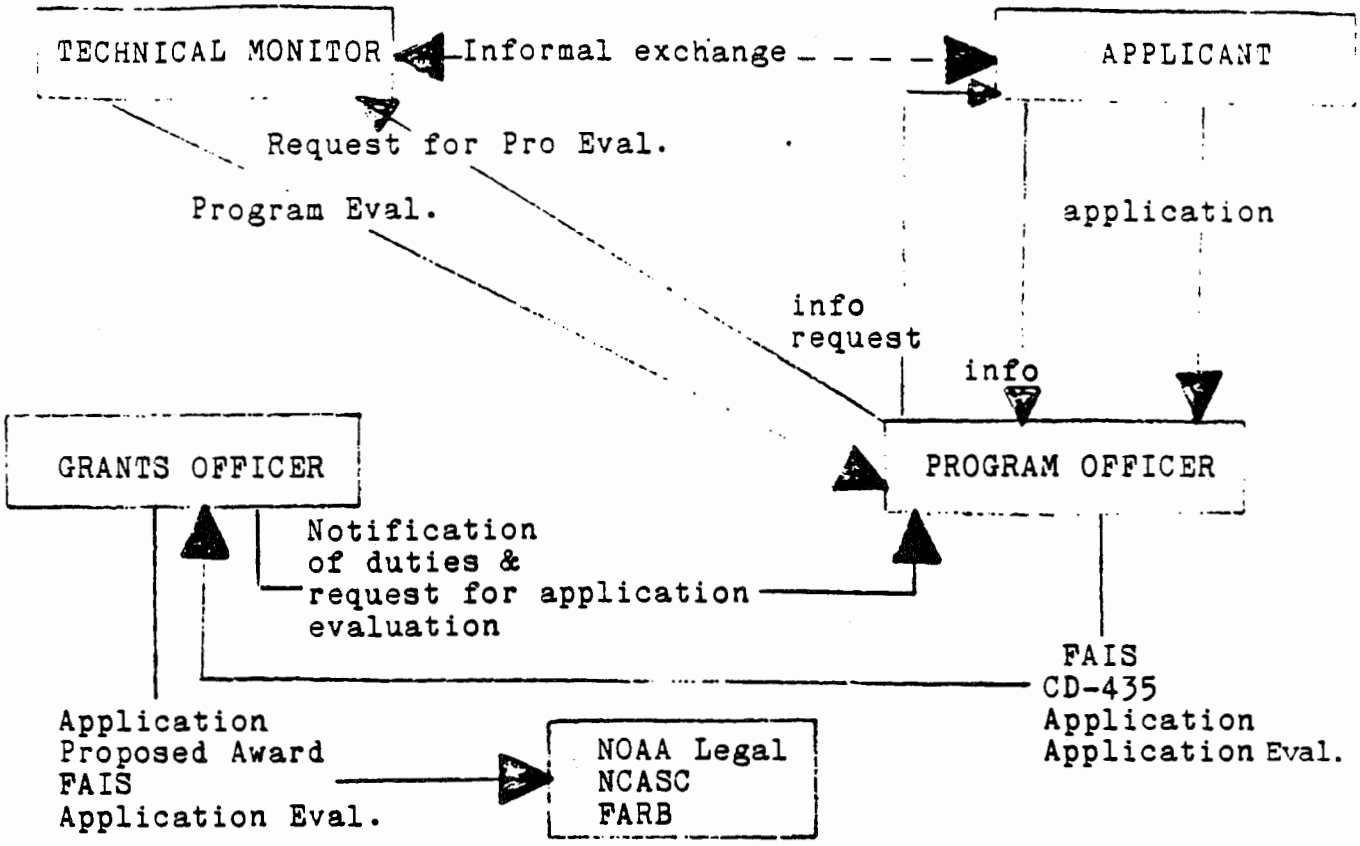
Current Pre-award/Post Board-RD Selection Procedures



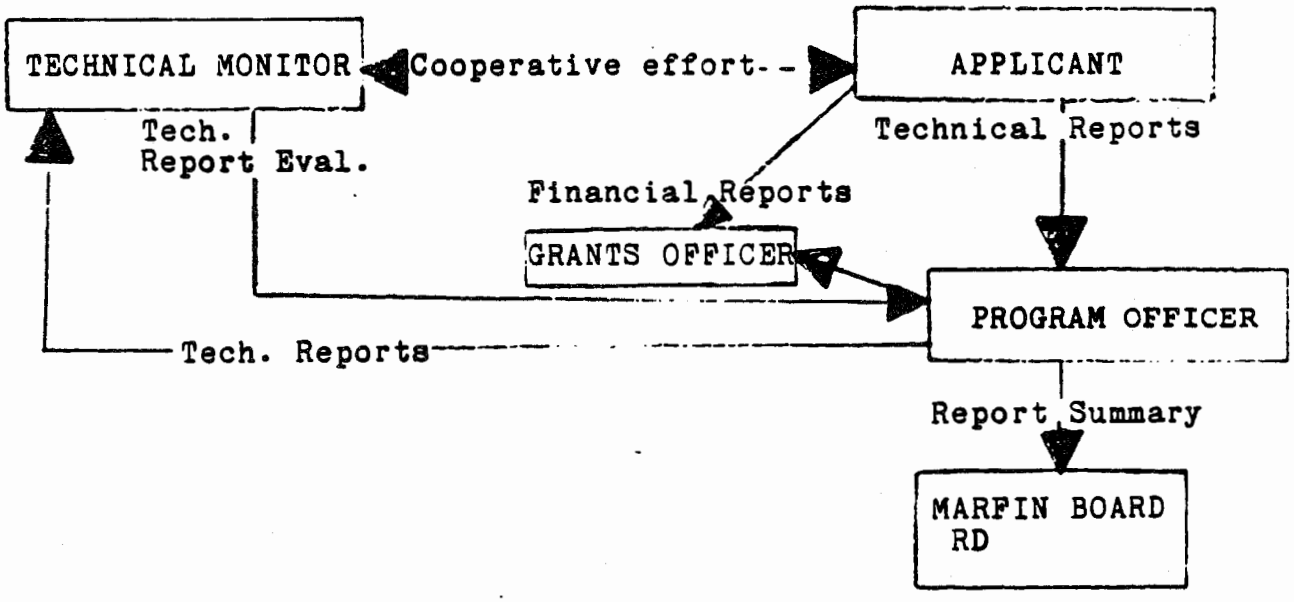
Current Post-award Procedures



Proposed Pre-award/Post Board-RD Selection Procedures



Proposed Post-award Procedures



MARFIN Program Management Board (PMB)
Tuesday, June 13/
Wednesday, June 14, 1989
MINUTES
Tampa, Florida

DRAFT

The meeting held in the conference room of the Gulf of Mexico Fishery Management Council was called to order at 1:05 pm by Chairman Tom Murray. The following were in attendance:

Members
John Ray Nelson, GSMFC (designee), Bon Secour, AL
Tom Murray, GASAFDFI, Tampa, FL
Wayne Swingle, GMFMC, Tampa, FL
Brad Brown, NMFS (designee), Miami, FL
William S. "Corky" Perret, Gulf States, Baton Rouge, LA
Jim Cato, Sea Grant, Gainesville, FL
Bob Jones, Commercial Industry, Tallahassee, FL
Bob Shipp, Recreational Industry, Mobile, AL

Staff
Don Ekberg, NMFS, St. Petersburg, FL
Pat Howell, NMFS, St. Petersburg, FL
Linda Stevens, NMFS, St. Petersburg, FL
Lucia Hourihan, GSMFC, Ocean Springs, MS
Nancy Marcellus, GSMFC, Ocean Springs, MS

Others
Joe Angelovic, NMFS, St. Petersburg, FL
Richard Raulerson, NMFS, St. Petersburg, FL
Nikki Bane, NMFS, Miami, FL
Helen Crown, NCASC, Washington, DC
Jack Greenfield, NMFS, St. Petersburg, FL
Chris Nelson, Bon Secour Fisheries, Bon Secour, AL
*Ralph Rayburn, Texas Shrimp Association, Austin, TX
*Joe Kimmel, FDNR, St. Petersburg, FL
*Terry Leary, GMFMC, Tampa, FL
*Ed Burgess, NMFS, St. Petersburg, FL

*Attendance on June 13 only.

Adoption of Minutes

The minutes of the meeting held February 13-14, 1989 in Mobile, Alabama were adopted as written.

Adoption of Agenda

The agenda was approved as outlined.

Murray introduced Helen Crown from National Capitol Administrative Support Center in Washington to PMB members and stated that Jean Martin-West was on detail in Washington.

Status of NMFS Projects

D. Ekberg distributed a listing of NMFS FY89 MARFIN projects (attachment 1) totaling $1,130,450. A balance of $1.067 million remained available for new funding (with a possible return of $224 thousand as a result of a proposed 7 1/2% reprogramming assessment).

J. Angelovic stated that he has requested the National Academy f Sciences to submit quarterly reports on its MARFIN-funded project (Support of a Study on Sea Turtle Conservation - $210,000) which was approved in February.

Status of FACA Application and MARFIN Board Contract

Ekberg said that the FACA Application was still pending. He announced that according to the Department of Commerce, the contract for administrative support for the PMB could no longer be a sole source contract. A notice for competitive proposals to provide administrative support is being prepared for publication in the Commerce Business Daily. Allowing response time, Ekberg expects that a contract can be in place around September 1, 1989 or later. The current contract held by the Gulf States Marine Fisheries Commission will expire on June 30, 1989. Ekberg said that if the PMB requires support before that time it can be accomplished through a purchase order.

C. Perret questioned the need for competition for this contract based on legal opinions he had read. Ekberg stated that the legal opinion was that the contract could not be sole source. W. Swingle questioned why an agency other than a governmental entity such as the Commission could be considered for the contract particularly because of government travel requirements. Angelovic responded that we won't know some answers until we see who bids on it. B. Jones, J. Cato, and Perret questioned why the $75,000 funded to SERO for MARFIN program management could not be open for competition. Ekberg said it was the way NMFS had chosen to manage the program.

The need for administrative support to arrange the 2nd Annual MARFIN Conference was much discussed. Perret requested Ekberg to contact the Contract Officer on this date to see if the existing contract could be extended through August 30 to take care of the conference. Angelovic said that Ekberg will look into this. N. Bane reaffirmed the importance of requesting an extension today.

Presentation of NMFS Priority Listing of Proposals (based on NMFS and other peer review)/Board Member Comments on NMFS Presentation

A listing of proposals showing each average score, number of reviews and NMFS recommendation (H - highly recommended, R - recommended, N - not recommended) was distributed (attachment 2). There were 80 different reviewers of this year's projects. Sheets were available for PMB members to record specific individual comments on individual projects. B. Brown presented NMFS reviews on biological projects and R. Raulerson presented NMFS reviews on projects concerning economics. Projects were discussed individually and PMB members recused themselves from any deliberation from which they or their employing institution could benefit. Ekberg recorded either a plus or minus sign on a score sheet following individual member comments on each project discussed.

As a result of the individual member comments heard during the first day's session the following projects were felt to be inappropriate for MARFIN funding in FY 89.

1.0.01, Louisiana State Univ. (Influ of hypoxia on shrimp pop char in NGOM shelf waters).

1.0.02, Louisiana State Univ. (Dev & field verification of a new method for est shrimp growth paramet).

1.0.01, Gulf Shrimp Res. & Dev. Found. Inc. (Profile of shrimp vessels & boats in use in GOM com shrimp harvstg ind).

1.1.01, Texas A&M Res. Found. (White shrimp assessmt to det stock/rec relationship).

1.1.02, Louisiana Dept. Wildlife & Fisheries (Assessment of mangmt strategies for white shrimp).

2.A.02, Louisiana State Univ./A&M College (Det of volatile odorus comp affectg flavor qual of menhaden surimi).

3.A.01, Louisiana Univ. Marine Consortium (Recruitmt in S & K mackerel: understdg & prediction).

3.B.03, Louisiana State Univ. (Det of abundance of king mackerel res in LA king mackerel fishery).

4.0.01, Henry I Windes (Reef fish - mechanical visual video monitoring/recording).

4.A.01, Texas Parks & Wildlife Dept. (Socioecon impact of rec reef fish fishermen in TX coastal waters).

4.G.01, Alabama Dept. Cons. & Nat. Res. (Eval of art reef effect on reef fish rectmt, food habits & art propagation of red snapper & stock analysis in E, W, & central GOM).

4.K.01, Univ. of Texas at Austin (Dev of spawng & rearg tech study of early life hist stages red snapper).

5.A.01, LMR Fisheries Research, Inc. (Econ analyses of prodcg & processg (canning) coastal sardines & herrings in NGOM).

5.D.01, Univ. of South Florida (Util of zooplankton energy by Spanish sardine on CW of FL).

6.D.02, Mississippi Dept. of Wildlife Conservation (MS/NMFS shark stock assmt prog, phase I).

7.A.01, Univ. of South Florida (Effects of oxidizg env on hemocyte act & depuration in oysters).

7.A.02, Gulf & South Atlantic Fish. Dev. Found. Inc. (Lab & field eval of com oyster depuration in GOM).

7.B.01, Marine Environmental Sciences Consortium (A pest management strategy to control oyster drills).

7.D.01, Marine Environmental Sciences Consortium (Eval quahog abundance & growth in inshore AL & NW FL: assmt clam cult).

8.A.01, Gulf Coast Research Lab (Harvest potential of deep sea red crab, dist of genus in NWGOM).

8.B.01, Old Dominion Univ. Res. Found. (Eval of methods to est rec blue crab fishg in GOM).

8.D.01, Florida Dept. Natural Resources (Genetic stock ident of blue crab pop with emphasis on GOM pop)

8.E.01, Louisiana State Univ. (Habitat selctn & recruitmt of juv blue crabs in LA).

8.E.02, Gulf Coast Research Lab (Relationship of physical dynamics to larval recrtmt of finfish & crust).

8.E.03, Marine Environmental Science Consortium (Rcrutmt & habitat util by blue crab: importance of juv nursery hab).

11.A.05, Florida Dept. Natural Resources (Preliminary, aerial, line-transect survey red drum sch density off WCFL).

11.D.01, Univ. of Texas at Austin (Vul of red drum larvae & juv to predation by fishes of various sizes).

11.D.03, Marine Environmental Sciences Consortium (Value of veg & unveg habitats to juvenile spotted seatrout & red drum).

12.0.01, Fish Trackers Inc. (Public part in tag & release fishg as means of promotg conservation).

The remaining 30 projects requesting a total of $1,734,429 were held over for further discussion on the following day.

The first day's session was adjourned at 6:07 to reconvene at 7:30 am on the following day.

Wednesday, June 14, 1989

Chairman Murray reconvened the meeting at 7:38 am. Discussion and PMB members' approval of projects requesting MARFIN funding resumed.

B. Shipp recommended that members reconsider three projects which had been dropped on the previous day because of the high scores they had received and because they met the priority listing as published in the Federal Register. PMB members agreed that 7.D.01 (Marine Environmental Sciences Consortium - Eval quahog abundance & growth in inshore AL & NW FL: assmt clam cult); 8.B.01 (Old Dominion Univ. Res Foundation - Eval of methods to est rec blue crab fishg in GOM); and 11.D.03 (Marine Environmental Sciences Consortium - Value of veg & unveg habitats to juvenile spotted seatrout & red drum) should be held over for further discussion.

Of the 30 projects remaining from the previous day plus the three readded, those considered inappropriate for funding follow:

3.A.03, Mote Marine Lab (Cobia migration & life history study in GOM).

3.B.01, Univ. of Miami (Dev multivariate growth to convert length dist to age in S mackerel). --Will be asked to resubmit next year.

3.B.05, Florida Dept. Natural Resources (Cryptic mortality, related to capture by H&L, for Spanish mack in EGOM).

5.0.01, Univ. of S Florida (A study of genetic mixing among Spanish sardine stocks).

6.D.03, Louisiana State Univ. (Relationship between domestic longline fishery catch & thermal var GOM).

8.B.01, Old Dominion Univ. Res. Found (Eval of methods to est rec blue crab fishg in GOM)

10.0.02, Mississippi State Univ. (Seasonal abundance & dist of Kemp's ridleys in MS Sound).

11.D.04, Univ. of SW Louisiana (Effect of low temp on red drum pop & possible appl to mangmt strategies) --Will be asked to resubmit next year.

12.B.01, East Carolina Univ. (Limited entry in the stone crab fishery) --Will be asked to resubmit next year.

Projects which were approved by individual members of the PMB for MARFIN funding with FY 89 monies follow.

1.1.03, Louisiana State Univ./Louisiana Dept. Wildlife & Fisheries (Enhancg benefits from shrimp in GOM by optimzg shrimp management in LA).

2.A.01, Marine Chemurgics (Shelf life of food grade gulf menhaden oils, oils used in food systems).

3.A.02, Louisiana State Univ. (Age, growth & repro. biology of amberjack & cobia from coastal LA waters). (Quarterly reports to include raw data)

3.B.02, Univ. of Miami (Implemt of log book sys for spotter pilots & fleet capt rcd mackerel).

3.B.04, Mote Marine Lab (K & Spanish mackerel migration & stock assessmt study in SGOM). (Also collect data on cobia encountered).

4.0.02, Louisiana State Univ. (Mackerel & reef fish bioprofile & catch/effort data col from NGOM).

4.H.01, Univ. of S Alabama (Invest of life hist parameters of species of second reef fish & dolph). (Quarterly reports to include raw data; also collect data on cobia encountered).

4.K.02, Gulf Coast Research Lab (Early life hist of snappers in coastal & shelf waters of NCGOM).

5.B.01, Florida Dept. Natural Resources (Invest of in & offshore pop dynamics of Spanish sardines along CW FL).

6.0.01, Louisiana State Univ. (Age, growth, diet & spawning rate of yellowfin tuna in MS River plume).

6.D.01, Louisiana Dept. Wildlife & Fisheries (Biol & catch/effort samplg from tuna & shark fisheries in NGOM). (Clarify budget).

7.0.01, Louisiana State Univ. (Econ analysis of leasing activities in LA oyster ind. part II).

10.0.01, Gulf Specimen Marine Lab (Char of inshore pop of Kemp's ridley turtle in NEGOM). (Contingent on getting permit).

10.0.03, Florida Dept. Natural Resources (Systematic survey of stranded mar turtles for NMFS stat zones 4 & 5).

11.0.01, Florida Dept. Natural Resources (Est spawng stock biomass & exploit/escapmt rates for pop black mullet).

11.A.01, Alabama Dept. Conservation & Natural Resources (Age class struc of exploited red drum in NC GOM)

11.A.02, Louisiana State Univ. (Var of yr-class strength & annual reprod output of red & black drum NGOM).

11.A.03, Louisiana Tech Univ. (Allozyme var in black & red drum, spotted seatrout: stock).

11.A.04, Florida Dept. Natural Resources (Age validation of adult black drum in FL).

11.D.02, Louisiana State Univ. (Utilization of fisheries-independent data; future mangmt implications).

11.D.03, Marine Environmental Sciences Consortium (Value of veg & unveg habitats to juvenile spotted seatrout & red drum).

Project 1.B.01, Texas A&M Research Foundation (Econ impact of TEDS: enhancement of econ evals - start date 1/1/90), was preapproved to be funded as a contract with next year's monies contingent on the PMB's approval for funding TED research through NMFS next year.

The total funding of the approved projects amounted to $1,202,378, approximately $135,000 over the amount available for new awards. There was discussion regarding the possibility that some of the approved projects might not pass cost analysis by NOAA grants management and therefore drop out; and also the possibility of a return of part or all of the 7 1/2% reprogramming assessment ($224K).

* J. Cato moved that the PMB direct D. Ekberg to use whatever means available within the NMFS to negotiate with investigators and see if they can come up with $135,000 in recommended or suggested cuts. The motion was seconded and there was a consensus of approval. W. Swingle further suggested that the investigators be informed that very detailed budgets are required and that most will have to resubmit such. J. Angelovic said that NMFS would make the contacts and try to find $135,000 in cuts.

It was the consensus of the PMB to list some projects in contingency in case some of the approved projects were to drop out or reprogramming monies were returned.

Project 8.E.01, Louisiana State Univ. (Habitat selctn & recruitmt of juv blue crabs in LA - $26,707) was listed as the first contingency.

Project 10.A.01, Texas A&M Research Foundation (Assessment of nonshrimpg mortality of sea turtles - $115,040) was listed as the second contingency.

Project 7.D.01, Marine Environmental Science Consortium (Eval quahog abundance & growth in inshore AL & NW FL: assmt clam cult - $57,832) was listed as the third and lowest contingency.

A listing of the approved projects and those listed in contingency will be forwarded to PMB members by Ekberg by June 20.

FY 1989 MARFIN Technical Conference

It was the consensus of the PMB to hold the second annual MARFIN conference in New Orleans, Louisiana and to follow the conference with a PMB meeting to set priorities for FY 90. The dates for the conference and meeting will be September 20 (noon) through September 22.

There was much discussion on how to handle the coordination of the conference as GSMFC's contract for PMB support expires on June 30, 1989. Ekberg said the decision that the contract for PMB support could no longer be sole source came from Commerce Procurement. The justification he had submitted did not qualify as a sole source justification and therefore the contract has to be awarded on a competitive basis. Ekberg also said that it has been inferred to him that they do not want to extend the current contract.

Angelovic said it may be possible to extend the contract (first option) while awaiting competitive proposals in order to carry the PMB over the period of time where they may be without service. Other options were listed in case the current sole source contract can not be extended through August 30. The second option is a purchase order; the third option is a quick reaction task order contract and the fourth and final option is that NMFS could handle the coordination of the conference.

Angelovic said that Ekberg would call Bob Uhlstedt before June 16 and report to the PMB by that date or early the next week (beginning June 19).

There being no further business the meeting adjourned at 11:30 am.

MARFIN 89 NMFS IN-HOUSE PROPOSALS REVISED 5-1-89

PROJ#	APPNAME	PROJNAME	PI	STARTDAT	ENDDATE	$AWARD
89NMFS x	SERO	MARFIN PROGRAM MANAGEMENT	EKBERG, DON	10/01/88	09/30/89	$75,000.00
89NMFS01 x	SEFC, NELSON	RED DRUM STOCK ASSESSMENT ANALYSIS	NELSON, WALTER	10/01/88	09/30/89	$25,000.00
89NMFS02 x	SEFC, NELSON	CENTRALIZED TAGGING FOR RED DRUM	NELSON, WALTER	10/01/88	09/30/89	$30,000.00
89NMFS03 x	SEFC, NAKUMARA	KING AND SPANISH MACKEREL RESEARCH	NAKAMURA, EUGENE	10/01/88	09/30/89	$205,000.00
89NMFS04 x	SEFC, KEMMERER	LATENT RESOURCES RESEARCH	KEMMERER, ANDREW	10/01/88	09/30/89	$540,000.00
89NMFS05 x	SEFC, KLIMA	EVAL. OF THE IMPACTS OF TED ON SHRIMP,CATCH RATES, & BY-CATCH IN GOM	KLIMA, EDWARD	10/01/88	09/30/89	$112,000.00
89NMFS06 x	SEFC, KLIMA	SEA TURTLE STRANDING IN TX AND SW LA	KLIMA, EDWARD	10/01/88	09/30/89	$40,000.00
89NMFS07 x	SEFC, KEMMERER	TED TECH. TRANSFER	KEMMERER, ANDREW	10/01/88	09/30/89	$55,000.00
89NMFS08 x	SEFC,KEMMERER	SMALL TURTLE TED EVAL	KEMMERER, ANDREW	05/01/89	09/30/89	$35,000.00
89NMFS10 x	SERO, SCHMIED	EDUC. TOOLS FOR MAR. REC. FISHERMEN TO PROMOTE WISE USE & CONSERVATION OF GULF FISHERY RES.	SCHMIED, RON	03/01/89	09/30/89	$13,450.00
						$1,130,450.00

1989 NMFS SOUTHEAST REGION GRANTS PROJECTS
STAGE II - MARFIN OR S-K MEETING

PROJECT #	APPLICANT	PRINCIPAL INVESTIGATOR	PROJECT NAME	YR/TYRS	START DATE	END DATE	$ REQUESTED YEAR 1	$ REQUESTED YEAR 2	$ REQUESTED YEAR 3	TOTAL $ REQUESTED	AVERAGE SCORE	# OF REVIEWS	NMFS REVIEW
89MAR01.0.01	LSU	R. EUGENE TURNER ET.AL	INFLU OF HYPOXIA ON SHRIMP POP CHAR IN NGOM SHELF WATERS	1/2	10/01/89	09/30/91	$46,772.00	$46,772.00	-0-	$93,544.00	74	5	R
89MAR01.0.02	LSU	JAMES POWER	DEV & FIELD VERIFICATION OF A NEW METHOD FOR EST SHRIMP GROWTH PARAMET	1/2	11/01/89	10/31/91	$50,657.00	$44,964.00	-0-	$95,621.00	78	3	N
89MAR01.B.01	TX A & M RES FOUND	WADE GRIFFIN	ECON IMPACT OF TEDS: ENHANCEMENT OF ECON EVALS	1/1	01/01/90	12/31/90	$29,249.00	-0-	-0-	$29,249.00	76	5	R
89MAR01.B.01	GULF SHRIMP RES. & DEV FOUND INC	RALPH RAYBURN	PROFILE OF SHRIMP VESSELS & BOATS IN USE IN GOM COM SHRIMP HARVSTG IND	1/2	10/01/89	09/30/91	$27,240.00	$27,240.00	-0-	$54,480.00	36	15	N
89MAR01.i.01	TX A & M RES FOUND	WADE GRIFFIN, ET.AL.	WHITE SHRIMP ASSESSMT TO DET STOCK/REC RELATIONSHIP	1/1	01/01/90	12/31/90	$56,951.00	-0-	-0-	$56,951.00	38	4	N
89MAR01.i.02	LA DEPT OF WILDLIFE & FISHERIES	PETE JUNEAU	ASSESSMENT OF MANAGMT STRATEGIES FOR WHITE SHRIMP	1/1	01/01/90	12/31/90	$84,900.00	-0-	-0-	$84,900.00	49	6	N
89MAR01.i.03	LSU/LA DEPT OF WILDLIFE & FISHERIES	JERRY CLARK ET.AL	ENHANCG BENEFITS FROM SHRIMP IN GOM BY OPTMZG SHRIMP MANAGEMENT IN LA	1/2	10/01/89	09/30/91	145,345.00	$145,345.00	-0-	$290,690.00	73	5	R
89MAR02.A.01	MARINE CHEMURGICS	I. H. MILLER, ET.AL.	SHELF LIFE OF FOOD GRADE GULF MENHADEN OILS, OILS USED IN FOOD SYSTEMS	1/1	10/01/89	09/30/90	$34,785.00	-0-	-0-	$34,785.00	86	3	R R
89MAR02.A.02	LSU/A&M COLLEGE	THOMAS C.-Y. HSIEH	DET OF VOLATILE ODORUS COMP AFFECTG FLAVOR QUAL OF MENHADEN SURIMI	1/1	10/01/89	09/30/90	$27,061.00	-0-	-0-	$27,061.00	82	1	N
89MAR03.A.01	LA UNIV MARINE CONSORTIUM	MICHAEL BAGG	RECRUITMT IN S & K MACKEREL: UNDERSTNG & PREDICTION	1/2	08/01/89	07/31/91	152,438.00	$153,184.00	-0-	$305,622.00	72	3	R
89MAR03.A.02	LSU	BRUCE THOMPSON, ET.AL.	AGE,GROWTH,&REPRO BIOLOGY OF AMBERJACK & COBIA FROM COASTAL LA WATERS	1/2	10/01/89	09/30/91	$75,302.00	$75,302.00	-0-	$150,604.00	78	6	R
89MAR03.A.03	MOTE MARINE LAB	KAREN BURNS, ET.AL.	COBIA MIGRATION & LIFE HISTORY STUDY IN GOM	1/1	11/01/89	12/31/90	$65,400.00	-0-	-0-	$65,400.00	74	4	R
89MAR03.B.01	UNIV. OF MIAMI	NELSON EHRHARDT	DEV MULTIVARIATE GROWTH TO CONVERT LENGTH DIST TO AGE IN S MACKEREL	1/2	12/01/89	11/30/91	$48,493.00	$50,680.00	-0-	$99,173.00	80	3	R
89MAR03.B.02	UNIV OF MIAMI	NELSON EHRHARDT	IMPLEMT OF LOG BOOK SYS FOR SPOTTER PILOTS & FLEET CAPT RCD MACKEREL	1/2	12/01/89	11/30/91	$29,120.00	$30,549.00	-0-	$59,669.00	92	2	R

Attachment 2

PROJECT #	APPLICANT	PRINCIPAL INVESTIGATOR	PROJECT NAME	YR/TYRS	START DATE	END DATE	$ REQUESTED YEAR 1	$ REQUESTED YEAR 2	$ REQUESTED YEAR 3	TOTAL $ REQUESTED	AVERAGE SCORE	# OF REVIEWS	NMFS REVIEW
89MARA03.B.03	LSU	EDGAR HOSER, ET.AL	DET OF ABUNDANCE OF K MACKEREL RES IN LA K MACKEREL FISHERY	1/3	09/01/89	08/31/92	$59,830.00	$55,487.00	$55,487.00	$170,804.00	59	5	N
89MARA03.B.04	MOTE MARINE LAB	KAREN BURNS, ET.AL.	K & SPANISH MACKEREL MIGRATION & STOCK ASSESSMT STUDY IN SGOM	1/1	11/01/89	12/31/90	$81,230.00	-0-	-0-	$81,230.00	99	3	N
89MARA03.B.05	FLDNR	FREDERICK SUTTER	CRYPTIC MORTALITY,RELATED TO CAPURE BY H&L, FOR SPANISH MACK IN EGOM	1/1	10/01/89	09/30/90	$15,456.00	-0-	-0-	$15,456.00	89	1 4	N
89MARA04.0.01	HENRY I HINDES	HENRY HINDES ET.AL.	REEF FISH - MECHANICAL VISUAL VIDEO MONITORING/RECORDING	1/3	06/01/89	05/30/92	$66,603.00	$67,642.00	$68,764.00	$203,009.00	42	5	N
89MARA04.0.02	LSU	SANDRA RUSSELL	MACKEREL & REEF FISH BIOPROFILE & CATCH/EFFORT DATA COL FROM NGOM	1/3	10/01/89	09/30/92	$43,628.00	$45,674.00	$47,721.00	$137,023.00	92	6	N
89MARA04.A.01	TX PARKS & WILDLIFE DEPT	GARY MATLOCK	SOCIOECON. IMPACT OF REC. REEF FISH FISHERMEN IN TX COASTAL WATERS	1/1	10/01/89	09/30/90	$16,500.00	-0-	-0-	$16,500.00	56	5	N
89MARA04.G.01	AL DEPT CONS. & NAT. RES.	WALTER TATUM	EVAL OF ART. REEF EFFECT ON REEF FISH RECTMT, FOOD HABITS & ART. PROPAGATION OF RED SNAPPER & STOCK ANALYSIS IN E, W,&CNTRAL GOM	1/3	10/01/89	09/30/92	141,943.00	$100,000.00	$100,000.00	$341,943.00	63	5	N
89MARA04.H.01	UNIV OF S AL	ROBERT SHIPP	INVEST OF LIFE HIST PARAMENTERS OF SPECIES OF SECOND REEF FISH & DOLPH	1/2	01/01/90	12/31/91	$47,521.00	$49,440.00	-0-	$96,961.00	80	4	R
89MARA04.K.01	UNIV OF TX AT AUSTIN	CONNIE ARNOLD	DEV OF SPAWNG & REARG TECH STUDY OF EARLY LIFE HIST STAGES RED SNAPPER	1/2	10/01/89	09/30/91	$51,451.00	$54,099.00	-0-	$105,550.00	69	4	N
89MARA04.K.02	GCRL	J. LYCZKOWSKI-SHULTZ	EARLY LIFE HIST OF SNAPPERS IN COASTAL & SHELF WATERS OF NCGOM	1/2	10/01/89	09/30/91	$10,051.00	$11,056.00	-0-	$21,107.00	95	3	N
89MARA05.0.01	UNIV OF S FL	RAYMOND WILSON	A STUDY OF GENETIC MIXING AMONG SPANISH SARDINE STOCKS	1/2	01/01/90	12/31/91	$49,759.00	$39,797.00	-0-	$89,556.00	75	2	R
89MARA05.A.01	LMR FISHERIES RESEARCH, INC.	CHARLES PECKHAM, R. JUHL	ECON. ANALYSES OF PRODCG & PROCESSG (CANNING) COASTAL SARDINES & HERRINGS IN NGOM	6MO	06/01/89	11/30/89	$51,383.00	-0-	-0-	$51,383.00	67	5	N
89MARA05.B.01	FLDNR	FREDERICK SUTTER	INVEST OF IN & OFFSHORE POP DYNAMICS OF SPANISH SARDINES ALONG CW FL	1/1	10/01/89	09/30/90	$48,203.00	-0-	-0-	$48,203.00	84	4	R
89MARA05.B.01	UNIV OF S FL	JOSEPH TORRES	UTIL OF ZOOPLANKTON ENERGY BY SPANISH SARDINE ON CW OF FL	1/3	10/01/89	09/30/92	$73,289.00	$73,510.00	$76,583.00	$223,382.00	77	2	N
89MARA06.0.01	LSU	RICHARD SHAW	AGE, GROWTH, DIET & SPAWNING DATE OF YELLOWFIN TUNA IN MS RIVER PLUME	1/2	10/01/89	09/30/91	$26,964.00	$26,964.00	-0-	$53,928.00	90	1	N

PROJECT #	APPLICANT	PRINCIPAL INVESTIGATOR	PROJECT NAME	YR/TYRS	START DATE	END DATE	$ REQUESTED YEAR 1	$ REQUESTED YEAR 2	$ REQUESTED YEAR 3	TOTAL $ REQUESTED	AVERAGE SCORE	# OF REVIEWS	NMFS REVIEW
89NA806.0.01	LA DEPT OF WILDLIFE & FISHERIES	JOSEPH SHEPARD	BIOL & CATCH/EFFORT SAMPLG FROM TUNA & SHARK FISHERIES IN NGOM	1/3	10/01/89	09/30/92	$98,330.00	$96,847.00	$104,706.00	$299,883.00	74	6	N
89NA806.0.02	MS DEPT OF WILDLIFE CONSERVATION	SCOTT GORDON	MS/NMFS SHARK STOCK ASSMT PROG, PHASE I	1/3	07/01/89	06/30/92	$31,017.00	$32,000.00	$32,000.00	$95,017.00	27	3	N
89NA806.0.03	LSU	JAMES POWER	RELATIONSHIP BETWEEN DOMESTIC LONGLINE FISHERY CATCHATHERNAL VAR GOM	1/1	01/01/90	12/31/90	$66,849.00	-0-	-0-	$66,849.00	85	3	N
89NA807.0.01	LSU	WALTER KEITHLY	ECON ANALYSIS OF LEASING ACTIVITIES IN LA OYSTER IND. PART II	1/1	10/01/89	09/30/90	$43,144.00	-0-	-0-	$43,144.00	90	5	N
89NA807.A.01	UNIV OF S FL	FRANK FOIEBL	EFFECTS OF OXIDIZG ENV ON HEMOCYTE ACT & DEPURATION IN OYSTERS	1/3	10/01/89	09/30/92	$57,405.00	$62,743.00	$68,139.00	$188,287.00	69	3	N
89NA807.A.02	GASAFDF	TOM MURRAY	LAB & FIELD EVAL OF COH OYSTER DEPURATION IN GOM	1/1	01/01/90	12/31/90	233,518.00	-0-	-0-	$233,518.00	65	1	N
89NA807.B.01	MARINE ENVIRONMENTAL SCIENCES CONSORTIUM	RICHARD ZIMMER-FAUST	A PEST MANAGEMENT STRATEGY TO CONTROL OYSTER DRILLS	1/2	01/01/90	12/31/91	$58,027.00	$55,660.00	-0-	$113,687.00	35	1	N
89NA807.B.01	MARINE ENVIRONMENTAL SCIENCE CONSORTIUM	KENNETH HECK	EVAL QUAHOG ABUNDANCE & GROWTH IN INSHORE AL & NW FL:ASSMT CLAM CULT	1/2	07/01/89	06/30/91	$57,832.00	$61,101.00	-0-	$118,933.00	87	3	A
89NA808.A.01	GCRL	HARRIET PERRY	HARVEST POTENTIAL OF DEEP SEA RED CRAB, BIOL OF GENUS IN NWGOM	1/2	10/01/89	09/30/91	115,258.00	$120,766.00	-0-	$236,024.00	84	2	N
89NA808.B.01	OLD DOMINION UNIV RES FOUND	CYNTHIA M. JONES	EVAL. OF METHODS TO EST. REC. BLUE CRAB FISHG IN GOM	1/1	01/01/90	12/31/90	$38,783.00	-0-	-0-	$38,783.00	81	6	N
89NA808.B.01	FLDNR	THERESA BERT	GENETIC STOCK IDENT OF BLUE CRAB POP WITH EMPHASIS ON GOM POP	1/3	10/01/89	09/30/92	$30,236.00	$38,775.00	$37,349.00	$106,360.00	92	2	A
89NA808.E.01	LSU	D. M. BALTZ	HABITAT SELCTN & RECRUITMT OF JUV BLUE CRABS IN LA	1/1	10/01/89	09/30/90	$26,707.00	-0-	-0-	$26,707.00	82	3	A
89NA808.E.02	GCRL	JOHN STEEN ET.AL	RELATIONSHIP OF PHYSICAL DYNAMICS TO LARVAL RECRTMT OF FINFISHACRUST	1/3	10/01/89	09/30/92	154,595.00	$163,096.00	$167,162.00	$484,853.00	60	3	N
89NA808.E.03	MARINE ENVIRONMENTAL SCIENCE CONSORTIUM	STEVEN MORGAN ET.AL	RCRUITMT & HABITAT UTIL BY BLUE CRAB: IMPORTANCE OF JUV NURSERY HAB	1/2	10/01/89	09/30/91	$73,559.00	$76,585.00	-0-	$150,144.00	89	1	A
89NAR10.0.01	GULF SPECIMEN MAR LAB	ANNE RUDLOE	CHAR OF INSHORE POP OF KEMP'S RIDLEY TURTLE IN NEGOM	1/1	10/01/89	09/30/90	$62,592.00	-0-	-0-	$62,592.00	74	4	N
89NAR10.0.02	MS STATE UNIV	DWIGHT BRADNHAM	SEASONAL ABUNDANCE & DIST OF KEMP'S RIDLEYS IN MS SOUND	1/1	10/01/89	09/30/90	$25,737.00	0	0	$25,737.00	83	3	A

PROJECT #	APPLICANT	PRINCIPAL INVESTIGATOR	PROJECT NAME	YR/TYRS	START DATE	END DATE	$ REQUESTED YEAR 1	$ REQUESTED YEAR 2	$ REQUESTED YEAR 3	TOTAL $ REQUESTED	AVERAGE SCORE	# OF REVIEWS	NMFS REVIEW
89NAR10.0.03	FLNR	COLLEEN COGSAN	SYSTEMATIC SURVEY OF STRANDED NAR TURTLES FOR NMFS STAT ZONES 4 & 5	1/1	10/01/89	09/30/90	$62,630.00	-0-	-0-	$62,630.00	93	5	N
89NAR10.A.01	TX A&M RES FOUND	RAYMOND F. SIS	ASSESSMENT OF SHRIMPING MORTALITY OF SEA TURTLES	1/2	09/01/89	08/31/91	$115,040.00	$119,313.00	-0-	$234,353.00	67	6	N
89NAR11.0.01	FLNR	[redacted]	EST SPAWN STOCK BIOMASS & EXPLOIT/ESCAPMT RATES FOR POP BLACK MULLET	1/1	10/01/89	09/30/90	$48,046.00	-0-	-0-	$48,046.00	83	1	R
89NAR11.A.01	AL DEPT. CONS. & NAT. RES.	WALTER TATUM, ET.AL	AGE CLASS STRUC. OF EXPLOITED RD DRUM IN G/C NRR	1/1	10/01/89	09/30/90	$70,000.00	-0-	-0-	$70,000.00	78	4	R
89NAR11.A.02	LSU	CHARLES WILSON, ET.AL	VAR OF YR-CLASS STRENGTH & ANNUAL REPROD OUTPUT OF REDBLACK DRUM NSRM	1/3	10/01/89	09/30/92	$94,931.00	$96,898.00	$98,377.00	$290,206.00	100	4	N
89NAR11.A.03	LA TECH UNIV	PAUL BARBEY	ALLOZYME VAR IN BLACK&RED DRUM, SPOTTED SEATROUT: STOCK	1/1	10/01/89	09/30/90	$28,117.00	-0-	-0-	$28,117.00	84	1	R
89NAR11.A.04	FLNR	MICHAEL MURPHY ET.AL	AGE VALIDATION OF ADULT BLACK DRUM IN FL	1/3	10/01/89	09/30/92	$4,200.00	$4,200.00	$4,200.00	$12,600.00	95	4	N
89NAR11.A.05	FLNR	MICHAEL MURPHY	PRELIMINARY,AERIAL,LINE-TRANSECT SURVEY RED DRUM SCH DENSITY OFF NCFL	1/1	10/01/89	09/30/90	$54,286.00	-0-	-0-	$54,286.00	55	1	N
89NAR11.B.01	UNIV OF TX AT AUSTIN	LEE FUIMAN	VUL OF RED DRUM LARVAE & JUV TO PREDATION BY FISHES OF VARIOUS SIZES	1/2	08/01/89	07/31/91	$78,298.00	$80,694.00	-0-	$154,992.00	72	3	N
89NAR11.B.02	LSU	RICHARD SHAW, ET.AL.	UTILIZATION OF FISHERIES-INDEPENT DATA: FUTURE MANGMT IMPLICATIONS	1/3	10/01/89	09/30/92	$89,725.00	$89,725.00	$89,725.00	$269,175.00	94	3	N
89NAR11.B.03	MARINE ENVIRONMENTAL SCIENCES CONSORTIUM	KENNTH HECK, ET.AL.	VALUE OF VEGGUNVEG HABITATS TO JUVENILE SPOTTED SEATROUT & RED DRUM	1/2	10/01/89	09/30/91	$58,494.00	$61,499.00	-0-	$119,993.00	95	2	R
89NAR11.B.04	UNIV OF SW LA	H. DICKSON HEESE	EFFECT OF LOW TEMP ON RED DRUM POP & POSSIBLE APPL TO MANGMT STRATEGIE	1/2	10/01/89	09/30/91	$82,599.00	$79,599.00	-0-	$162,198.00	45	3	N
89NAR12.0.01	FISH TRACKERS INC	STEVE BIALIA	PUBLIC PART IN TAGARELEASE FISHG AS MEANS OF PROMOTG CONSERVATION	1/1	09/01/89	08/31/90	$52,000.00	-0-	-0-	$52,000.00	33	2	N
89NAR12.B.01	E CAROLINA UNIV	MICHAEL K. ORBACH, ET.AL.	LIMITED ENTRY IN THE STONE CRAB FISHERY	1/1	10/01/90	12/31/90	$91,955.00	-0-	-0-	$91,955.00	66	5	R
TOTALS							375/462.00	2,337,206.00	$950,413.00	7,045,081.00			

MARINE FISHERIES INITIATIVE
PROGRAM MANAGEMENT BOARD MEETING
Friday, 22 September 1989
New Orleans, Louisiana

MINUTES

The meeting of the Marine Fisheries Initiative (MARFIN) Program Management Board (PMB) held at the Le Pavillon Hotel was called to order at 7:30 am by Dr. James Cato. It was noted that Dr. Cato would be chairing the meeting for Mr. Thomas Murray, who could not attend. The following individuals were in attendance.

Members

Dr. James C. Cato, Sea Grant, Gainesville, FL
Dr. Andrew Kemmerer, NMFS, Pascagoula, FL
Mr. Robert Jones, Commercial Industry, Tallahassee, FL
Dr. Robert Shipp, Recreational Industry, Mobile, AL
Mr. Larry Simpson, GSMFC, Ocean Springs, MS
Mr. William Perret, Gulf States, Baton Rouge, LA
Mr. Wayne Swingle, GMFMC, Tampa, FL
Ms. Jean Martin-West, NOAA/CASC, Kansas City, MO

Staff

Dr. Donald Ekberg, NMFS, St. Petersburg, FL
Ms. Barbara Miller, ENDMARK, Arlington, VA

Others

Ms. Nikki Bane, NMFS, Miami, FL
Dr. Bradford Brown, NMFS, Miami, FL

Adoption of Agenda

Dr. Cato presented the agenda for adoption. It was proposed that a conference evaluation discussion be added to the agenda as the first item of business. Without objection, the agenda was approved as amended.

Adoption of Minutes

Dr. Cato asked if there were any PMB minutes to be approved. It was noted that the minutes of the meeting held 13-14 June

1989, Tampa, FL, had been sent to the Board members for their review. However, since copies were not available, it was agreed that approval of these minutes would be delayed until the next Board meeting.

Conference Evaluation

Dr. Cato opened the floor for discussion to evaluate the conference held the previous two days. Concern was expressed that possibly only projects that have been completed should be presented. It was noted that it was not a wise use of time for the participants or presenters to include projects that have not reached completion. Mr. Swingle suggested that the conference dates be shifted so that all projects would have reached completion. It was noted that there are always extensions and it would not be feasible to base the conference dates on this premise. Dr. Cato suggested that the conference be held annually or bi-annually and invite only the projects that have been completed. He noted that this would still include an 18-month lag time for some projects due to extensions.

Dr. Kemmerer suggested that better coordination be utilized between PIs and that a panel format be maximized. He noted that there needs to be better advertising. It was suggested that the conference be structured as a two-day conference, i.e., one day for presenters, a half day for panel discussions, and a half day for panel summaries.

General discussion continued noting that there needs to be a concerted effort to expand the knowledge of MARFIN, especially in industry and that the conference could be held in conjunction with other meetings in order to make MARFIN more widely known.

Dr. Cato suggested that he, Mr. Jones, and Dr. Kemmerer would survey the PMB and develop a summary of how the conference should be structured. It was agreed that within three to four weeks, Cato, Jones, and Kemmerer would circulate this summary to the Board. It was stressed that more emphasis needs to placed on the needs and makeup of the conference and getting this information out to other meetings. Cost is a major issue, especially the travel portion.

Status of FY 89 Applications

Since Ms. Martin-West had not yet arrived, Dr. Cato turned this item over to Dr. Ekberg for discussion. Dr. Ekberg related that inputs were received from the technical monitors and the applications were submitted to Kansas City the first part of July. He noted that the process is very slow and that review in legal counsel can take up to two months. In the past, the goal has been one week. State grants take up to three months. Mr. Perret asked if there were any significant problems or are they looking at everything. Dr. Ekberg noted that there seems to be a tendency for legal counsel to put their own rules on the process and that the system is very sensitive at the present time. He said that the Department of Commerce has not relaxed any rules. He related that he does not know the status of the applications. Ms. Bane noted that she is aware of some that have gone to the FARB but no one has been notified.

Dr. Ekberg noted that three contingency projects discussed at the previous Board meeting were funded and the results were released.

Ms. Martin-West joined the meeting and related to the Board that most of the applications will be awarded by 30 September.

She stressed that the majority of the applications were in good shape but that the workload is tremendous. Dr. Kemmerer asked if things were expected to get better and have goals been established to streamline the system. Ms. Martin-West said that streamlining is taking place and that things should be working better in six to nine months. She stressed that the delays are primarily in legal counsel due to personnel problems/vacancies and that more in-depth reviews are being done. The dates for accepting applications are 31 August through 15 September; however, she noted that an application can be hand-carried as late as 29 September.

At this time, the FY 1989 MARFIN Budget Allocation (Revised 9/15/89) was reviewed and discussed. Dr. Ekberg was asked what the original allocation was, why the G-R-H cut, and who authorized the cut. He related that they are only notified of the initial allocation and that the cut was taken arbitrarily, as was the congressional decrease. Dr. Ekberg noted that he would attempt to obtain information concerning the budget process from the NMFS Finance Officer.

Review of FY 1990 Federal Register Priorities

A line-by-line review was conducted of the FY 1990 NMFS Federal Register Priorities. It was the general consensus that the Board should go on record as objecting to how the introduction is written. Dr. Ekberg was asked to contact legal counsel to see if the introduction could be changed. Dr. Ekberg agreed to do so.

1. Shrimp. Discussion took place concerning the category of shrimp. Sub-paragraph (h) was specifically pointed out as not being specific enough. After further

discussion, it was agreed that sub-paragraph (h) should be left as it stands. It was determined that sub-paragraphs (b), (d), (g), and (i) should be deleted since these are no longer viable projects to the program. The remainder of the sub-paragraphs, i.e., (a), (c), (e), (f), and (h) should stand as written.

2. Menhaden. Dr. Kemmerer noted that menhaden projects have received various funding cuts and that the menhaden industry has been a strong supporter of MARFIN. It was decided to rephrase sub-paragraph (a) to better explain all facets of the menhaden industry. Sub-paragraph (a) was amended to read "(a) Economic enhancement of products (e.g., surimi, oil, meal, etc.)". Sub-paragraph (b) was agreed to be adequate as it presently reads.

3. Coastal Pelagics. It was determined that sub-paragraphs (b) and (c) under this category should be deleted as they are no longer necessary.

4. Reef Fish. Discussion concluded that all proposals under this category are important. However, it was noted that under sub-paragraph (h), the word "secondary" should be deleted. Sub-paragraph (h) now reads "stock assessment information on target species such as triggerfish, amberjack, etc.".

5. Coastal Herrings. It was the general consensus that all sub-paragraphs under this category are important. Dr. Cato reaffirmed that there was no reason to change anything under this category.

6. Ocean Pelagics. Mr. Swingle noted that the emphasis on sharks is missing and asked whether it should be added under this category. Dr. Shipp noted that sharks are a difficult group to specify since there are so many species. It was agreed that a new category should be added for sharks in order to be more specific. Dr. Shipp was asked to write up the category for sharks and that this category would become a new Number 7 and the remainder of the categories would be renumbered to reflect this insertion.

7. Sharks. New entry to read as follows: (a) Biological profiles of principal species and effort, and (b) Characterization of the Gulf shark fishery (including catch statistics, participants and landings).

8. Marine Mollusks. Previous Number 7. It was noted that sub-paragraph (a) lends itself to only basic knowledge of depuration systems and that there are many unknown factors such as usefulness of ozone, etc. It was questioned whether MARFIN should initiate major efforts towards this. The consensus was that further efforts could prove to be very expensive and that this sub-paragraph takes into account the original MARFIN priorities for shellfish. It was agreed that sub-paragraphs (b) and (d) are adequate as written. Sub-paragraph (c) was amended by deleting the words "oyster varieties". It now reads "development of improved culture methods, and technology transfer".

9. Crabs and Lobsters. Previous Number 8. It was agreed that sub-paragraphs (a) and (e) should be deleted as they are no longer necessary. Sub-paragraphs (b), (c), and (d) remain as written.

10. Bottomfish. Previous Number 9. Dr. Kemmerer stated and the Board agreed that all sub-paragraphs continue to be valid and should remain as written.

11. Marine Mammals and Endangered Species. Previous Number 10. Approved as written.

12. Estuarine Fish. Previous Number 11. Mr. Perret stated under sub-paragraph (a), the words "age structures" should be deleted as no longer valid. Mr. Swingle noted that age structures continue to be important since additional groups have been discovered, such as sheepshead. He also noted that there has been difficulty finding the "teenagers" of the red drum and therefore age structure remains an important factor. It was agreed that sheepshead should be added and the words "and catches" deleted. Sub-paragraph (a) now reads "Improving estimates of age structures of red and black drum and sheepshead". Sub-paragraph (b) was rewritten to read "measurement and understanding of escapement dynamics of juvenile red and black drum to offshore stock". Sub-paragraph (c) was deleted as no longer valid. The word "sciaenids" in sub-paragraph (d) was changed to "species". Sub-paragraph (d) now reads "enhancing knowledge of recruitment of early juvenile stages of economically important species, including habitat requirements".

13. General. Previous Number 12. General discussion concluded that this category should be rewritten to include more emphasis on recreational fishing inshore, for all sub-paragraphs. Dr. Cato rewrote category Number 13 and the Board accepted the rewritten version.

Category 13 now reads "(a) Conduct economic research applicable to each Gulf of Mexico fishery, including cost and return analysis, (b) estimate supply and demand functions for important recreational and commercial fisheries, (c) describe the economic linkages among recreational or commercial multi-species fisheries, (d) analyze the economic and political boundaries affecting the foreign trade of Gulf of Mexico fisheries, (e) describe the economic structure, conduct and performance of the inshore recreational guide-boat sector, (f) describe the economic structure, conduct and performance of the support sector (e.g., bait/tackle shops) for the recreational fishing industry, (g) describe procedures to implement limited entry for existing or developing commercial or recreational fisheries such as reef fish, shark, stone crab, or butterfish, and (h) develop alternative methods to handle or use by-products generated from seafood processing common to the Gulf of Mexico."

Dr. Ekberg stated that all the priorities would be retyped and circulated among all Board members to ensure that all were in agreement on how the priorities are presented.

Dr. Kemmerer raised the question as to whether it would be appropriate to put out pre-proposal notices in order to promote a better understanding of MARFIN and to outline what MARFIN is looking for in proposals. Dr. Ekberg related that the Federal Register is readily available. He stated that there could be legal problems involved in sending the proposal information out early, in that someone would have to decide on a list and that the possibility of a group not receiving the information could have legal ramifications. Ms. Martin-West stated that a Notice

of Intent can be put in the Federal Register but that involves a short turnaround in order for everyone to be notified. It was suggested that a brochure could be developed that would explain MARFIN and the success rate of proposals (past and present), and it should also mention the annual conference. It was agreed that more information circulated would enhance competition and result in better proposals and possibly more cooperation among research facilities.

Mr. Perret raised the question that once the Federal Register has been published, is there a problem for any Board member to grant a meeting with an agency interested in responding to a proposal listed in the Federal Register. Dr. Ekberg related that it could be construed as not proper especially if another agency questioned why it was not allowed to meet with a Board member. He stated that there could be legal problems since the proposals are open competition. It was the general opinion of the Board that if a Board member is contacted by an agency concerning any proposals, the agency should be referred back to the NMFS Program Officer.

NMFS Proposals/Pre-proposals for FY 1990

Discussion opened by matching the project numbers to the priority proposals listed in the 1990 MARFIN Program Research Proposal Project Summaries presentation, dated 22 September 1989. It was noted that Project #90NMFS07 was reviewed last year and was not approved. A review of each proposal followed.

Project #90NMFS08 - Evaluation of the Impacts of Turtle Excluder Devices (TEDs) on Shrimp Catch Rates in the Gulf of Mexico. It was noted that this proposal is at the same funding rate as last year and should have been done. It was

agreed that this is a viable proposal and that the regulations have not imposed any problems on continuing this work. Approved.

Project #90NMFS10 - TED Technology Transfer. Dr. Kemmerer stated that the funds requested for this proposal provide for two people and the addition of one person and certification. He emphasized that this program has a non-research component in that it is responding to the needs of industry. Mr. Jones agreed that this is a good program and provides an avenue to solve problems. Dr. Kemmerer related that other monies are available but are administratively tied up. Overall Board consensus was for approval. Approved.

Project #90NMFS07 - Shrimp Trawl Bycatch Reduction. As previously noted, this is a new proposal that was reviewed last year. However, it still remains a critical item. Dr. Kemmerer stated that attempts have been made to receive internal funding and that there is a good chance for funds in FY 1991. It was noted that there is an expense for shrimp trawl hires and that there needs to be increased cooperation of leaders in the shrimp industry. There also needs to be increased identification of industry contacts. There is approximately $15,000 to $30,000 set aside for industry involvement. Mr. Jones stated that the concept is good but questioned the wording. It was stated that this proposal is the first step to begin incorporating industry into solving the by-catch problem. Approved.

Project #90NMFS12 - Coastal Resources Research in the Southeast. It was stated that efforts are continuing to

obtain internal funding for this project but that funding has not yet been made available. It was the consensus of the Board that this proposal is not specific enough and that the operations plans will be drawn up at a later time. It was noted that a revised version may be submitted. It was agreed that this proposal should be resubmitted.

Project #90NMFS09 - Eastern Gulf Reef Fish Catch and Effort Data. It was noted that this is a new project that the Board has not reviewed. Mr. Swingle explained that this project collects size frequency information for stock assessments. It is a one year project. The Board requested that it be resubmitted following rewrite and peer review.

Project #90NMFS03 - Economic Data Collection for the Gulf of Mexico Commercial and Recreational Reef Fish Fisheries. It was stated that this is a one year project and will gather information not presently readily available. It was noted that this project emphasizes the need for ongoing increased priorities in reef fish areas. Dr. Cato stated he was concerned about the lack of details in the proposal. It was noted that this proposal has not had peer review and therefore, the Board could not provide funding support at this time. It was agreed that this proposal should be resubmitted after peer review is accomplished.

Project #90NMFS06 - Latent Resources Research in the Gulf of Mexico. Dr. Kemmerer related that as a continuing project, this proposal makes up the bulk of the MARFIN contributions. He stated that they are one year into the project and that a five year plan is associated with this project to include newer trawls, satellite work, and hydroacoustics. He explained that other funds should become available and

therefore the funding from MARFIN would be reduced each year, and that the end result would be that this project would become pure resource-related. He expects that this project will require MARFIN funding for two to three years more. Approved.

Project #90NMS11 - Continuation of the Expanded and Improved Sea Turtle Stranding and Salvage Network (STSSN) in Shrimp Statistical Subareas 17-21, Southwest Louisiana and Texas. It was noted that this is a continuing project and that collection is being contracted out using volunteers. This project documents the impact of TED regulations over a two-year period and directly depends upon compliance. The Board was in agreement that this is a viable project. Approved.

Project #90NMFS02 - An Educational Tool for Marine Recreational Fishermen to Promote Wise Use and Conservation of Gulf of Fishery Resources. Dr. Shipp related that this project includes the reprinting of developed material and brochures and the addition of related "angler ethics" educational materials in order to increase awareness and support of ethical angling practices. Approved.

Project #90NMFS04 - Economic Impact of Fishery Regulations on the King Mackerel Industry. It was noted that this project was late being submitted, had not had peer review, and therefore would not be considered at this time. A resubmission of the proposal is required.

Project #90NMFS05 - Economic Analysis of Finfish Bycatch in the Gulf of Mexico Shrimp Fishery. It was noted that this project was late being submitted, had not had peer review, and therefore would not be considered at this time. A

resubmit is required.

In summary, Dr. Cato reaffirmed, with the Board consensus, that Projects 3, 4, 5, 9, and 12 require resubmission and will not be addressed for funding during this meeting. The remaining projects received Board approval.

Other Business

Mr. Jones stated that he will be circulating a paper, "Sea Turtles on Beaches", to the Board for their review.

Next Board Meeting

Dr. Cato asked if the Board needed to set a date for the Board to convene in order to consider the resubmission of proposals. It was agreed that a conference call would be appropriate after all the Board members had reviewed the resubmissions and that there was no need at this time to confirm a date for the next formal meeting. It was stated that plans for the next conference should be put into the system and that it should be tentatively scheduled for late September 1990.

With no further business to be considered, Dr. Cato adjourned the meeting at 1:30 P.M.