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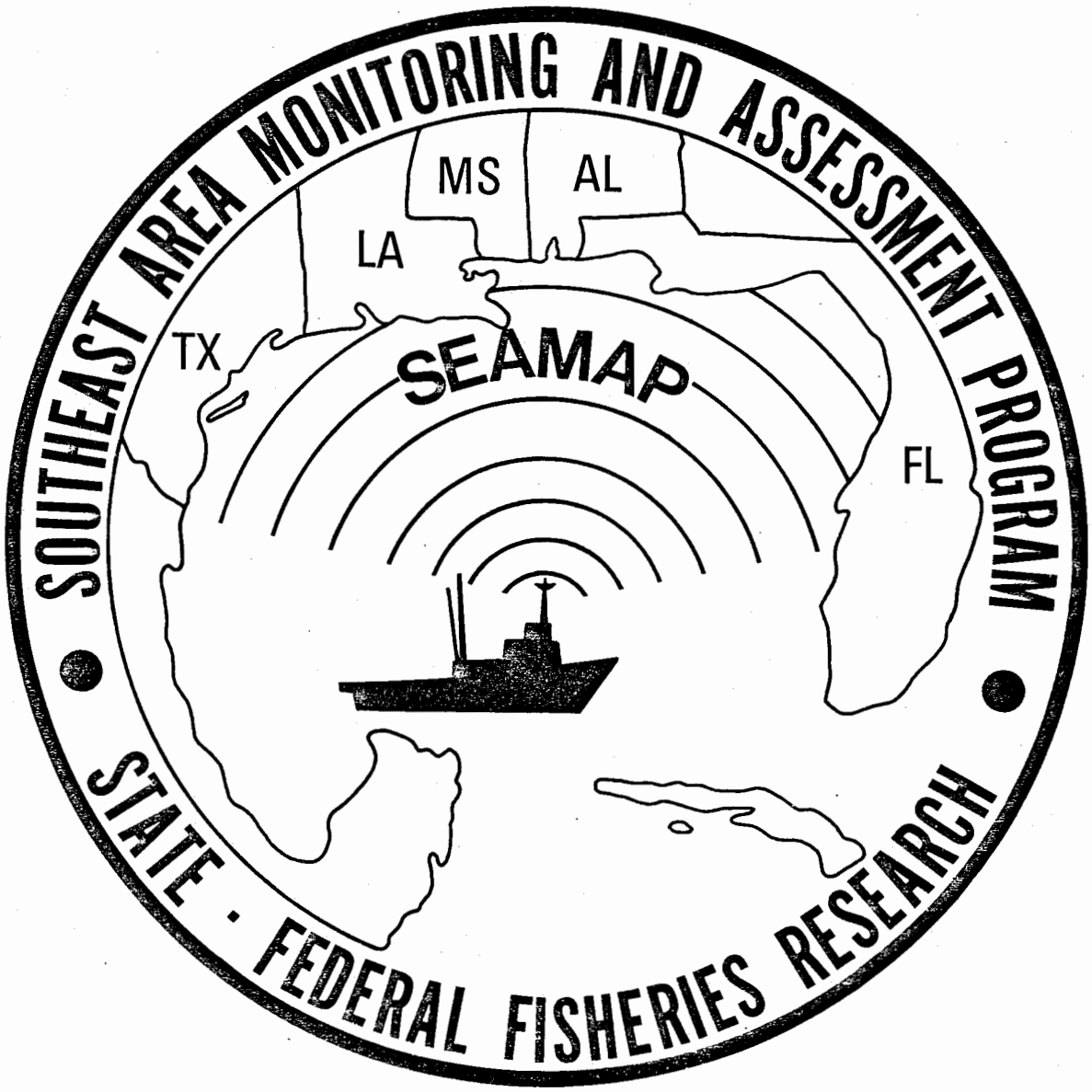
Simpson

SEAMAP
1983



1983 SEAMAP

REPORT TO THE

TECHNICAL COORDINATING COMMITTEE

OF THE

GULF STATES MARINE FISHERIES COMMISSION

Prepared by

SEAMAP Subcommittee

Gulf States Marine Fisheries Commission

MEMBER STATES
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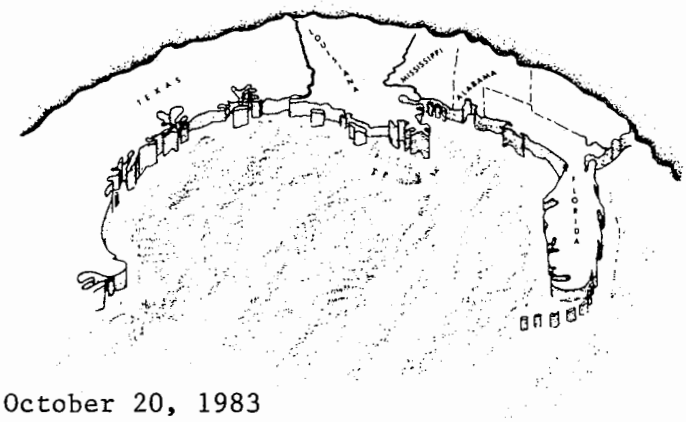

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DATE: October 20, 1983

TO: Technical Coordinating Committee

FROM: Walter Tatum
SEAMAP Chairman

SUBJECT: 1983 SEAMAP Report to the Technical Coordinating Committee

The SEAMAP program has successfully completed the second year of SEAMAP activities in the Gulf of Mexico. This report is designed to inform the Technical Coordinating Committee (TCC) of the 1983 SEAMAP activities and the proposed activities for 1984.

As Chairman of the Subcommittee, I would like to thank the members of the Subcommittee, work group members and the staff of the Gulf States Marine Fisheries Commission for their time and hard work in making this second year of SEAMAP possible.

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INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) has completed its second year of SEAMAP activities in the Gulf of Mexico. The SEAMAP goal has remained the same since the Program was initiated by the Gulf States Marine Fisheries Commission's (GSMFC) Technical Coordinating Committee (TCC) in December 1981. That goal is to collect, manage, and disseminate fishery-independent data in coordination with state/federal/university marine agencies in the Gulf of Mexico.

The SEAMAP Program has been successful in organizing, initiating, and carrying out SEAMAP activities for 1983. This report is the third in a series of annual SEAMAP Subcommittee reports to the TCC. It is intended to inform the TCC of the SEAMAP accomplishments from March 1983 to October 1983 and proposed SEAMAP activities for 1984.

1983 SEAMAP SURVEY ACTIVITIES

During the March 14, 1983 SEAMAP meeting in Austin, Texas, the SEAMAP Subcommittee began to coordinate the spring SEAMAP surveys in the Gulf of Mexico. The Subcommittee firmly agreed that the 1983 surveys should be similar to the 1982 surveys in order to begin establishing a SEAMAP data base in the Gulf. The 1983 survey activities would consist of a May oceanic ichthyoplankton survey and a June-July shrimp and bottomfish survey. Ichthyoplankton would be collected during the shrimp and bottomfish survey. An environmental survey would be carried out simultaneously with both the oceanic ichthyoplankton and the shrimp and bottomfish surveys.

In addition to these surveys the Subcommittee agreed to coordinate a 1983 Fall ichthyoplankton survey across the northern Gulf.

ICHTHYOPLANKTON SURVEYS

The 1983 ichthyoplankton surveys were divided into two separate survey activities in the Gulf (Figure 1). The first ichthyoplankton survey was a May oceanic survey to sample plankton between 50 fathoms to the United States Fishery Conservation Zone (FCZ). The second survey was associated with the June-July shrimp and bottomfish survey from Cape St. George, Florida, to Brownsville, Texas.

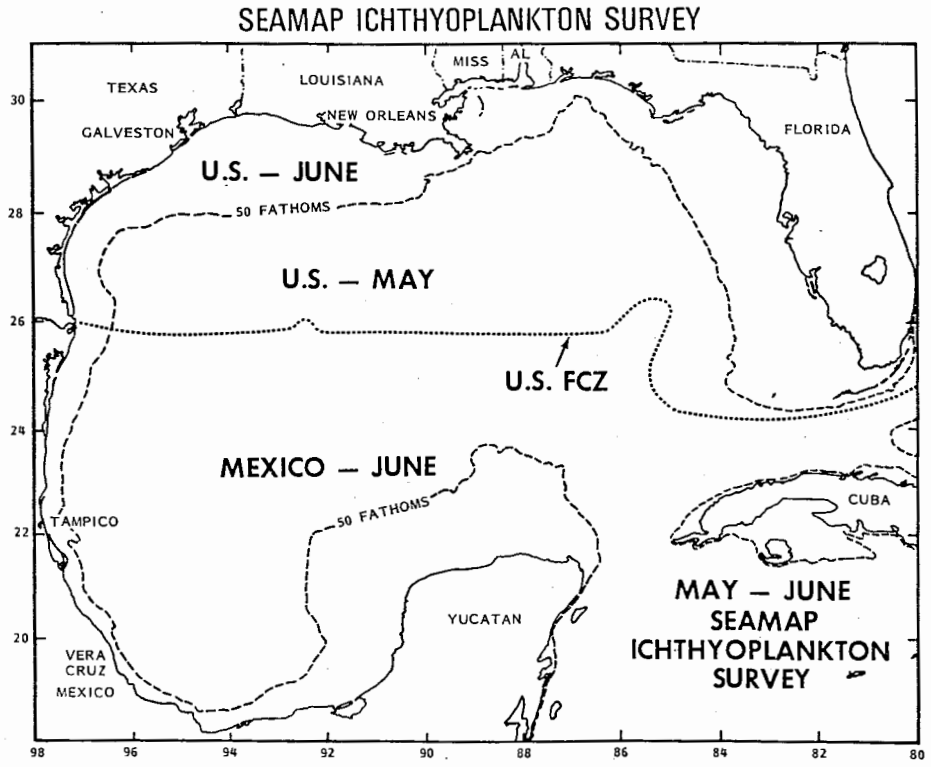

Figure 1. The May-June SEAMAP Ichthyoplankton Survey was composed of two separate surveys. The May oceanic survey included waters from the U.S. 50 fathom curve to the Fisheries Conservation Zone (FCZ). The June inshore survey included U.S. waters inside 50 fathoms. Mexico surveyed their waters in June.

A) Oceanic Ichthyoplankton Survey

The May oceanic ichthyoplankton survey objective was to collect ichthyoplankton samples for distribution and abundance studies of recreationally and comercially important fishes in the Gulf inside the United States FCZ. The Southeast Fisheries research vessel OREGON II would survey waters inside the U.S. FCZ and the Mexican research vessel ONJUKU, from the Instituto Nacional de Pesca (INDEP) of the Mexican government, would survey its waters. Additional objectives of the survey would be to collect environmental data over the survey area and do comparative bongo tows between the two vessels.

Plankton samples were taken at preselected stations with a 61 cm diameter bongo with a .333 micron mesh and a 1 m by 2 m neuston .947 micron mesh net. Bongo tows were made using a double oblique method with a towing speed varying between 1.5 and 2.0 knots with a setting rate of 50 m per minute and a retrieval rate of 20 m per minute. Neuston tows were 10 minutes long with half the frame submerged.

A rendezvous with the RV ONJUKU was made on May 22 at 26°N and 87°W where 10 comparative bongo and neuston tows were made. Catch comparisons will be made subsequent to sorting and identification of samples from the respective vessels.

One hundred thirty-three stations were completed, 22 of which were XBT drops only (Figure 2). Plankton samples were shipped to the National Marine Fisheries Service Miami Laboratory in June. From Miami, all station data and sample data were entered into the computer and a master station list was produced which included calculations of volume of water filtered, depth of tow and standard haul factors. One set of samples from each bongo tow was packed and shipped to the Polish Sorting

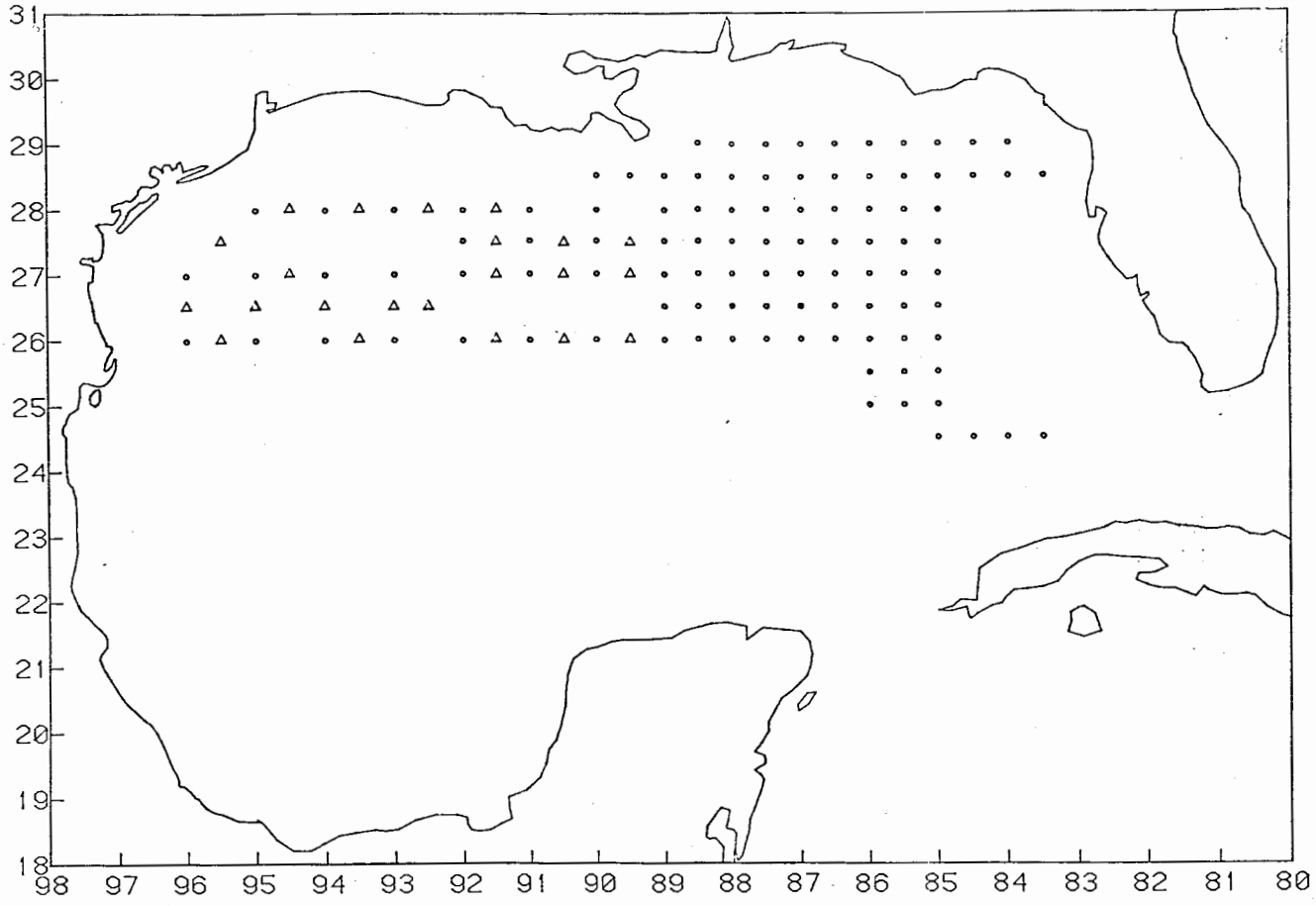

FIGURE 2: Offshore ichthyoplankton stations made by the OREGON II during the May oceanic ichthyoplankton SEAMAP survey

Center in Poland to be identified down to family. The remaining set of bongo samples were retained in Miami for two purposes -- first, to provide a backup in the event samples were lost or damaged in shipment to or from Poland, and second, these samples will be split and aliquots made available to those interested in the zooplankton.

B) Inshore Ichthyoplankton Survey

The June ichthyoplankton survey was in association with the June shrimp and bottomfish survey. The major objective of this survey was to collect samples for distribution and abundance studies of recreational and commercially important fishes of the northern Gulf of Mexico. As in the oceanic ichthyoplankton survey, environmental data was collected at each ichthyoplankton station.

The survey area was those waters inside 45 fathoms from Cape St. George, Florida, to Brownsville, Texas, between June 1 and July 14. Survey design depended somewhat upon the trawl stations selected for the shrimp and bottomfish survey. Ichthyoplankton stations were made regardless of time, and were approximately 30 miles apart. Stations that were close to a defined trawl station were moved to the trawl station site to save time. As a cooperative effort each state sampled the bays and passes of their respective waters with bongo nets, while the larger vessels, OREGON II, TOMMY MUNRO, SUNCOASTER and WESTERN GULF, were sampling offshore (Figure 3). The State of Florida only sampled for ichthyoplankton and environmental data off central and south Florida since its vessel, HERNAN CORTEZ, was not equipped for trawling.

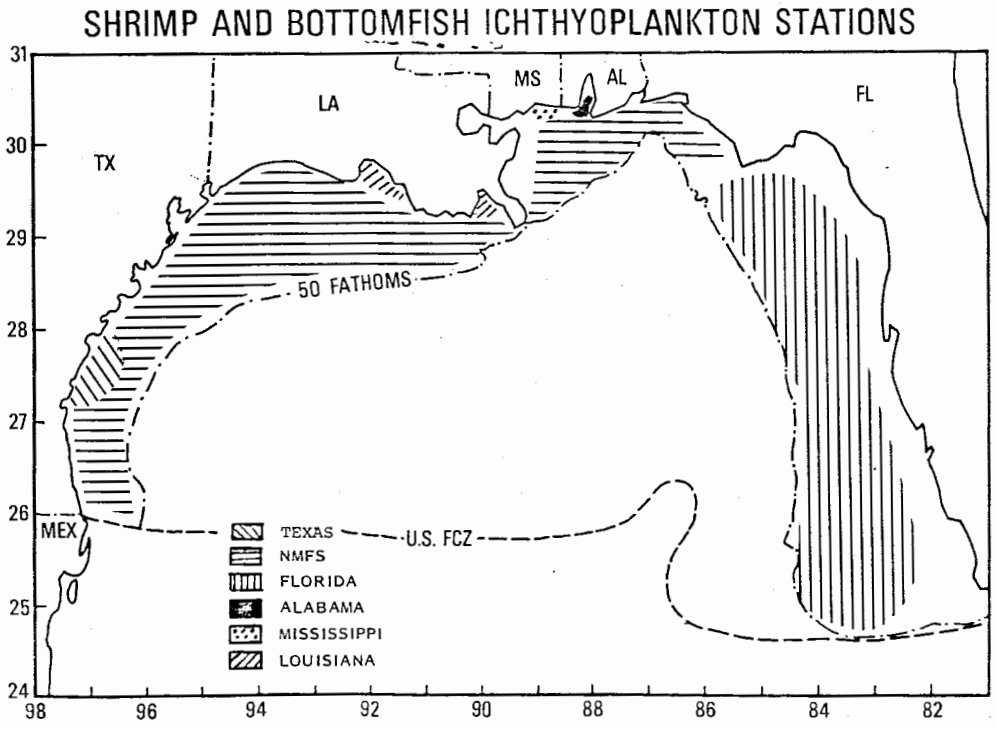

Figure 3. Shrimp and bottomfish survey area covered by the states and National Marine Fisheries Service between June 1 and July 14, 1983.

Fifty-seven bongo and neuston samples were taken from stations integrated into the shrimp and bottomfish cruise track.

C) Fall Ichthyoplankton Survey

During the March 1983 SEAMAP meeting the Subcommittee discussed coordination of a fall ichthyoplankton survey across the Northern Gulf of Mexico. The primary objective of this survey would be to obtain information on the spawning stocks of finfish, especially sciaenids, in the Gulf.

The National Marine Fisheries Service (NMFS) Southeast Fisheries Center vessel, OREGON II, will piggyback an ichthyoplankton survey on their annual fall groundfish survey from October 11 to November 15 from Perdido Bay, Florida, to Trinity Shoals, Louisiana. Also the OREGON II will be conducting an ichthyoplankton survey in December from the 100 fathom curve to the U.S. FCZ across the Gulf of Mexico. Mexico will conduct an ichthyoplankton survey during October and November in their waters.

The States of Alabama, Mississippi and Louisiana have agreed to coordinate survey activities with the OREGON II during the fall groundfish survey. Texas would not be able to participate because the survey does not extend to Texas and they are without a research vessel at this time. Also, Florida would not be able to participate because of vessel problems. The states that would participate will pull 30 cm bongos in their respective waters. Time frames of when the OREGON II will be off each participating state have been distributed so that the smaller state vessels can coordinate survey activities with the OREGON II.

SHRIMP AND BOTTOMFISH SURVEY

The major objectives of the SEAMAP shrimp and bottomfish survey were to monitor size and distribution of penaeid shrimp and to aid in an

evaluation of a closed shrimping period in Texas waters; also to provide information on shrimp and groundfish stocks across the Northern Gulf of Mexico. Additional objectives were to collect hydrographic and environmental data, sample for ichthyoplankton throughout the survey area and to do comparative trawl tows between research vessels.

The shrimp and bottomfish trawl survey occurred between June 1 and July 14, from Cape St. George, Florida, to Brownsville, Texas. Trawl stations were randomly selected from those waters inside 45 fathoms. The research vessels TOMMY MUNRO, WESTERN GULF, OREGON II and SUNCOASTER operated offshore at night using a 40 foot shrimp trawl (See Figure 4). Sample sites encompassed a 1 fathom depth stratum with a maximum tow time of 30 minutes and a minimum tow time of 10 minutes. All tows were made perpendicular to the depth contours in order to sample the entire

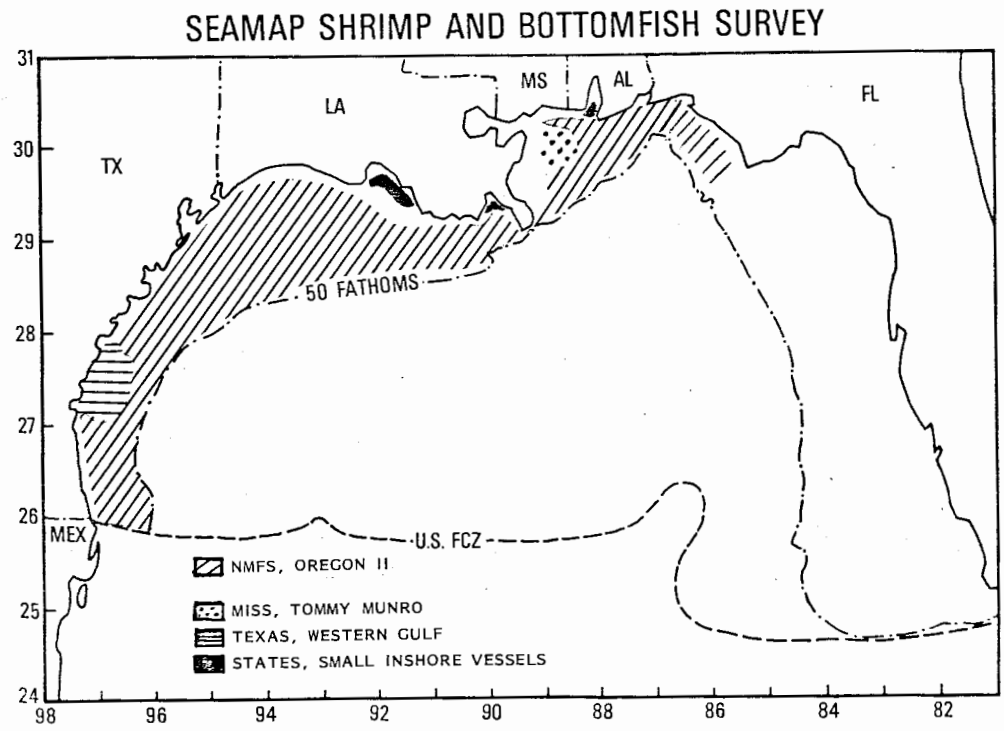

Figure 4. Shrimp and bottomfish survey area covered by the states and National Marine Fisheries Service between June 1 and July 14, 1983.

depth at each station. Some stations required consecutive tows to cover the entire depth stratum. The smaller state vessels coordinated their sampling activity with the larger vessels by trawling with 16 foot trawls in their respective waters.

All catch data and related information were recorded on data sheets. Samples of shrimp and finfish were returned to the laboratory for analysis.

Hydrographic and environmental data were collected during the survey and results can be found in the environmental survey section.

The OREGON II collected shrimp and bottomfish samples from 195 randomly selected trawl sites across the survey area.

The State of Mississippi's research vessel TOMMY MUNRO made 14 trawl stations and 10 ichthyoplankton stations off the Chandeleur Islands. The FRS OREGON II met with the R/V TOMMY MUNRO on June 8th to conduct comparative gear tows at 6 stations.

The M/V SUNCOASTER (NMFS charter vessel) made 34 trawl and 6 ichthyoplankton stations east of the Mississippi River and 40 trawl stations west of the Mississippi River. The M/V SUNCOASTER met with the FRS OREGON II on June 15th to conduct comparative gear tows at 6 stations.

The State of Texas' research vessel R/V WESTERN GULF made 40 trawl stations between Matagora Bay and Mansfield Pass, Texas, in 5 to 45 fathoms. There were no comparative trawl stations scheduled between the R/V WESTERN GULF and the FRS OREGON II.

A) Real-Time SEAMAP Data

In 1982 real-time data transmissions started out as a National Marine Fisheries Service (NMFS) commitment to SEAMAP do distribute SEAMAP survey catch data within one week of collection to the fishing industry (Figure 5). The NMFS in cooperation with the National Aeronautics and Space Administration installed a data communications terminal aboard the FRS 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 FRS OREGON II to transmit daily catch rates and environmental data to Mississippi Laboratories, Bay St. Louis, Mississippi. The data were then put on the Burroughs computer system in Seattle, Washington. This system operated

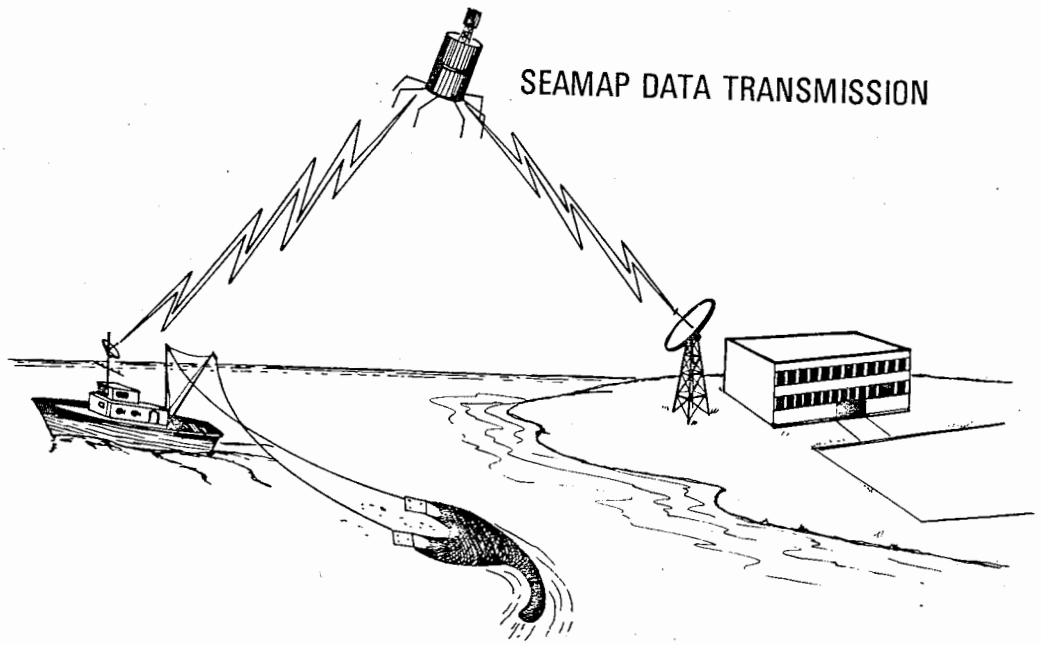

Figure 5. Illustration of the transfer of real-time data from research vessel, via satellite, to a land station.

in conjunction with the Argos satellite system which was placed on the research vessels TOMMY MUNRO, WESTERN GULF and SUNCOASTER.

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 office of the Gulf States Marine Fisheries Commission in Ocean Springs, Mississippi.

Questionnaries were sent out of the Gulf States Marine Fisheries Commission's office to those persons who received the real-time data mail outs. From the questionnaire 95% of those persons who received the data indicated a desire to continue receiving the data on a real-time basis.

ENVIRONMENTAL SURVEY

The environmental survey was carried out in conjunction with the ichthyoplankton and shrimp and bottomfish surveys (See Ichthyoplankton and Shrimp and Bottomfish sections for survey areas and times frames). The objective of this survey was to collect data on oceanographic phenomena that may affect the distribution and abundance of marine animals relative to their environment.

Equipment needed to sample dissolved oxygen levels, chlorophyll concentrations, salinity and temperature was provided to some of the states by NMFS as needed, along with environmental data forms. Station locations of those vessels can be seen in Figure 7.

During the oceanic ichthyoplankton survey environmental data were collected at each ichthyoplankton station. Twenty-seven temperature and salinity profiles were obtained with the CTD unit which was operational for the first 12 days of the cruise.

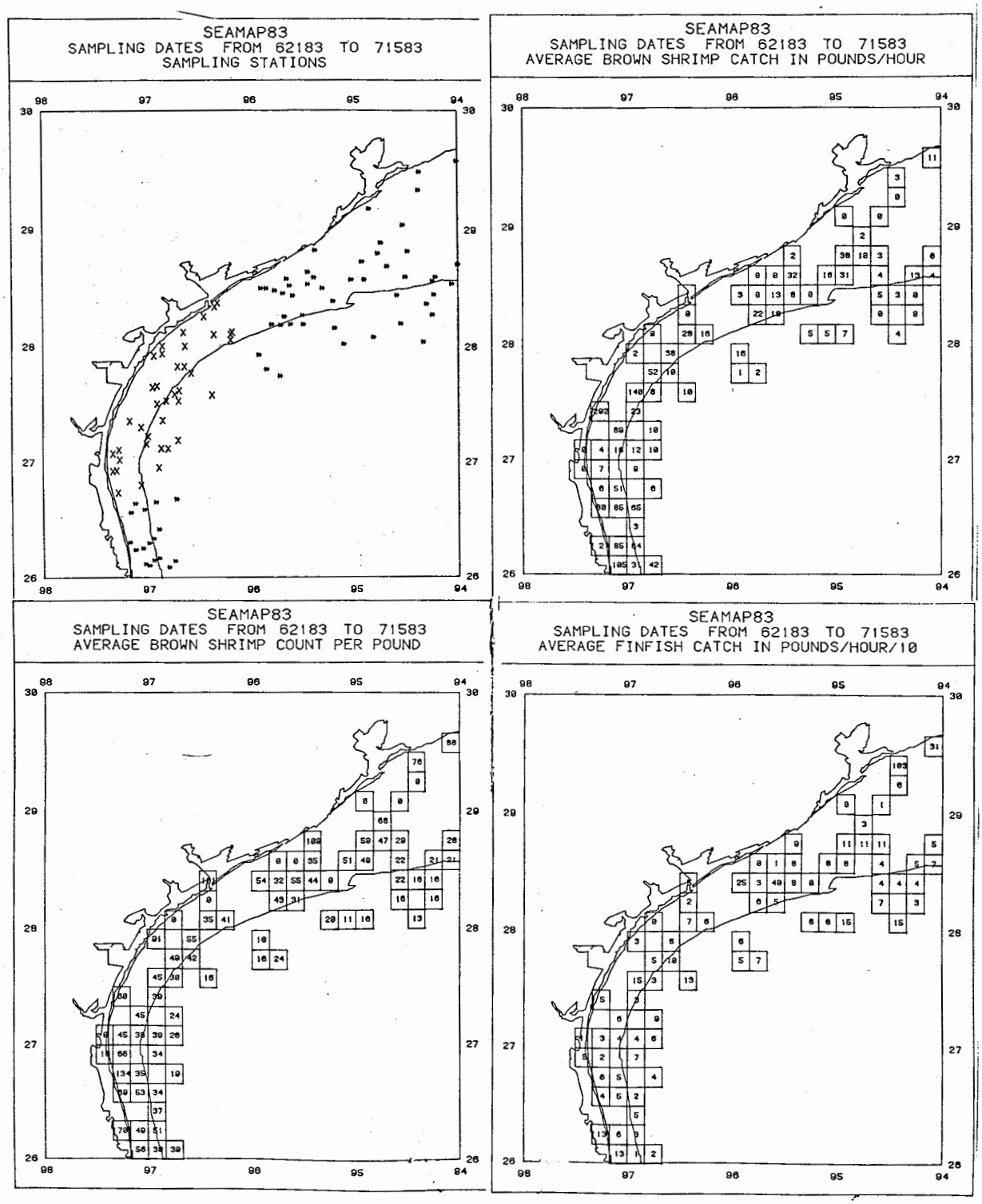

Figure 6. Illustration of an example of a real-time data mail out off Texas. This figure shows the sampling stations, average brown shrimp catch in pounds/hour, average brown shrimp catch in pounds/hour, average brown shrimp count/pound and average finfish catch in pounds/hour/10 for the period of June 21, 1983 to July 15, 1983.

Figure 7 is incomplete at this time

Figure 7. Location of environmental stations by vessel for the period between April and July, 1983.

During the oceanic ichthyoplankton survey environmental data were collected at each ichthyoplankton station. Twenty-seven temperature and salinity profiles were obtained with the CTD unit which was operational for the first 12 days of the cruise.

Environmental data collections were returned to Pascagoula for interpretations. Collections included 115 XBT drops (for Marine Minerals Management Service), 219 salinity samples, 246 fluorometer readings, 154 chlorophyll filtrations and 300 dissolved oxygen measurements. Also, 738 surface temperature, salinity and chlorophyll readings were taken for satellite remote sensing comparisons.

During the shrimp and bottomfish survey selected hydrographic data were taken before the start of each station. A conductivity, temperature and depth unit (CTD) was used to collect salinity, and temperature data versus depth. Water for dissolved oxygen was collected

in Niskin bottles attached to the CTD's rosette sampler. Samples were taken from the surface, midwater, and bottom, out to a maximum sample depth of 200 meters for oceanic ichthyoplankton stations. Daylight hour samples also included secchi disk and water color. All chlorophyll samples were taken with a continuous flow-through fluorometer from surface waters only. A filtered series of selected chlorophyll samples were taken from Louisiana and Texas to calibrate the flow-through unit.

One hundred and ninety-five Vanveen bottom grab samples were obtained throughout the cruise. Samples weighing approximately 500 grams were labeled and frozen. They will be analyzed for sediment characteristics and organic content at the Galveston Laboratory.

Upon receipt of the data from the various vessels, each data form was hand edited. The data were inserted into the computer and preliminary data listings would be distributed to each SEAMAP Subcommittee member upon request. Chlorophyll data will not be entered into the computer until around the end of October. Preliminary plots of surface, midwater and bottom temperature, salinity and dissolved oxygen are available upon request.

A small hypoxic area was found off the coast of Louisiana during the shrimp and bottomfish survey. This area occurred farther offshore than the hypoxic area found last year. Bottom oxygen levels were less than 2 ppm with surface temperatures averaging 29°C. Catch rates were considerably lower than in other adjacent areas. A further check of dissolved oxygen along the 5 fm contour, at 20 mile intervals, between 94°00'W. and 90°00'W. Long., showed no stations with a bottom oxygen level below 2 ppm.

1983 SEAMAP ACTIVITIES

In addition to survey activities the SEAMAP Subcommittee has been working on a number of other SEAMAP activities for 1983. These activities include the SEAMAP Marine Directory, SEAMAP Gear Workshop, SEAMAP Atlas and the SEAMAP Operational Plan.

MARINE DIRECTORY

During the March 1982 meeting of the GSMFC the SEAMAP Subcommittee recommended, and the TCC agreed, that a SEAMAP Marine Directory should be developed for 1983. The Directory would include a list of vessel schedules and a description of planned marine research activities for state, federal and university agencies in the Gulf. The main objective of this directory is to prevent the redundant and wasteful data collection by informing participating agencies of the ongoing research programs in the Gulf of Mexico.

Mr. Fred Diaz of the Southeast Fisheries Center, Mississippi Laboratories was asked by the Subcommittee to develop the Directory. Mr. Diaz has completed the Directory as of May, 1983, and separate published copies have been distributed. Copies can be obtained by contacting the GSMFC office.

SAMPLING GEAR WORKSHOP

In the March 1982 GSMFC meeting the Subcommittee recommended and the TCC agreed that a one day sampling gear workshop should be held during the March 1983 GSMFC meeting in Austin, Texas. The Subcommittee asked Mr. John Watson of the Southeast Fisheries Center, Mississippi laboratories to chair the workshop.

The objective of the workshop was to develop requirements and information necessary to effectively determine calibration factors necessary to compare results obtained from different sampling gears, and where appropriate recommend standardization.

The workshop was entitled "SEAMAP Shrimp and Bottomfish Sampling Gear Workshop" and the following papers were presented:

"Nearshore sampling design, gear, and vessels employed by state agencies of the Gulf of Mexico region," Steve Heath, Marine Biologist III, Alabama Department of Conservation and Natural Resources.

"Comparison of catch rates and species composition between a 16 ft and a 50 ft sampling trawl," Karen Jo Foote, Fishery Biologist III, Louisiana Department of Wildlife and Fisheries.

"Comparisons between catch rates for 15 ft, 40 ft, and 45 ft trawls," Terry Cody, Program Leader for Gulf Research, Texas Parks and Wildlife.

"Mesh selectivity study of penaeid shrimp trawled from Galveston Bay, Texas," Richard L. Benefield, Project Leader for Bay Shrimp Studies, Texas Parks and Wildlife.

"Comparisons of 40, 55, and 70 foot sampling trawls," Elmer J. Gutherz, Marmap Surveys Branch Chief and Gilmore (Butch) Pellegrin, Fishery Biologist, National Marine Fisheries Service.

"Analysis of paired sampling between the OREGON II and other vessels," Jeff Mathews, Biological Oceanographer, National Marine Fisheries Service.

"Techniques and methodology for calibrating shrimp and bottomfish sampling gear," John W. Watson, Harvesting Systems Branch Chief and Wilber R. Seidel, Harvesting Systems and Surveys Division Chief, National Marine Fisheries Service.

The papers are presently being edited by Mr. John Watson, NMFS, Mississippi Laboratories; Mr. Richard Condrey, Center for Wetland Resources - LSU and Mr. Jeff Mathews, NMFS, Galveston Laboratory. The papers will be published by the GSMFC in mid-November, and copies can be obtained by contacting the GSMFC office.

ATLAS

In the November 1982 SEAMAP meeting the Subcommittee requested the Data Coordinating Work Group to develop a SEAMAP Atlas for the 1982 survey data. This Atlas would comply with the SEAMAP goal of dissemination of survey data to the fishing industry. The Atlas would serve as a summary of all the 1982 SEAMAP data (ichthyoplankton, shrimp and bottomfish and environmental) and would be distributed to inform state, federal and universities as to the type of data available, how and when collected.

Dr. Warren Stuntz of the Southeast Fisheries Center, Mississippi Laboratories was asked by the Subcommittee to coordinate the development of the Atlas. The Atlas will be completed in published form by the end of November. Copies of the Atlas can be obtained by contacting the GSMFC office.

OPERATIONAL PLAN

In October 1982 the Subcommittee recommended, and the TCC agreed, that a SEAMAP Operational Plan should be developed. The main purpose of the Plan would be to lay out the SEAMAP program purpose, goals and objectives over the next five years.

After receiving funds from the Gulf of Mexico Fishery Management Council, NMFS and the State of Mississippi, the Subcommittee began the process of looking for a contractor to develop the Plan. The Subcommittee agreed to accept a proposal for the development of the Plan for $26,252 from Dr. Richard Condrey, Center for Wetland Resources, Louisiana State University.

Dr. Condrey sent the final draft of the Plan to the Subcommittee for review on October 7th. If the Subcommittee agreed with the final draft then it will be published after November 1, 1983.

Copies of the plan can be obtained by contacting the GSMFC office.

SEAMAP FUNDING REPORT

FY 83 BUDGET

Major administrative funding support for SEAMAP is obtained from the NMFS and the GSMFC. For the fiscal year 1983 additional funding support for administrative portion of SEAMAP and the SEAMAP Operational Plan has come from the NMFS, GSMFC, Gulf of Mexico Fishery Management Council and the State of Mississippi (See attached Financial Statement).

FY 84 PROPOSED BUDGET

In applying for funds for fiscal year 1984 the SEAMAP Subcommittee has submitted a proposal for part of the GSMFC programmatic funds and funding support from the NMFS. The total proposed budget for SEAMAP is $39,500. A break down is as follows:

GULF STATES MARINE FISHERIES COMMISSION

Financial Statement for
Cooperative State/Federal Gulf of Mexico Monitoring
and Assessment Program (part of SEAMAP)
October 1, 1982 to September 30, 1983
(Includes Federal and State Funding)

ADMINISTRATIVE PORTION: $18,748.00

Expenses through 9/30/83		
1)	Personnel	$ 7,111.20
2)	Travel	9,231.22
3)	Office Supplies	484.81
4)	Postage	633.84
5)	Telephone	1,030.79
6)	Meeting Cost	122.21
		$18,748.00

Unexpended Balance - 0 -

SEAMAP OPERATIONAL PLAN:

	Budget	Expenses to date	Unexpended Balance
Job I	$26,252	-0-	$26,252
Job II	17,000	8,500 (to be paid upon billing)	8,500

FUNDS RECEIVED FROM STATE OF MISSISSIPPI $ 5,000.00

Expenses through 9/30/83		
1)	Personnel	$1,259.93
2)	Travel	1,810.48
3)	Office Supplies	320.00
4)	Postage	35.64
5)	Telephone	324.46
6)	Meeting Cost	96.92
7)	Copy Expense	1,152.57
		$5,000.00

Unexpended Balance - 0 -

BUDGET for SEAMAP FY 84

Personnel	$18,000
Office Supplies	600
Postage	1,200
Telephone	1,200
Meeting Expenses	1,600
Travel	13,000
Publication	2,400
Copy Expenses	1,500
TOTAL	$39,500

PROPOSED 1984 SEAMAP ACTIVITIES

SURVEYS

In the April, 1983 SEAMAP meeting the Subcommittee agreed that the original interest of SEAMAP should not be lost, that intent would be to establish a long-term data base in the Gulf of Mexico. The SEAMAP Subcommittee agreed to continue with the same types of surveys (ichthyoplankton, shrimp and bottomfish, and environmental) in 1984 as they did in 1982 and 1983. The establishment of the SEAMAP long-term data base would be the beginning of understanding abundance and

distribution trends of shrimp, bottomfish and other marine animals in their environments Gulf wide.

In addition to the established surveys the Subcommittee would like to recommend to the TCC that a tagging survey be conducted Gulf wide for red drum in the fall of 1984. Details for all proposed 1984 survey activities will be presented to the TCC during the March, 1984 meeting of the GSMFC.

To plan for the 1984 survey activities the Subcommittee would recommend to the TCC that the same work group members be retained. The Subcommittee would also recommend to the TCC that a work group be established for the fall tagging survey.

OTHER ACTIVITIES

In proposing other SEAMAP activities the Subcommittee would like to recommend to the TCC the following:

A) The Subcommittee agreed that the 1983 SEAMAP Marine Directory was a useful and informative tool for obtaining information on ongoing research activities in the Gulf. The Subcommittee recommends that a SEAMAP Marine Directory needs to be developed for 1984.

B) The Subcommittee agreed that the 1982 SEAMAP Atlas met its objective of distributing the 1982 SEAMAP data to those interested in fishery data. The Subcommittee recommends that a SEAMAP Atlas be developed using the 1983 SEAMAP data.