OCTOBER 1984 SEAMAP REPORT TO THE TECHNICAL COORDINATING COMMITTEE OF THE GULF STATES MARINE FISHERIES COMMISSION

> PREPARED BY THE SEAMAP SUBCOMMITTEE October 18, 1984

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# **Gulf States Marine Fisheries Commission**

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DATE: October 18, 1984

TO: Technical Coordinating Committee

FROM: Walter M. Tatum SEAMAP Subcommittee Chairman

SUBJECT: Fall 1984 SEAMAP Report to the Technical Coordinating Committee

The SEAMAP-Gulf Program has successfully completed the third year of SEAMAP activities in the Gulf of Mexico. This report is intended to inform the Technical Coordinating Committee (TCC) of SEAMAP activities and progress since March 1984, and proposed activities for FY 1985.

As Chairman of the Subcommittee, I wish to thank the members of the Subcommittee and SEAMAP work groups, and the staff of the Gulf States Marine Fisheries Commission for their considerable time and efforts in making this third year of the program productive and successful.

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GULF STATES MARINE FISHERIES COMMISSION

Prepared by the SEAMAP SUBCOMMITTEE

October 18, 1984

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#### INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) has completed its third year of activities in the Gulf of Mexico. The primary goal of SEAMAP, a state/Federal/university effort, is to collect, manage and disseminate fishery-independent data in a cost-effective and coordinated manner. Subcommittee and work groups members for 1984 are listed in Attachment A.

This report is the fourth in a series of annual SEAMAP Subcommittee reports to the Technical Coordinating Committee (TCC) of the Gulf States Marine Fisheries Commission. It is intended to inform the TCC of SEAMAP activities and accomplishments from March 1984 through October 1984, and proposed SEAMAP activities for 1985.

#### 1984 SEAMAP SURVEY ACTIVITIES

The 1984 SEAMAP survey activities consist of the spring and summer ichthyoplankton surveys, summer shrimp/groundfish survey and a National Ocean Service (NOAA) Status and Trends Benthic Surveillance survey. These activities are escribed below.

#### ICHTHYOPLANKTON SURVEYS

1) Spring ichthyoplankton survey.

A 35-day survey for ichthyoplankton in the northern Gulf of Mexico was conducted from April 20 to June 24, 1984 aboard the NOAA ship OREGON II. Major objectives of the survey were:

- Collect ichthyoplankton samples to determine abundance and distribution patterns of eggs and larvae of commercial and recreational fishes in depths to 200 meters.
- Collect environmental data at surface, mid-depth and maximum depths (not to exceed 200 meters).
- \* Test satellite communication system for use on subsequent cruises.
- Obtain water temperature profiles (XBTs) for Minerals Management Service.
- Collect insects to detect possible transgulf migrations.
- Locate significant tilefish and yellowedge grouper concentrations for subsequent submersible study in September, 1984.

Stations for this survey are indicated on Figure 1. Plankton samples were taken with standard MARMAP bongo and neuston samplers. The bongo sampler consisted of two conical 61-cm nets with a mesh size of 333 microns. Tows were made using the single oblique method with towing speed varying between 1.5 and 2.0 knots. Bongo nets were set at a pay-out rate of 30 m per minute (due to winch limitations) and retrieved at 20 m per minute. Sampling depths varied from a maximum of 200 m to within 5 m of the bottom in depths less than 200 m. Flankton specimens were preserved in formalin and subsequently transferred to ethanol for final preservation.

One hundred forty-three stations were sampled during the ichthyoplankton segment of the cruise. Environmental collections were returned to the NMFS-Pascagoula Lab for interpretations. Collections included: 96 XBT drops; 56 cloud cover observations; 33 secchi disc readings; 31 water color measurements; 56 temperature/ salinity profiles (CTD); 111 salinity samples; and 173 dissolved oxygen samples. Plankton samples were shipped to the Polish Sorting Center in Szczecin, Poland, for sorting and identification to the family level.

Plans to rendezvous with the RV ONJUKU of Mexico's Instituto Nacional de Pesca for comparative plankton sampling were cancelled due to mechanical failures on that vessel.

2) Summer shrimp/groundfish survey.

Plankton stations were made at selected sites during the seven-week summer SEAMAP shrimp/groundfish survey. A total of 68 bongo and 91 neuston samples were taken aboard the NOAA ship OREGON II from June 6 through June 28, 1984 in the northern and western Gulf of Mexico. Samples were also taken by the states of Alabama, Mississippi and Louisiana (24 neuston samples from the latter). Major objectives of the piggy-backed plankton survey were:

Collect ichthyoplankton samples throughout the survey area.
Collect associated hydrographic and environmental data at each plankton station.

Plankton stations were made approximately 30 miles apart; stations within a mile of a defined trawl station were moved to the trawl station site. Three transects were made off the coasts of Louisiana and Mississippi. Transect sampling began in 5 fathoms, with a station every 15 miles in an offshore direction, until 5 stations were completed. Samples from the bongo and neuston nets were preserved in formalin and shipped to the NMDS-Miami Laboratory, for subsequent transshipment to the Polish Sorting Center. Plankton stations are indicated on Figure 2.

3) August king mackerel larvae survey.

In response to a request of the Gulf of Mexico .Fishery Management Council, a SEAMAP king mackerel larvae survey was undertaken, with the NOAA ship OREGON II sampling offshore from August 2 through August 29, 1984 while inshore sampling was performed by the Florida Department of Natural Resources and the Louisiana Department of Wildlife and Fisheries. Florida sampled from Tampa to Key West; Louisiana sampled its territorial waters; NMFS stations are indicated on Figure 3.

Specific objectives of the survey were:

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Collect plankton samples with bongo and neuston nets for studies of the abundance and distribution of king mackerel and other commercial and recreational larval fishes in the Gulf of Mexico.

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- Collect temperature, salinity and dissolved oxygen data with CTD at the surface, mid- and maximum depths (not to exceed 200 m).
- Monitor an oil spill off Cameron, Louisiana to determine its effects on marine life and the environment.
- Collect insects to detect possible transgulf migrations.
- ° Obtain deepwater XBT temperature profiles (greater than 200 m).

Plankton stations were preselected along north/south transects between 5 and 100 fathoms from Pascagoula, MS to Brownsville, TX for the first segment, and from Pascagoula, MS to Tampa, FL for the second segment. Plankton samples were taken with standard MARMAP bongo and neuston following procedures outlined in the spring ichthyoplankton survey [ 1) above]. Environmental sampling was also as described earlier.

One hundred eighty-five plankton tows (including 24 tows at the 24-hour station) were made by the OREGON II between 5 and 1000 fms from Brownsville to Tampa. Plankton samples were sent to NMFS-Miami for transshipment to the Polish Sorting Center. Environmental data were returned to Pascagoula for interpretation. Environmental measurements included 49 secchi disk and water color measurements; 185 CTD casts; 7 XBT drops; 28 bucket thermometer measurements; 185 chlorophyll samples and 553 dissolved oxygen readings.

Chlorophyll samples from all SEAMAP cruises are currently being analyzed by the Florida Department of Natural Resources and Louisiana State University's Coastal Ecology and Fisheries Institute, at no cost to the SEAMAP Program. Results will be entered into the SEAMAP Information System upon completion.

#### SHRIMP/GROUNDFISH SURVEY

The 1984 Shrimp/Groundfish trawl survey was planned by the Shrimp/ Groundfish Work Group in winter, 1984 and approved by the Subcommittee in March, 1984 The sampling design was changed from that of 1982 and 1983, with a total of 200 offshore stations sampled in two east-west/west-east segments. This was felt to adequately survey the northern and western Gulf of Mexico with no reduction of validity from previous years. Major objectives of the survey were:

To determine size distribution of penaeid shrimp by depth across the northern Gulf.

- \* To obtain samples of brown, pink and white shrimp to determine length-weight relationship.
- To collect finfish by-catch data.
- To collect associated hydrographic and environmental data, and obtain ichthyoplankton samples at selected stations.

Sampling was done by the NOAA Ship OREGON II in offshore waters from June 6 through July 24, 1984. The survey also included inshore sampling by Louisiana, Alabama and Mississippi. Results presented here are from the NOAA segment only.

Shrimp and bottomfish samples were taken at 200 randomly-selected trawl sites from Mobile, AL to the Texas-Mexico border, in 5 to 50 fathoms. All stations were sampled at night using a 40-ft. shrimp trawl with mud rollers and 8' x 40" wooden chain doors. Sample sites generally encompassed a 1-fm





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depth strata between 5 and 30 fms or a 5-fm depth strata between 30 fms and 50 fms. Tows were made perpendicular to depth contours, with a maximum tow time of 30 minutes and minimum tow time of 10 minutes, depending on length of the depth strata. Several stations required consecutive tows to cover the entire depth strata. Trawl stations are indicated on Figures 4 - 9.





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Total weight of each catch was recorded and all <u>Penaeus</u> species were separated from the catch. Weight and count of each species was recorded for each site. A random selection of 200 shrimp of each species (when available) was removed for sex and total length data. An additional 3- to 5 lbs. (when possible) was frozen and returned to the NMFS-Galveston Lab for additional analysis. The remainder of the catch was sampled for by-catch information.

Hydrographic and plankton data were taken in accordance with the pro cedure detailed in the <u>Ichthoplankton Surveys</u> section of this section; results of these activities are reported there also.

<u>Vessel satellite communication system</u>. In cooperation with the National Aeronautics and Space Administration, NMFS-Mississippi Labs installed a data communications terminal aboard the OREGON II. The terminal is designed to operate through the ATS-3 satellite system located in a geostationary orbit over the Pacific Ocean. This enabled personnel aboard the OREGON II to transmit daily catch rates and environmental data to the NMFS-Bay St. Louis facility. The data were then put on the Burroughs Computer System in Seattle, WA, enabling subsequent output of weekly data summaries and plots of shrimp and finfish catch rates to interested parties and state fishery management agencies. A total of 217 shrimp and bottomfish tows were made, with dominant faunal components listed in Tables 1 - 3 for east delta, west delta and the Texas coast respectively. Atlantic croaker (<u>Micropogonias undulatus</u>) was most abundance throughout the entire survey area, comprising 18 percent of the total catch by weight, followed by longspine porgy (<u>Stenotomus caprinus</u>) at 12 percent and butterfish (Peprilus burti) at 11 percent.

Table 1. East delta - Major marine animals taken by depth and ranked by weight within each depth strata.

	·	17			3	
Number of Tows	T	17	•	5	5	
Depth Range (fathoms)	5-9	10-19	20-29	30-39	40-50	5-50
Micropogonias undulatus	1	13	2	i	1	1
Stepotomus caprinus	2	3	- 4	3	2	2
Peprilus burti	4	4	1	13	11	3
Cynoscion sp.		14	. 9	2	9	4
Prionotus sp.	3	10	3	6	4	5.
Centropristis philadelphica	-	7	8	4	6	6
Trachypeneus sp.	. 7	2	5	7	8	7
Syacium sp.	·	1	· 7 ·	10	5	8
Synodus foetens	-	12	6	5	- 3	9
Penaeus aztecus	5	15	15	8	13	10
Leiostomus xanthurus	6	-	14	9	7	11
Sicyonia brevirostris	· -	11	10	12	12	12
Diplectrum bivittatum		. 5	13	-	·	13
Anchoa sp.	· _ ·	6	-	-	-	14 /
Trachurus lathami	· · <b>-</b>	17	11	-	-	15
Etropus crossotus	-	9	18	-	-	16
Penaeus duorarum	9	8	16	-	- '	17
Upeneus parvus	· -	16	17	11	10	18
Callinectes similis	. 🛥	18	12	14	-	19
Penaeus setiferus	8	-	-	-	-	20
Lutjanus sp.	-		· · -	-	-	21
Arius felis	: -	-	-	-	-	22

Table 2. West delta - Major marine animals taken by depth and ranked by weight within each depth strata.

Number of Tows	10	39	19	12	14	94
Depth Range (fathoms)	5-9	10-19	20-29	30-39	40-50	5-50
Micropogonias undulatus	1	1	. 8	2	1	1
Stenotomus caprinus	6	3	1	1	2	2
Peprilus burti	5	2	4	5	5	3
Prionotus sp.	9	8	2	6	3	4
Upeneus parvus	2	22	15	-	10	5
Penaeus aztecus	. 3	7	10	8	- 7	6
Synodus foetens	13	14	3	3	6	7
Centropristis philadelphica	10	11	5	7	4 .	8
Trachurus lathami	16	6	6	4	8	9
Trachypeneus sp.	7	4	. 9	10	11	10
Leiostomus xanthurus	12	13	11	. 9	9	11
Callinectes similis	11	5	12	15	15	12
Arius felis	4	19	18	-	. –	13
Cynoscion sp.	8	9	17	13	14	14
Sicyonia brevirostris	18	15	7	12	12	15
Diplectrum bivittatum	-	10	13	-	-	16
Syacium sp.	15	12	19	14	13	17
Lutianus sp.	14	16	14	11	16	18
Etropus crossotus	21	18	16	16	-	19
Anchoa sp.	20	17	-	-	-	20
Penaeus duorarum	19	20	-	-	-	21
Penaeus setiferus	17	21	-	_	-	22

Number of Tows	10	40	17	. 14	9	90
Depth Range (fathoms)	5-9	10-19	20-29	30-39	40-50	5-50
Micropogonias undulatus	1	2	-	-		1
Stenotomus caprinus	10	. 4	5	1	1	2
Peprilus burti	5	- 1	1.	11	2	3
Penaeus aztecus	8	3	2	2	6	. 4
Prionotus sp.	- 9	12	4	4	3	5.
Trachurus lathami	6	6	10	8	4	6
Trachypeneus sp.	14	10	3	6	8	7
Leiostomus xanthurus	. 2	8	-	12	-	8
Synodus foetens	15	14	6	3	7	9
Centropristis philadelphica	11	.9	9	5	. 5	10
Callinectes similis	4	5	8	9	10	11
Omoscion SP.	3	7	12	14	-	12
Upeneus parvus	7	13	13	7	9	13
Sigvonia brevirostris	-	16 ·	7	10	12	14 ·
Diplectrum bivittatum	16	11	11	- '	11	15
Anchoa sp.	13	15	15	<b>–</b> '	-	16
Fenaeus duorarum	19	21	<b>-</b>	-	-	17
Svacium SD.	20	17	17	15		18
	17	20	16	13	-	19
Bonaous set i ferus	12	18	-	- 1	-	20
Ftwarts Grossotus	18	19	14	-	-	21
Ariug folio	21		-		-	22
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# Table 3. Texas Coast - Major marine animals taken by depth and ranked by weight within each depth strata.

Density summaries expressed as pounds per hour for total finfish. brown shrimp, pink shrimp and white shrimp are shown on Figures 10-13 for the east delta; Figures 14-17 for the west delta; and Figures 18-21 for the Texas coast. The largest concentrations of finfish (primarily croaker) were found along the Matagorda Ship Channel.

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Shrimp catches east and west of the Mississippi River delta were generally light, with the highest concentration of brown shrimp appearing off the south Texas coast around Corpus Christi and Brownsville (Figure 19). No commercial concentrations of pink or white shrimp were noted during the cruise.

A profile of the hydrographic data collected by the CTD unit at each station was plotted; an example of these plots can be seen in Figure 22. The hypoxic area usually found off the coast of Louisiana was not as extensive as in the previous two years. Crabs were noted swimming on the surface in those areas where low bottom dissolved oxygen were recorded. The area was located between 92° 00' and 94 °00' west longitude in 5 - 10 fms.





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The State of Alabama made no trawls in its waters. Planned trawls were not completed when it was found that the state vessels were inadequate to pull the large trawls.

The State of Mississippi completed 1 trawl, with Gulf Coast Research Lab's R/V TOMMY MUNRO completing 27 trawls in state waters.

The State of Lousiana completed 42 trawls in its territorial waters.

#### REAL-TIME (QUICK REPORT) DATA

Weekly data summaries and plots of the three major species of shrimp and total finfish catch rates were mailed to the fishing industry and scientific personnel by the SEAMAP Coordinator from the GSMFC Office in Ocean Springs, in cooperation with the NMFS-Pascagoula Laboratory.

Two types of data were mailed, with 168 persons receiving the general information (plots of sampling stations, catch/hour and count/pound of pink, white and brown shrimp, and finfish, as well as summaries of dominant fish and hypoxic areas; in addition to this material, state and Federal fishery management agencies received detailed summaries of catches and hydrographic data. Examples of these materials are illustrated as Figures

Evaluation questionnaires were mailed from the Gulf States Marine Fisheries Commission in mid-September to the 168 persons receiving the general weekly data summaries. As of October 1, 86 responses (51 percent) had been received. Preliminary results of the survey, citing 51 percent of the recipients, are shown on Table 4.

A surprising intial result of the survey questionnaire indicates an average readership of 3.4 persons for each of the seven weekly data summaries, in spite of the limited summary mailings (at the direction of the GSMFC, recipients of the summaries were limited to only those who received them in 1983 or who specifically requested them.

#### NOAA NATIONAL OCEAN SERVICES/NMFS/SEAMAP STATUS AND TRENDS BENTHIC

#### SURVEILLANCE SURVEY

In response to a NMFS request to participate in the National Status and Trends Benthic Surveillance Survey, SEAMAP representatives recommended sampling sites for both this survey and the S & T Mussel Watch program. Sampling sites were selected in accordance with stated NOS criteria for both finfish and sediments, with croaker and spot selected as the primary and secondary target species.

Sites for the Mussel Watch Program were selected with the knowledge the collection and analysis of specimens would be done on a contractual basis to bids. The Benthic Surveillance Program was contracted to NMFS, with payment arranged to the states for participation in the collection of specimens, and untreated trawl nets.

Thirteen locations were selected for sampling (Figure 23) with three stations per site, and three replicate sediment grabs per station. Sampling personnel consisted of both state and Federal personnel, with sedimentologists Table 4. Preliminary results of 1984 real-time data survey questionnaire (10/8/84)

1. Residency and average number of persons reading each data summary: Florida Alabama Mississippi Louisiana Texas Other 8 9 37 19 3 10 Number of responses 9.1% 3.4% 11.4% 42.0% 21.6% Percent of total 10.2% 3.5 2.8 4.5 5.0 5.0 3.3 Average readers of each summary \* 2. Perceived ease of comprehending data summaries: Number of responses: 85 Summaries perceived as easy to understand: 68 (80 percent) Summaries perceived as somewhat easy to understand: 14 (16.5 percent) Summaries perceived as difficult to understand: 0 No answer indicated: 2 (2.3%). 3. Perceived usefulness of information: Summaries perceived as very useful: 33 (38.4%) Summaries perceived as somewhat useful: 45 (52.3%) Summaries perceived as not useful: 4 (4.7%) No answer indicated: 3 (3.5%) Summaries perceived as interesting only: 1 (1.1%). 4. Professional category: Commercial fishermen: 37 (44.0%) Seafood processors: 8 (9.5%) Scientists: 22 (26.3%) Other\*\*: 17 (20.2%). 5. Stated desire to see similar SEAMAP weekly data summaries in summer 1985: Wish to see similar summaries: 78 (92.9%) Do not wish to see similar summaries: 3 (3.6%) No answer indicated: 2 (2.4%) Wish to see a monthly summary instead: 1 (1.1%). 6. Stated interest in receiving similar data summaries of surveys on shrimp, bottomfish, and other species during other times of year: Very interested in receiving such summaries: 65 (76.5%) Somewhat interested in receiving such summaries: 13 (15.3%) Not interested in receiving such summaries: 4 (4.7%) No answer indicated: 3 (3.5%). 7. Major resources (species) indicated for similar data summaries: shrimp; snapper; seatrout; grouper; all finfish; mackerel; croaker; grouper; red drum; squid; groundfish. \* Among groups average = 4.4 percent; total projected readership: approximately 600. \*\* Major categories: marine advisory agents; educators; consultants.

Note: In addition to average number indicated in Question 1, one response indicated summarizing data for 450 members of a group; another, for 300 such members.

## Fig. 23 NOS/NMFS/SEAMAP Benthic Surveillance Study LOCATIONS AND SITES ALONG SOUTHERN ATLANTIC AND GULF OF MEXICO COASTS



# SITES

1

1

1

1

1

1

1

2

1

1

1

1

1

1

1

1

- B. Charleston Harbor
  C. Sapelo Sound
  D. St. Johns Riv. Estuary
  E. Charlotte Harbor
  F. Tampa Bay
  G. Apalachicola Bay
  H. Mobile Bay
  I. Mississippi Sound Round Island
- J. Mississippi Sound -Heron Bay
- K. Mississippi Riv. Delta
- L. Barataria Bay

A. Pamlico Sound

- M. Galveston Bay
- N. San Antonio Bay
- O. Corpus Christi Bay
- P. Lower Laguna Madre

and histopathologists from NMFS accompanying each state vessel.

Sampling has been completed for all sites except the Lower Laguna Madre, where vessel problems precluded sampling; NMFS and state personnel will attempt to sample this area again on October 15 and 16. Additionally, sediment samples were not obtained at the Round Island, MS site and neither finfish nor sediment samples were obtained from the east Mobile Bay sites because of inclement weather.

Specimens of finfish and sediments will be analyzed at the NMFS-Beaufort Laboratory for a variety of toxic compounds, hydrocarbons, organics and trace metals. Data from these analyses will be made available to the SEAMAP Program at the end of FY1985, and distributed to SEAMAP members at that time. An evaluation of the project, with suggestions for future sampling procedures and schedules is ongoing. A project summary will be issued at the completion of all surveying activity.

#### 1984 DATA MANAGEMENT ACTIVITIES

#### SEAMAP INFORMATION SYSTEM

Data from all SEAMAP survey activities are maintained and disseminated from the SEAMAP Information System, managed in conjunction with the NMFS data management system at National Space Technology Laboratories, NSTL Station, MS. Procedures for disseminating SEAMAP data are described in the SEAMAP Operations Plan: 1985 - 1990.

A total of 14 data requests have been received since the implementation of the system, with 10 of these processed as of October 1. Of the total requests, 12 of these were from SEAMAP Participants; 0 were from SEAMAP Cooperators; none from SEAMAP Investigators; and 2 from non-SEAMAP Investigators.

- Current system development needs and planned activities will be determined by the Data Coordinating Work Group, in conjunction with cooperative planning of the SEAMAP-South Atlantic Program.

#### SEAMAP ARCHIVING CENTER

Specimens for 1982 cruises sorted by the Polish Sorting Center have been archived and correlative data accessioned at the SEAMAP Archiving Center, managed in conjunction with the Florida Department of Natural Resources at St. Petersburg, FL. Approximately 5200 specimen lots have been processed, plus specimen lots of unidentified eggs and unidentified disintegrated materials. More than 4100 of the lots have been accessioned to date.

Some of the 1983 sorted specimen lots have been returned to NMFS-Miami Lab at this time; it is anticipated that all lots will be returned by winter 1985.

A total of 14 specimen requests have been processed to date, all of them since March, 1984. Of these, 2 requests have been from SEAMAP Participants, 8 from SEAMAP Cooperators, none from SEAMAP Investigators, and 4 from Non-SEAMAP Investigators. Twelve of these requests have been shipped at this date (1,169 specimen lots and three data logs). Two requests are on a delay status; three loans have been returned at this time. Current Archiving Center needs an planned activities are described in the FY1985 SEAMAP Summary Proposal (ttachment B). Loan policies and procedures will be determined by the Flinkton Work Group, during its October 15 meeting in New Orleans.

1984 SEAMAP PROGRAM MANAGEMENT

#### ADMINISTRATION

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1) Coordinator.

The position of SEAMAP Coordinator was funded equally in 1984 by GSMFC state/Federal funds and the Louisiana Sea Grant Program. Two to three days of each week were spent by the Coordinator at the GSMFC office in Ocean Springs; the remainder of each week was spent conducting SEAMAP business from the Coordinator's office at Louisiana State University.

The Subcommittee decided unanimously at the September 1984 SEAMAP Special Budget Meeting to reappoint the current Coordinator to the position for FY1985.

2) Subcommittee meetings.

Three meetings of the SEAMAP Subcommittee have been held since March 1984:

Joint SEAMAP-Gulf/SEAMAP-South Atlantic Budget Planning Meeting (Gulf Shores, AL: July 7, 1984). The SEAMAP-Gulf Chairman, Coordinator, NMFS representative and GSMFC Executive Director met with representatives of NMFS-SEFC, the SEAMAP-SA Chairman, Coordinator and a representative of the Atlantic States Marine Fisheries Commission to address funding needs of the two programs.

Participants agreed to recommend a total budget of \$817,000 for SEAMAP-Gulf, with \$183,000 for SEAMAP-SA. Funding is expected to be available from the approved FY1985 NMFS SEAMAP budget of \$1 million. Approved activities include surveys, data management, specimen archiving and program management.

Special Budget Meeting (New Orleans, LA: September 17-18, 1984). Members met to plan surveys, data and specimen management, and administrative activities and funding needs for FY1985. A proposed schedule of activities and required funding is shown on Table 5. The total proposed SEAMAP-Gulf of \$817,000 was approved, with recommendations for \$580,000 targeted for survey activities, \$167,000 for data and specimen management, and \$70,000 for program administration. (In addition, \$20,000 is available for SEAMAP program administration from existing State-Federal funds.)

Approved FY1985 survey activities include bottom trawls, plankton surveys, environmental data surveys, and special surveys (stock identification of red drum).

The FY1985 SEAMAP Summary Proposal (Attachment B) summarizes proposed stated, Federal and GSMFC activities.

Participant	Survey Budget	Other Budg	get
Florida	\$ 41,500	\$ 47,000	(specimen
Alabama	87,204	•	archiving)
Mississippi	110,952		
Louisiana	120,600		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
Texas	29,744		
NMFS	190,000	120,000	(data man- agement)
GSMFC		70,000	(adminis- tration)

Table 5. Proposed SEAMAP FY1985 Budget

TOTAL SEAMAP-Gulf BUDGET: \$817,000

Fall Subcommittee Meeting (New Orleans, LA: Oct. 16, 1984). Members met to approve the Summary Proposal, plan FY85 survey activities and schedules, review issues of the Archiving Center and Information System and set FY86 budget The Red Drum Work Group will meet to plan planning events. specimen collection plans later this month. The Plankton work group will gather detailed information on existing survey gaps for sampling design of this year's surveys, in addition to the planned summer and winter NMFS ichthyoplankton surveys. Priorities for sorting of plankton will be addressed by the Subcommittee in the future. The SEAMAP Curator was given additional latitude in specimen loan approval. The Shrimp/Groundfish Work Group will meet in January, prior to the next SEAMAP January meeting, to plan the Spring/Summer Shrimp/Groundfish Survey. The Environmental Work Group recommended continuation of present sampling strategy, with a request for additional definition of objectives by the Subcommittee.

Joint SEAMAP-Gulf/SEAMAP South Atlantic Meeting: (New Orleans, LA: October 16, 1984). Representatives of both SEAMAP groups and leaders of the work groups met to discuss the status of activities and mutual interests of the groups. Plans for a joint data management work group and joint management of the Archiving Center were reviewed. The groups approved the preparation of a joint yearly report to promote the program's accomplishments and activities, to be published at the conclusion of the fiscal year. The program Coordinators presented preliminary results of the September-October Benthic Surveillance Study. Further avenues of administrative and programmatic cooperation between the groups were encouraged.

3) Work group meetings.

 Environmental Work Group Meeting, St. Petersburg, FL: October 9, 1984.

The work group members and cooperators met at Florida Dept. of Natural Resources to resolve recurring problems with chlorophyll values from 1983 surveys. A protocol for analysis of the samples was developed and recommendations made for ensuring calibration and standardization of sampling instruments. Further definition of objectives from the Subcommittee was requested.

Plankton Work Group Meeting, New Orleans, LA: October 15, 1984.

The work group members met to develop long-term sampling strategies, sorting costs and needs, specimen archiving status and policies, and define FY85 surveys. The 1983 survey specimens have been returned from the Polish Sorting Center. A recommendation was approved for paired plankton samples from 1982-1984 surveys to be stored and maintained as station reference collections at the Gulf Coast Research Laboratory. The work group recommended a request to the Subcommittee for definition of resource priorities prior to setting additional surveys in FY85, and identified major sampling gaps in the program. A fall red drum plankton survey in Mississippi waters was recommended as an official activity.

#### PUBLICATIONS

- 1984 SEAMAP Marine Directory. Publication data: March 31, 1984. Distribution to all agencies and organizations listed in the directory.
- 2) SEAMAP Operations Plan: 1985-1990, Executive Summary. Publication data: July, 1984. Distribution to governors, state and federal legislators in the Gulf, members of legislative commerce and fisheries committees, Commissioners, TCC Chairman, other regional Executive Directors, Sea Grant Directors, Texas Marine Advisory Agents, Louisiana fishery agents, and researchers listed in the 1984 SEAMAP Marine Directory.

- 3) 1982 SEAMAP Biological and Environmental Atlas of the Gulf of Mexico.
  - Publication date: October 15, 1984. Distribution pending.
- 4) Trawling Gear Calibration Workshop Proceedings; in editing at present; winter 1985 publication anticipated,

#### FINANCIAL REPORT

Total allocations for the FY1984 SEAMAP-Gulf Program were: \$53,000. As of September 3, total expenditures were: \$51,922. A budget surplus of \$1,078.00 was returned for application to other State-Federal Fisheries Management Board expenses.

#### SEAMAP ADMINISTRATION

	FY84 BUDCET	ACTUAL EXPENSES	ENCUMBERED
Personnel	18,000.00	16,883.40	-
Coordinator	10,585.00	5,292.50	5,292.50
Office Supplies	600.00	756.46	· · · · <u>-</u>
Postage	1,200.00	1,580.62	. · -
Telephone	1,200.00	1,205.23	-
Copy Expense	2,500.00	2,127.43	-
Publication	1,400.00	217.33	_
Administrative Travel	2,915.00	1,292.63	1,622.37
SUBTOTAL	38,400.00	29,355.60	6,914.87
SEAMAP COMMITTEE SUPPORT			
Meeting Cost	1,600.00	1,011.12	-
Commission Travel	13,000.00	14,640.41	
SUBTOTAL	14,600.00	15,651.53	- · ·
GRAND TOTAL	53,000.00	45,007.13	6,914.87
FY84 FY84	Budget Expenses		53,000.00 -51,922.00
		· · · · · · · · · · · ·	+ 1.078.00

SUBTOTAL

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#### SEAMAP-Gulf Representatives, 1984

- Mr. Walter M. Tatum, Chairman Alabama Department of Conservation and Natural Resources
- Dr. Gary Matlock, Vice chairman Texas Parks and Wildlife Department
- Mr. Barney Barrett Louisiana Department of Wildlife and Fisheries
- Mr. Richard Waller Gulf Coast Research Laboratory (Mississippi)
- Mr. J. Alan Huff Florida Department of Natural Resources
- Dr. Walter R. Nelson National Marine Fisheries Service, Southeast Fisheries Center

#### SEAMAP Work Groups

Plankton Work Group:

Dr. Joanne Shultz, GCRL Dr. Rick Shaw, LSU Mr. Mark Leiby, FDNR Mr. Jim Ditty, LDWF

Shrimp/Groundfish Work Group:

Environmental Data Work Group:

Red Drum Work Group:

Data Coordination Work Group: Mr. C.E. Bryan, TPWD (Leader)

- Mr. Phil Bowman, LDWF
- Dr. Ed Klima, NMFS-Galveston
- Mr. Elmer Gutherz, NMFS-Pascagoula
- Mr. Steve Heath, ADCNR
- Dr. Scott Nicols, NMFS-Miami

Dr. Warren Stuntz, NMFS-Pascagoula (Leader) Mr. Ken Haddad, FDNR Mr. Tom Leming, NMFS-Bay St. Louis

Dr. Bill Richards, NMFS-Miami Lab (Leader)

- Mr. John Roussel, LDWF
- Dr. Tom McIlwain, GCRL (Leader)
- Mr. Larry McEachron, TPWD
- Mr. William Fable, NMFS-Panama City
- Mr. Joey Shepard, LDWF
- Mr. John Hawk, ADCNR
- Mr. Mike Murphy, FDNR

Mr. Ken Savastano, NMFS-Bay St. Louis (Leader) Dr. Warren Stuntz, NMFS-Pascagoula Dr. Bill Richards, NMFS-Miami Mr. C.E. Bryan, TPWD Mr. Walter Tatum, ADCNR

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### ATTACHMENT B

# SEAMAP-GULF SUMMARY PROPOSAL: FY85

In accordance with procedures approved in the <u>SEAMAP Operations</u> <u>Plan: 1985-1990</u>, the SEAMAP Subcommittee requests approval by the Technical Coordinating Committee and the Gulf States Marine Fisheries Commission of the following proposed SEAMAP-Gulf activities for FY1985.

#### I. BUDGET

A total proposed SEAMAP-Gulf budget of \$600,000 is requested, with \$580,000 of this sum requested from additional State-Federal funds as anticipated from the approved congressional allocation to the SEAMAP Program; the remaining \$20,000 consists of previously approved existing State-Federal Fisheries Management Board funds. The Subcommittee has approved the following distribution of SEAMAP-Gulf funds:

PARTICIPANT	 SURVEY BUDGET	0	THER BUDG	ET	l.,
Florida	 \$ 41,500	\$	47,000	(specimen	[
Alabama	87,204	, , , , , , , , , , , , , , , , , , ,		archiving)	1.
Mississippi	110,952				
Louisiana	120,600				1
Texas	29,744				
NMFS	190,000		120,000	(data man-	
GSMFC			90,000	(administra-	ł
•				tion, inclu- ding \$20,000 existing fu	- 0 nds,

#### **II. ACTIVITIES**

Activities and events approved in September, 1984 by the Subcommittee include bottom trawls, plankton surveys, environmental data surveys, and special surveys (stock identification of red drum). Specific program goals, objectives and tasks are detailed in the Operations Plan.

General survey and program management activities of the individual SEAMAP participants are described below.

- ] تل ا [and a second [\_\_\_\_] e tr. waannii . . ا السب <u>í</u> 5  A. FLORIDA: Sampling in state territorial waters

- 1. Establishment and maintenance of SEAMAP Archiving Center, including required staff functions, and associated dissemination of selected sorted SEAMAP ichthyoplankton specimens through loans to approved agencies and organizations.
- Participation in plankton and environmental data sampling duringthe Spring-Summer Shrimp/Groundfish Survey.
- 3. Participation in red drum stock identification study.
- 4. Submission of survey data to SEAMAP Information System.
- 5. Submission of survey plankton specimens to SEAMAP Archiving Center.
- 6. Representation on SEAMAP-Gulf Subcommittee,
- 7. Representation on appropriate SEAMAP work groups.
- B. ALABAMA: Sampling in state territorial waters
  - Participation in the Spring-Summer Shrimp/Groundfish Trawling Survey, with concomitant sampling of plankton and environmental data.
  - 2. Participation in red drum stock identification study.
  - 3. Submission of survey data to SEAMAP Information System.
  - 4. Submission of survey plankton to SEAMAP Archiving Center.
  - 5. Representation on SEAMAP-Gulf Subcommittee.
  - 6. Representation on appropriate SEAMAP work groups.

C. Mississippi: Sampling in state territorial waters and FCZ

- Participation in Spring-Summer Shrimp/Groundfish Trawling Survey, with concomitant sampling of plankton and environmental data.
- 2. Summer-Fall Red Drum Plankton Survey, with concomitant environmental data sampling.
- 3. Participation in red drum stock identification study.
- -4. Submission of survey data to SEAMAP Information System.
  - 5. Submission of survey plankton to SEAMAP Archiving Center.
  - 6. Design and implementation of shipboard micro-computer system for field data collection and accession of data into SEAMAP data bank.
  - 7. Storage and maintenance of 1982-84 duplicate SEAMAP plankton samples and invertebrate plankton collections returned from Polish Sorting Center.
  - 8, Representation on SEAMAP-Gulf Subcommittee.
  - 9. Representation on appropriate SEAMAP work groups.

#### D. LOUISIANA: Sampling in state territorial waters

3-

- Participation in Spring-Summer Shrimp/Groundfish Trawling Survey, with concomitant sampling of plankton and environmencal data, to 5 fathoms.
- 2. Participation in Fall Plankton Survey, with concomitant sampling of environmental data, to 5 fathoms.
- 3. Seasonal shrimp/groundfish trawling surveys, with concomitant sampling of environmental data, in the central coastal area to 15 fathoms.

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#### D. LOUISIANA (continued)

- 4. Participation in red drum stock identification study.
- 5. Submission of survey data to SEAMAP Information System.
- 6. Submission of survey plankton to SEAMAP Archiving System.
- 7. Representation on the SEAMAP-Gulf Subcommittee.
- 8. Representation on appropriate SEAMAP work groups.
- E. TEXAS: Sampling in state territorial waters
  - Participation in Spring-Summer Shrimp/Groundfish Trawling Survey, with concomitant sampling of plankton and environmental data.
  - 2. Participation in red drum stock identification study.
  - 3. Submission of survey data to SEAMAP Information System.
  - 4. Submission of survey plankton to SEAMAP Archiving Center.
  - 5. Representation on the SEAMAP-Gulf Subcommittee.
  - 6. Representation on appropriate SEAMAP work groups.
- F. NATIONAL MARINE FISHERIES SERVICE: Sampling in FCZ
  - 1. Establishment and maintenance of the SEAMAP Information System for the processing and management of collected SEAMAP survey data, including required staff functions, and associated dissemination of SEAMAP data to approved requestors.
  - 2. Participation in the Fall 1984 Shrimp/Groundfish Trawling Survey in the north central Gulf of Mexico.
  - 3. Participation in the Fall-Winter Plankton and Environmental Survey.
  - 4. Participation in the Winter Acoustic Survey for Coastal Herrings
  - 5. Transshipment of SEAMAP plankton samples to and from the Polish Sorting Center, and transmittal of the sorted specimens to the SEAMAP Archiving Center.
  - 6. Provision of paired (duplicate) plankton samples to the Gulf Coast Research Lab for storage, maintenance and distribution.
  - 7, Participation in the Spring-Summer Shrimp/Groundfish Trawling Survey in the northern Gulf of Mexico.
  - 8, Provision, as available, of a satellite-communications system to transmit real-time data during the Spring-Summer Shrimp/ Groundfish Trawling Survey.
  - 9. Submission of survey data to the SEAMAP Information System.
  - 10. Submission of survey plankton to the SEAMAP Archiving Center.
  - 11. Representation on the SEAMAP-Gulf Subcommittee.
  - 12. Representation on appropriate SEAMAP work groups.
- G. GULF STATES MARINE FISHERIES COMMISSION: Program management
  - Coordination of surveys, data management and specimen archiving; planning and conduct of approved Subcommittee and work group meetings; preparation and editing of approved documents; development of approved workshops.
  - Coordination and disbursement of funds approved for program administration.

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## G. GULF STATES MARINE FISHERIES COMMISSION (continued)

- 1. Promotion of SEAMAP Program and public relations development.
- 2. Distribution of approved SEAMAP documents and publications.
- 3. Coordination of budget planning and State-Federal cooperative agreements submission.
- 4. Coordination of program evaluation.



# Gulf States Marine Fisheries Commission

MBER ALAB	STATES BAMA RIDA	P.O. BOX 726 OCEAN SPRINGS, MS. 39564
LOUIS MISSIS TEX	SIANA SSIPPI KAS	(601)875-5912
	DATE: September 11, 1984	· ·
-	TO: Persons Interested in SEAMAP	
-	FROM: Walter M. Tatum, SEAMAP Chairman	
	SUBJECT: Evaluation of 1984 SEAMAP Quick-Time Data Summaries	
	As in 1982 and 1983, the SEAMAP Program has this year attempted to respond to industry and others by supplying weekly information on shrimp and bottomfish cate through July 28, 1984. More than 150 persons requested the data summaries for th	to the needs of the fishing thes for the period from June 6 is period.
	We hope this information has been useful to you, but we can only know for su Through this short questionnaire, we will try to determine how to best serve your from your busy schedule to respond to the following questions and return the ques self-addressed stamped envelope. Your assistance is very much appreciated.	are by asking you directly. r needs. Please take the time stionnaire to us in the enclosed.
:	<ol> <li>What is your state of residence:FloridaAlabamaMisTexasOther (please specify):</li> </ol>	ssissippiLouisiana
	<ol> <li>How many commercial fishermen and/or other persons directly involved with con yourself, read your copies of the 1984 SEAMAP Data Summaries (average number</li> </ol>	nmercial fisheries, <u>including</u> of readers per copy):
	<ol> <li>How many commercial fishermen and/or other persons directly involved with con yourself, read your copies of the 1984 SEAMAP Data Summaries (average number</li> <li>How did you find the information:</li> </ol>	nmercial fisheries, <u>including</u> of readers per copy):
	<ul> <li>2. How many commercial fishermen and/or other persons directly involved with conyourself, read your copies of the 1984 SEAMAP Data Summaries (average number</li> <li>3. How did you find the information: <ul> <li>Easy to understand</li> <li>Somewhat easy to understand</li> <li>Difficult to understand</li> </ul> </li> </ul>	nmercial fisheries, <u>including</u> of readers per copy):
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#### ATTACHMENT D

## DOCUMENTS CITING SEAMAP DATA

- Poffenberger, John R. Estimated impact of ex-vessel brown shrimp prices and values as a result of the Texas Closure regulation. Mar. Fish. Rev., Sept.-Oct. 1982, 44(9-10): 38-43.
- Matthews, Jeff. Relative abundance and size distribution of commercially important shrimp during the 1981 Texas Closure. Mar. Fish. Rev., Sept.-Oct. 1982, 44(9-10): 5-15.
- 3. Matthews, Jeff. Abundance and size distribution of <u>Penaeus</u> spp. shrimp in the northern and northwestern Gulf of Mexico during the 1982 Texas Closure Period. NOAA Tech. Mem. NMFS-SEFC 109, Dec. 1982.
- Poffenberger, John R. Estimated impact of the Texas Closure regulations on ex-vessel prices and values, 1981 and 1982. NOAA Tech. Mem, NMFS-SEFC 111, Dec. 1982.
- 5. Nichols, Scott. Impacts of the 1982 and 1982 Texas Closure on brown shrimp yields. NOAA Tech. Mem. NMFS-SEFC 110, Jan. 1983.
- 6. Nichols, Scott, Impacts of the combined closure of the Texas territorial sea and the FCZ on brown shrimp yields. Report to the Gulf of Mexico Fishery Management Council, Jan. 1984.
- Sherman, Kenneth, R. Lasker, W. Richards, and A. W. Kendall, Jr, Ichthyoplankton and fish recruitment studies in large marine ecosystems, Mar. Fish. Rev., Oct.-Nov.-Dec. 1983, 45(10-11-12): 1-25.
- 8. Matthews, Jeff. Relative abundance and size distribution of <u>Penaeus</u> shrimp based on samples collected during the 1983 SEAMAP/ Texas Closure Survey in the northern and northwestern Gulf of Mexico. Report to the Gulf of Mexico Fishery Management Council, Jan, 1984.
- Leming, Thomas D. and W. E. Stuntz. Zones of coastal hypoxia revealed by satellite scanning have implications for strategic fishing. Nature 310(5973):136-138, 12 July 1984.
- 10. Sheridan, Peter, D. Trimm and B. Baker. Reproduction and food habits of seven species of northern Gulf of Mexico fishes In Press: Mar. Sci 27 (1984).

