ANNUAL REPORT

TO THE

TECHNICAL COORDINATING COMMITTEE

GULF STATES MARINE FISHERIES COMMISSION

OCTOBER 1, 1996 TO SEPTEMBER 30, 1997

SEAMAP Subcommittee

Richard S. Waller, Chairman

David Donaldson

SEAMAP Coordinator

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INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/university program for collection, management and dissemination of fishery-independent data and information in the southeastern United States. The program presently consists of three operational components: SEAMAP-Gulf of Mexico, which began in 1981; SEAMAP-South Atlantic, implemented in 1983; and SEAMAP-Caribbean, formed in 1988.

Each SEAMAP component operates independently, planning and conducting surveys and information dissemination in accordance with administrative policies and guidelines of the National Marine Fisheries Service's Southeast Regional Office (SERO).

Federal programmatic funding for SEAMAP activities and administration was appropriated in Federal Fiscal Years 1985-1996 (October 1 through September 30). State and Gulf States Marine Fisheries Commission (GSMFC) funding allocations for FY1985-FY1997 were handled through State/Federal cooperative agreements, administered by SERO and the Southeast Fisheries Science Center (SEFSC), National Marine Fisheries Service (NMFS).

In FY1997, SEAMAP operations continued for the sixteenth consecutive year. SEAMAP resource surveys included the Fall Shrimp/Groundfish Survey, Louisiana seasonal trawl surveys, Spring Plankton Survey, Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey and plankton and environmental data surveys. Other FY1997 activities included SEAMAP information services and program management.

This report is the fourteenth 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-Gulf of Mexico activities and accomplishments during FY1997 and proposed SEAMAP activities for FY1998.

Appreciation is gratefully extended to the staff of the Gulf States Marine Fisheries Commission for their considerable assistance in the preparation of this document.

FY1997 SEAMAP RESOURCE SURVEYS

In FY1997, collection of resource survey information continued for the sixteenth consecutive year. The surveys conducted during the year address distinct regional needs and priorities and provide information concerning the marine resources in the Gulf of Mexico.

Fall Shrimp/Groundfish Survey

The Fall Shrimp/Groundfish Survey was conducted from October 8, 1996 to December 5, 1996, from off Mobile, Alabama to the U.S.-Mexican border. Vessels sampled waters out to 60 fm, covering a total of 346 trawl stations, in addition to plankton and environmental sampling.

Sampling design was similar to the Summer Shrimp/Groundfish Survey. The objectives of the survey were to:

(1) sample the northern Gulf of Mexico to determine abundance and distribution of demersal organisms from inshore waters to 60 fm;

(2) obtain length-frequency measurements for major finfish and shrimp species to determine population size structures;

(3) collect environmental data to investigate potential relationships between abundance and distribution of organisms and environmental parameters; and

(4) collect ichthyoplankton samples to determine relative abundance and distribution of eggs and larvae of commercially and recreationally important fish species.

During the survey, the NOAA Ship OREGON II sampled 199 stations in offshore waters and territorial Louisiana and Texas waters. The R/V VERRILL sampled 7 stations in Alabama territorial waters. The R/V TOMMY MUNRO sampled 29 stations in Mississippi territorial and offshore waters. The R/V PELICAN sampled 31 stations in Louisiana territorial and offshore waters. And Texas vessels sampled 80 stations within their territorial waters.

In addition, ichthyoplankton data were collected by NMFS and Louisiana vessels at sample sites occurring nearest to half-degree intervals of latitude/longitude. A total of 50 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. NMFS completed 43 ichthyoplankton stations and Louisiana completed 7 stations. The samples, except those taken by Louisiana, will be sorted by the Polish Sorting and Identification Center (PSIC). Once sorted, the specimens and data will be archived at the SEAMAP Archiving Center (SAC).

Louisiana Seasonal Day/Night Surveys

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

Sampling was conducted aboard the R/V PELICAN during July 1997. A stratified random station selection design was maintained, varying from the transects previously surveyed. During each segment, 24 stations were sampled during day and night at depths from 5 to 20 fm. The June sampling was completed as part of the SEAMAP Summer Shrimp/Groundfish Survey.

All seasonal trawls were completed with the standard SEAMAP net and doors. All organisms captured were identified, counted, measured and weighed. Environmental data and plankton/neuston sampling were conducted at trawl stations as well. Plankton samples were archived and sorted at the LDWF Plankton Laboratory. Specimens and data will be shipped to the SEAMAP Archiving Center in St. Petersburg, Florida. The area sampled covered Louisiana territorial and EEZ waters.

Spring Plankton Survey

For the fifteenth year, plankton samples were collected during the spring in the northern Gulf of Mexico. The NOAA Ships CHAPMAN and OREGON II and Florida's R/V SUNCOASTER sampled offshore waters from the western edge of the West Florida Shelf to the Texas-Louisiana border from April 16 to June 10, 1997. A total of 187 stations was sampled. The CHAPMAN and OREGON II sampled 169 stations and the R/V SUNCOASTER sampled 18 stations along the west Florida shelf.

Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The bongo sampler consisted of two conical 61-cm nets with 333-micron mesh. Tows were oblique, surface to near bottom (or 200 m) and back to surface. Wire angle was maintained at 45 degrees. Neuston samples were taken with 947-micron mesh nets on 1 x 2-meter frames towed at the surface for ten minutes. Right bongo and neuston samples were initially preserved in 10% buffered formalin and after 48 hours were transferred to 95% ethyl alcohol for final preservation. Left bongo samples were preserved via an ethanol/ethanol transfer to aid in preservation of larval otoliths. In addition, hydrographic data (surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom, and Forel-ule color) were collected at all stations.

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

Reef Fish Survey

The sixth Reef Fish Survey began on June 18 and will continue into late fall 1997. Vessels from NMFS, Texas, and Alabama sample inshore and offshore waters, in addition to plankton and environmental sampling. To date, approximately 230 stations have been sampled throughout the Gulf of Mexico. Randomly selected sites from Brownsville, Texas to Key West, Florida are chosen from known hard bottom locations. The objectives of the survey are to:

(1) assess relative abundance and compute population estimates of reef fish using a video/trap technique;

(2) determine habitat using an echo sounder and video camera;

(3) determine if bioacoustics assessment methodology can be applied to reef fish communities;

(4) collect environmental data at each station; and

(5) collect ichthyoplankton samples at selected reef sites.

The primary purpose of this survey is to assess the relative abundance and compute population estimates of reef fish. Stations are randomly-selected 100 m^2 sites which are designated as "reef areas". There are several aspects of the reef fish survey: 1) locating and compiling known hard bottom reef habitat locations; 2) surveying site selection; 3) sampling protocol using a fish trap and video camera and 4) analyzing the video records. Data is collected using the trap/video methodology where a fish trap containing a video camera is deployed onto the selected reef site. Trap soak time is one hour. After trap deployment, hydrographic data including a STD/light meter, transmissometer drop, secchi disk reading and surface chlorophyll samples will be collected. Also, after the last trap/camera set, one ichthyoplankton station will be completed each day with a surface neuston net and Tucker trawl. Environmental and plankton samples collected will use established SEAMAP protocols and plankton samples will be transshipped to the Polish Sorting and Identification Center.

Final analyses of video tapes are accomplished at the Pascagoula Lab, where data is recorded onto standard SEAMAP forms. Tapes are analyzed either in their entirety or by randomly-selected one minute intervals. The determinant factors for sampling are based on whether the reader can identify and count fish entering the camera field of view and record the data.

Summer Shrimp/Groundfish Survey

During the spring of 1997, there was communication between the Shrimp/Groundfish Work Group members to examine the design for the Summer Shrimp/Groundfish Survey and determine the random station locations for each participant.

Objectives of the survey were to:

(1) monitor size and distribution of penaeid shrimp during or prior to migration of brown shrimp from bays to the open Gulf;

(2) aid in evaluating the "Texas Closure" management measure of the Gulf Council's Shrimp Fishery Management Plan; and

(3) provide information on shrimp and groundfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm.

The overall sampling strategy during the 1997 SEAMAP summary survey was to work from the eastern Gulf to the Texas/Mexico border, in order to sample during or prior to migration of brown shrimp from bays to the open Gulf area. The entire survey occurred from June 2 to July 16, 1997.

During the survey, the NOAA Ship OREGON II and R/V TOMMY MUNRO sampled offshore and inshore Gulf waters with 40-ft trawls. Alabama's R/V VERRILL sampled offshore Alabama waters with 40-ft trawls. The R/V PELICAN sampled both Louisiana state waters and offshore waters with 40-ft trawls, and Texas vessels sampled Texas state waters and offshore waters with 20-ft trawls.

A total of 315 trawl samples was taken from coastal and offshore waters out to 50 fm from Mobile Bay, Alabama, to Brownsville, Texas. All vessels took environmental data, including temperature, salinity, oxygen, and chlorophyll at each station.

In June, catch rates of brown shrimp east of the River were very low, with a maximum catch of 10.1 lb/hr of 66-count shrimp. White shrimp catches east of the River were all less than 1.0 lb/hr. The largest pink shrimp catch rate east of the River was 9.0 lb/hr of 26-count shrimp taken in 13 fm of water off the Mobile Bay. Finfish catch rates east of the River were low, with the largest catch of 870 lb/hr with longspine porgy predominating.

In July's samples west of the river (Louisiana) brown shrimp catches were also low with the largest catch rate of 18.3 lb/hr of 41-count shrimp occurring off Vermilion Bay in 16 fm. Catches of white shrimp were extremely low, with all catches less than 2.0 lb/hr. Finfish catch rates were also low with the largest catch rate of 2,330 lb/hr taken on July 10 with Atlantic croaker predominating.

Moderate catches of brown shrimp were made off Texas from June 2 to July 7. The largest catch rate occurred June 29 in waters off Matagorda Bay in 16 fm (57.1 lb/hr of 71-count shrimp). White shrimp catches off Texas were low with the largest catch, 26.5 lb/hr of 15-count shrimp, also taken off Matagorda Bay in 6 fm. Catch rates for pink shrimp were also low off Texas, though the largest catch was 69.3 lb/hr of 32-count shrimp off the lower Laguna Madre in 8 fm. Finfish catch rates were low in Texas inshore and offshore waters. The largest catch of finfish was 2,115 lb/hr in 6 fm off Matagorda Bay with Atlantic croaker predominating.

Fall Plankton Survey

The first fall ichthyoplankton survey to assess abundance and distribution of king mackerel eggs and larvae occurred in August 1984. No sampling survey was conducted in 1985; however, expanded surveys in 1986-1996 and in the current year covered Gulf waters from Florida Bay to Brownsville, Texas. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS began surveying Gulf waters on September 3 and will continue into the first week of October. Stations are located along a 30-minute latitude/longitude grid from inshore waters to the shelf edge.

The NOAA Ship CHAPMAN is sampling stations from Tampa Bay, Florida to Brownsville, Texas at depths from 5 to 100 fm. The R/V VERRILL is sampling stations at the mouth and outside Mobile Bay. The R/V TOMMY MUNRO is sampling stations south of Mississippi Sound along a 30-minute grid. The R/V PELICAN is sampling stations in Louisiana territorial waters. And Florida's R/V SUNCOASTER is sampling stations off Tampa Bay south to the Florida Straits area.

Stations were sampled with standard SEAMAP bongo nets with 333-micron mesh and/or 1 x 2-meter neuston nets fitted with 947-micron mesh. In addition, hydrographic sampling included chlorophylls, salinity, temperature and dissolved oxygen from surface, mid-water, and bottom, and water transparency and water color was conducted at each station. Right bongo samples collected by NMFS and the Gulf States will be transshipped to the PSIC. Left bongo and neuston samples will be stored at the SIPAC at the Gulf Coast Research Laboratory for possible future sorting. Louisiana plankton samples will be sorted by LDWF according to SEAMAP protocols and specimens and data will be provided to the SAC.

Plankton and Environmental Data Surveys

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

Objectives of these piggybacked surveys were: 1) to collect plankton samples throughout the survey area; and 2) to collect associated hydrographic and environmental data at each plankton station. Additionally, environmental data (salinity, temperature, and oxygen from surface, mid-depth and bottom waters, and chlorophyll from surface and bottom waters) were collected during the shrimp/groundfish surveys. Wind direction, wind speed and wave height were taken at all trawl stations.

Samples from the right side of the bongo nets and neuston samples were shipped to the NMFS-Pascagoula Laboratory for shipment to the PSIC, where they will be sorted to the family level (both

ichthyoplankton and selected crustacean and molluscan species). The left bongo sample from each station is retained as a back-up in the event of damage or loss of the specimens and maintained at the SIPAC.

Chlorophyll samples were filtered at each station using GF/C filters. All filters were put in petri disks and wrapped in foil for onboard storage in the freezer. Chlorophyll analysis will be completed ashore. Preservation of plankton samples was in buffered formalin prior to transfer to ethanol.

In addition to these piggybacked surveys, two major SEAMAP plankton surveys were conducted in FY1997, as detailed earlier.

INFORMATION SERVICES

Information from the SEAMAP activities is provided to user groups through the program administration and three complementary systems: the SEAMAP Information System, SEAMAP Archiving Center and SIPAC. Products resulting from SEAMAP activities can be grouped into two major categories: data sets (including broadly, digital data and collected specimens) managed by the SEAMAP Information System, SEAMAP Archiving Center and SIPAC; and program information. Program information is discussed in the *PROGRAM MANAGEMENT* Section of this report.

SEAMAP Information System

Biological and environmental data from all SEAMAP-Gulf surveys are included in the SEAMAP Information System, managed in conjunction with NMFS-SEFSC. Raw data are edited by the collecting agency and verified by the SEAMAP Data Manager prior to entry into the system. Data from all SEAMAP-Gulf surveys during 1982-1995 have been entered into the system and data from 1996 surveys are in the process of being verified, edited, and entered for storage and retrieval. Verified, non-confidential SEAMAP data are available conditionally to all requesters, although the highest priority is assigned to SEAMAP participants. A total of 206 SEAMAP data requests have been received and processed. In some instances, requests were filled promptly; in many cases, however, a substantial lag occurred because of the extremely large amount of data being collected on an increased number of surveys over those of past years. To date, 205 requests have been completed and work is being performed on those remaining.

Requested SEAMAP data were used for a multitude of purposes in FY1997:

- Evaluating the abundance and size distribution of penaeid shrimp in Federal and state waters to assist in determining opening and closing dates for commercial fisheries;
- Assessing shrimp and groundfish abundance and distribution and their relationship to such environmental parameters as temperature, salinity, and dissolved oxygen;
- Identifying environmental parameters associated with concentrations of larval finfish;
- Compiling the 1994 and 1995 SEAMAP Biological and Environmental Atlas; and
- Comparing catches of shrimp and groundfish captured by 40-ft versus 20-ft trawl nets.

Data Management

The requirements report for an integrated data system, *Data Management System Design Study for Gulf and South Atlantic, 1987*, was completed in March 1987. The document identifies the high-level design specifications and recommended implementation plan for a module-based SEAMAP Data Management System (DMS). The design is based on information contained in the SEAMAP Gulf and South Atlantic DMS Requirements Document developed through a cooperative effort between NMFS and other SEAMAP participants. The document has five sections: 1) background and brief descriptions of current centralized and proposed distributed systems; 2) summary of the Requirements Survey; 3) overview of the system's architecture; 4) description of developmental modules constituting the DMS design; and 5) a modular implementation plan which includes costs and schedule.

Work was completed during FY1990 on the new distributed SEAMAP DMS. New modules completed include those for data entry, edit, upload, data query and download. All of the Gulf States are now equipped with the necessary computer hardware and software.

The system is decentralized, i.e., distributed. Thus, the SEAMAP users are able to locally, and directly, enter and retrieve data. Software for the system has been distributed to participants for trial runs of data input.

This system decreases the time necessary to enter and retrieve data and provides powerful and flexible local data analysis and display capabilities. Under the system, each SEAMAP site enters, verifies and edits their data, eliminating the mail-oriented loop necessary to enter/edit/verify data. Secondly, each site has the capability of locally accessing SEAMAP data, utilizing a user-friendly system. Local data retrieval allows the data to be accessed in a timely manner with a minimum amount of effort and programming skills.

Under the system, outside users (e.g., Minerals Management Service, U.S. Army Corps of Engineers, etc.) may request special data sets for research or study. The outside users submit the request to the SEAMAP Subcommittee through the SEAMAP-Gulf Coordinator for approval to proceed. Once the request is approved, the information is provided by the Data Manager and staff members through a priority-based, mail-oriented system. Also, SEAMAP participants may use the Special Request mechanism for data sets too large for economical downloading by telephone. These requests will be handled by a Central Operations staff in the same priority-based, mail-oriented manner as noted above.

Real-time Data

A major function of the SEAMAP Information System in FY1997 was the processing of catch data from the Summer Shrimp/Groundfish Survey as near-real-time data. Data were transmitted three times weekly via cellular phone to the NMFS Mississippi Laboratories from the NOAA vessel, while the states' data were entered into the system weekly. Plots of station locations and catch rates of

shrimp, squid and dominant finfish species were prepared and edited at the NMFS Mississippi Laboratories, and processed by GSMFC for weekly distribution to management agencies, fishermen, processors and researchers. These plots were also available through the SEAMAP home page. Management agencies also received comprehensive data listings showing penaeid shrimp length frequencies, sampling parameters and environmental conditions. Representative listings are shown in Figures 1-9.

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR MIN BDO	GEAR MIN TYPE	GEAR MIN FISH	GEAR MIN TOWS	LBS SHRIMP	LBS FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS LBS
1	TN12	6/21/97	26-18.5	96-59.3	05	16	26.6	21.2		5.7	ST	44	1	15.3	24.3	0	0	0	0	22	9

SPECIES:BROWN WEIGHT: 14.771 NUMBER: 515 MODE:113/ 16
LEN(MM)/FREQ. 70/ 1 80/ 2 90/ 17 100/ 62 110/ 64 120/ 35 130/ 9 140/ 3 150/ 2

SPECIES:PINK WEIGHT: .485 NUMBER: 4 MODE: 0/ 0
LEN(MM)/FREQ. 90/ 1 130/ 2 160/ 1

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR MIN BDO	GEAR MIN TYPE	GEAR MIN FISH	GEAR MIN TOWS	LBS SHRIMP	LBS FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS LBS
1	TD 7	6/21/97	26-28.6	97-05.2	09	11	26.4	21.5		6.1	ST	13	1	.0	.7	0	0	0	0	70	16

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR MIN BDO	GEAR MIN TYPE	GEAR MIN FISH	GEAR MIN TOWS	LBS SHRIMP	LBS FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS LBS
1	TD16	6/21/97	26-33.0	96-58.0	11	20	27.2	21.2		5.6	ST	95	2	.3	39.3	0	0	0	0	70	35

SPECIES:BROWN WEIGHT: .088 NUMBER: 2 MODE:192/ 1
LEN(MM)/FREQ. 110/ 1 120/ 1

SPECIES:WHITE WEIGHT: .243 NUMBER: 2 MODE:188/ 1
LEN(MM)/FREQ. 180/ 1 190/ 1

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR MIN BDO	GEAR MIN TYPE	GEAR MIN FISH	GEAR MIN TOWS	LBS SHRIMP	LBS FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS LBS
1	TD15	6/21/97	26-38.3	96-58.2	15	19	27.3	21.2		5.7	ST	14	1	.1	18.7	0	0	0	0	70	37

SPECIES:BROWN WEIGHT: .088 NUMBER: 4 MODE: 0/ 0
LEN(MM)/FREQ. 80/ 1 90/ 2 130/ 1

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR MIN BDO	GEAR MIN TYPE	GEAR MIN FISH	GEAR MIN TOWS	LBS SHRIMP	LBS FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS LBS
1	TD14	6/21/97	26-38.0	97-01.0	16	18	26.9	21.2		5.4	ST	35	1	.4	17.8	0	0	0	0	70	14

SPECIES:BROWN WEIGHT: .353 NUMBER: 10 MODE: 0/ 0
LEN(MM)/FREQ. 80/ 1 90/ 3 100/ 3 110/ 1 140/ 2

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR MIN BDO	GEAR MIN TYPE	GEAR MIN FISH	GEAR MIN TOWS	LBS SHRIMP	LBS FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS LBS
1	TN 4	6/21/97	26-34.0	97-13.8	19	8	22.9	21.6		5.7	ST	27	1	2.0	37.0	0	0	0	0	69	16

SPECIES:BROWN WEIGHT: 1.698 NUMBER: 221 MODE: 73/ 15
LEN(MM)/FREQ. 60/ 16 70/ 68 80/ 55 90/ 44 100/ 12 110/ 4 120/ 2

SPECIES:PINK WEIGHT: .309 NUMBER: 6 MODE: 0/ 0
LEN(MM)/FREQ. 100/ 1 110/ 1 120/ 2 130/ 2

Figure 1. Real-Time Data Listings, 1997 SEAMAP Summer Shrimp/Groundfish Survey

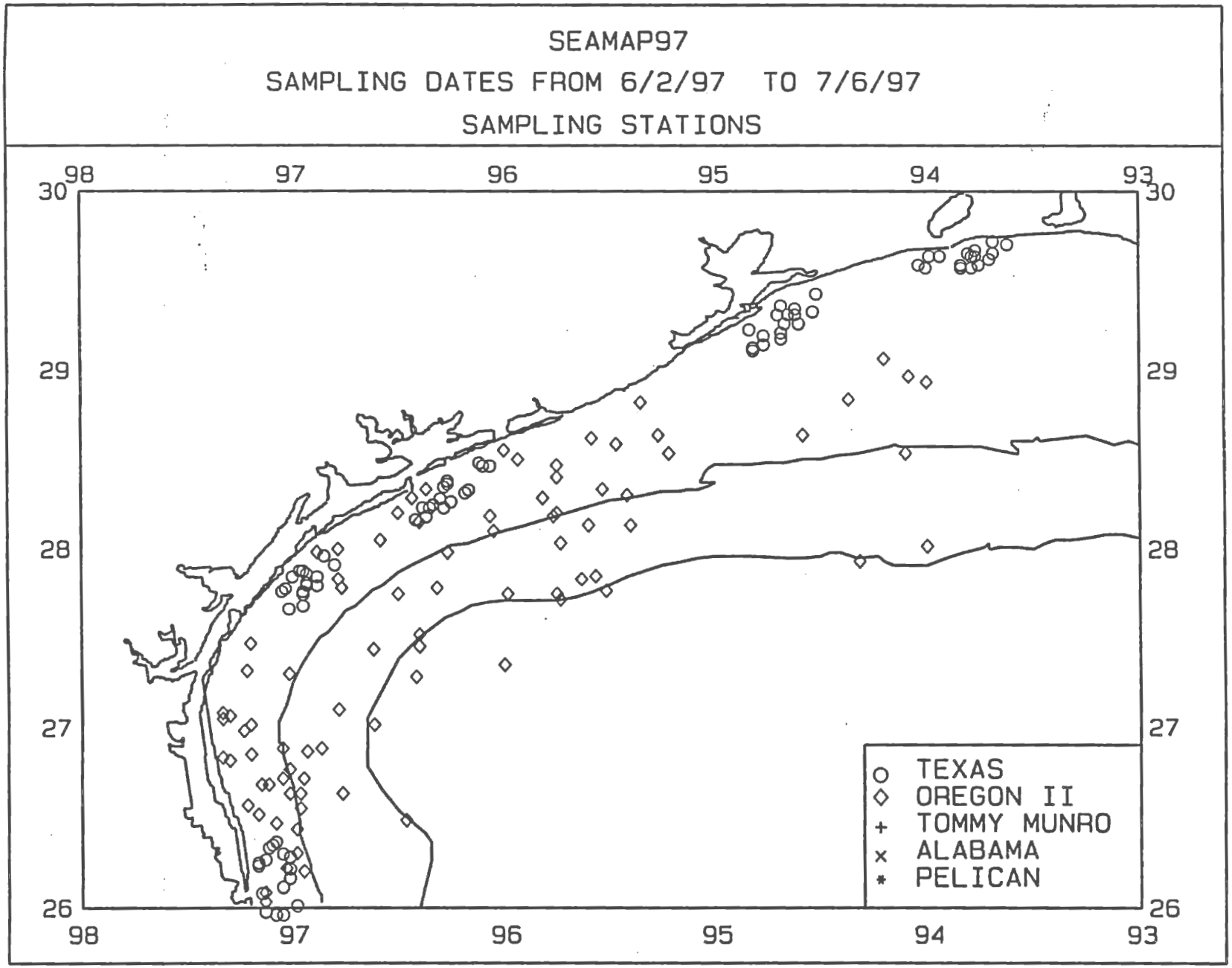

Figure 2. Real-Time Data Catch Plots, 1997

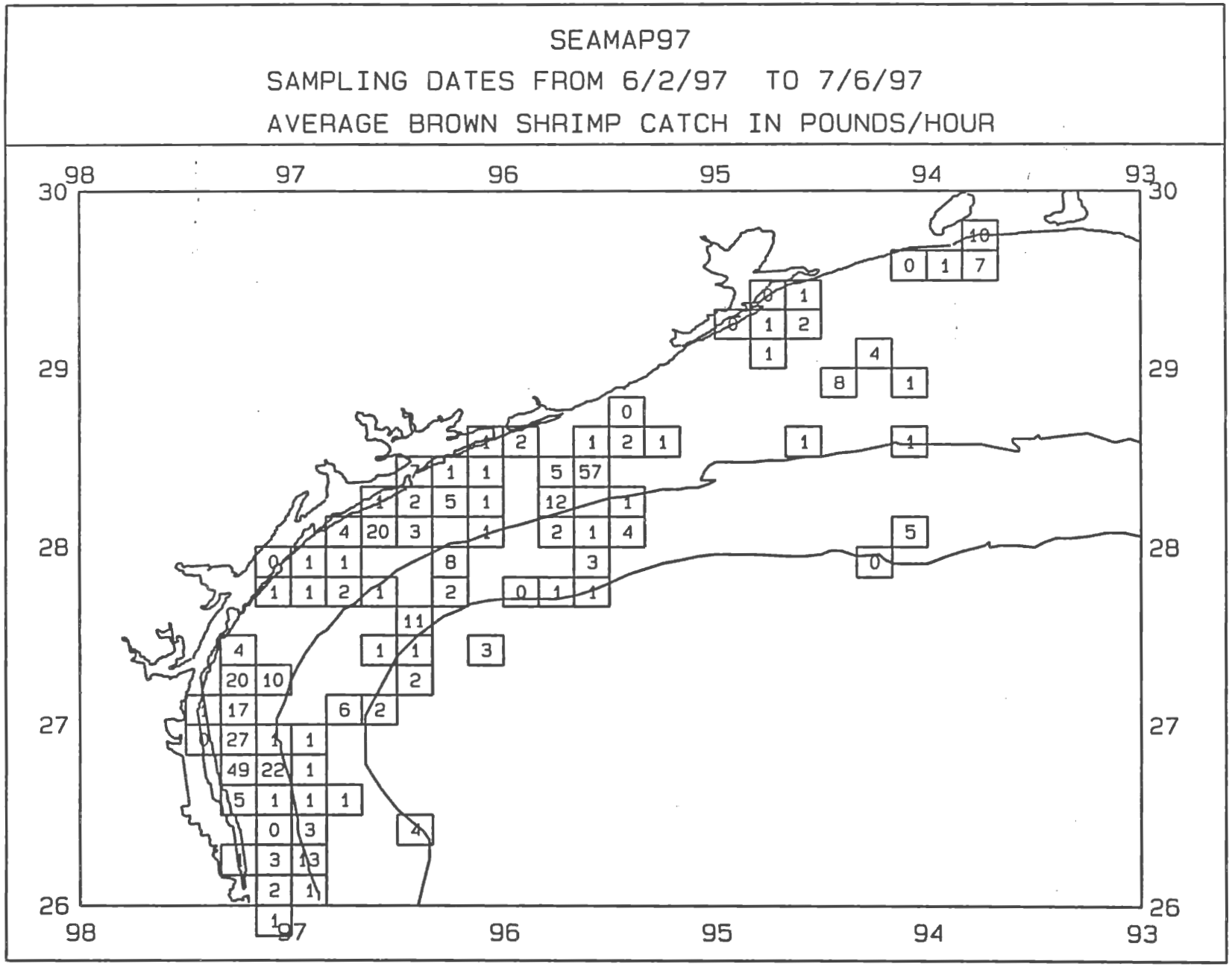

Figure 3. Real-Time Data Catch Plots, 1997

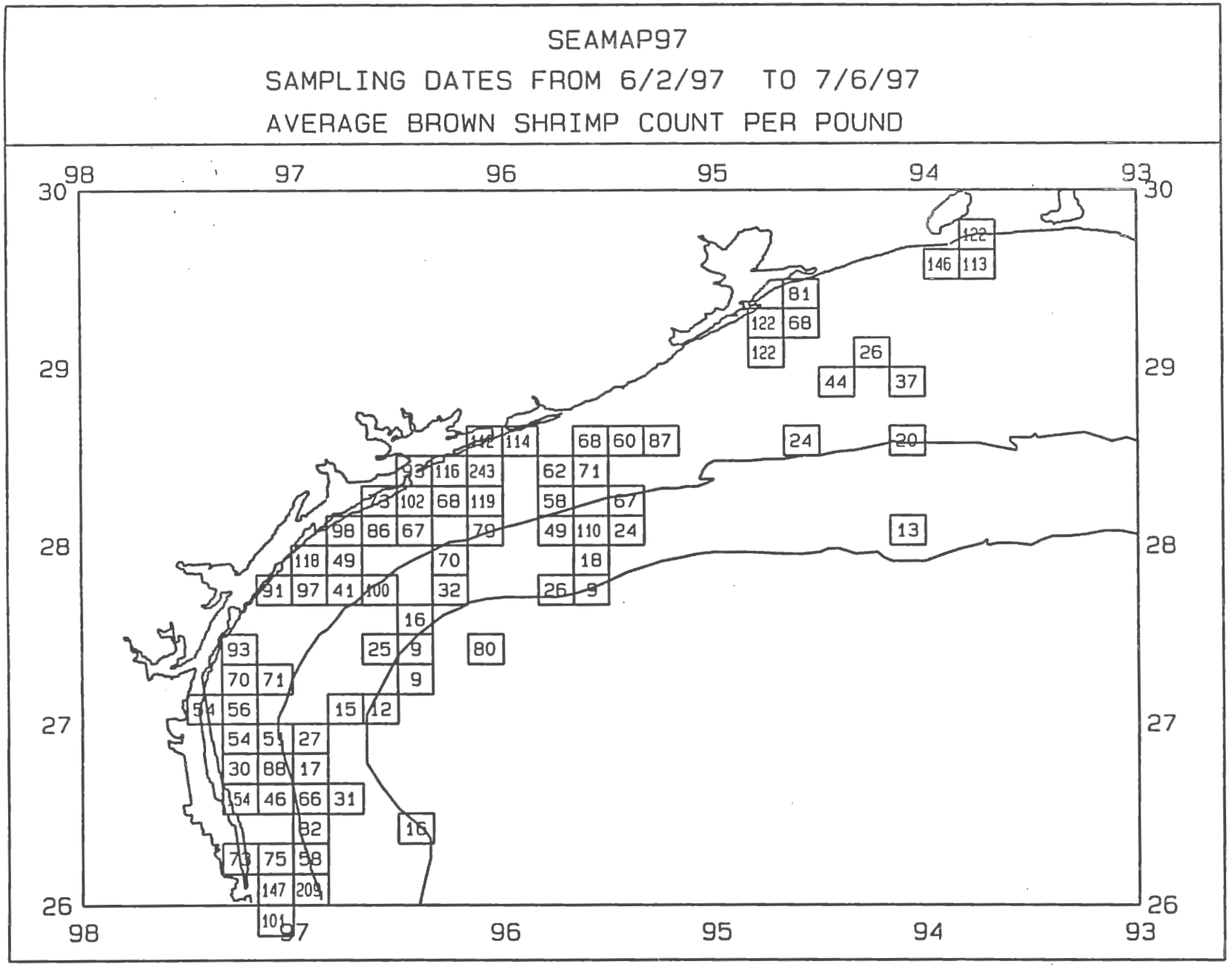

Figure 4. Real-Time Data Catch Plots, 1997

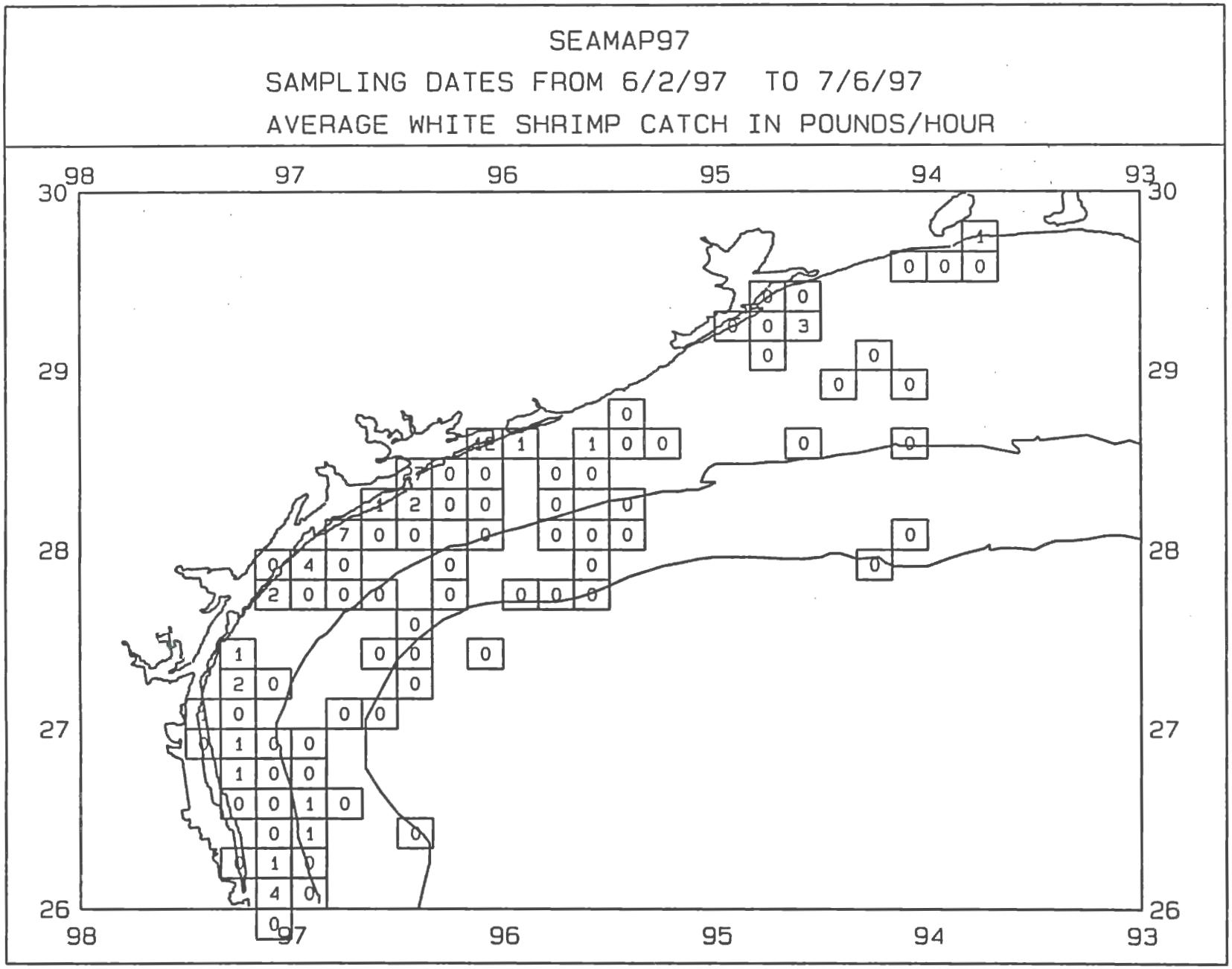

Figure 5. Real-Time Data Catch Plots, 1997

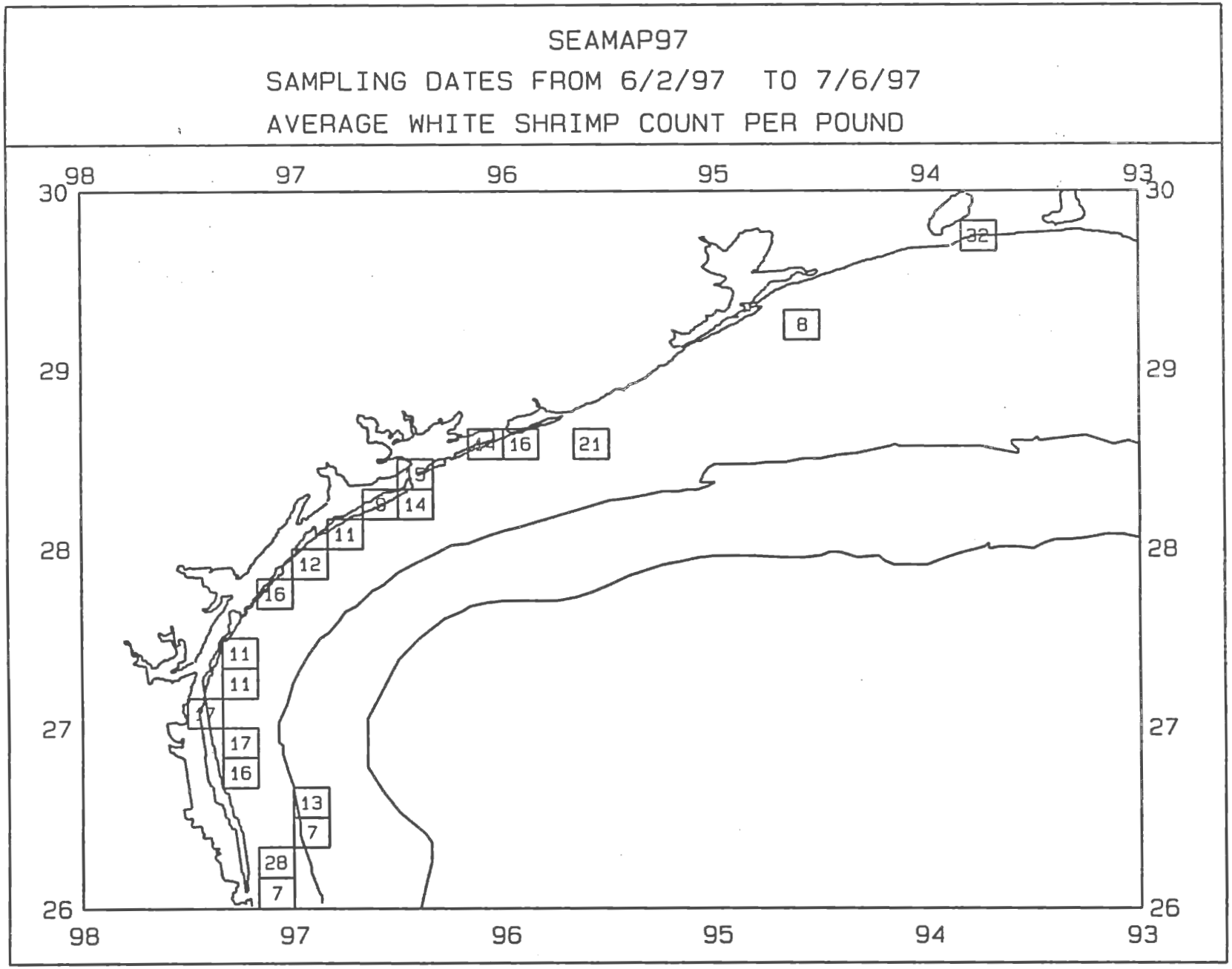

Figure 6. Real-Time Data Catch Plots, 1997

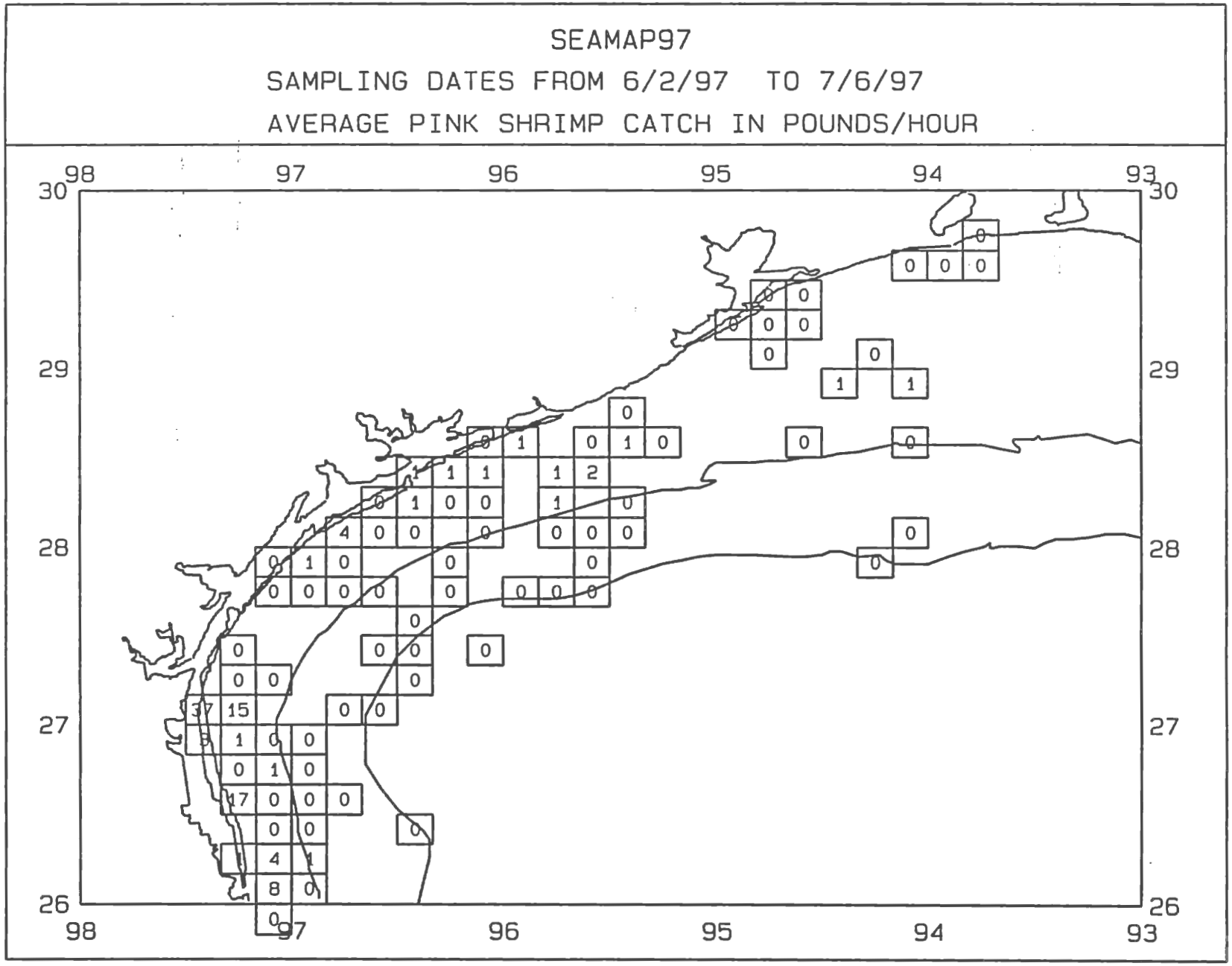

Figure 7. Real-Time Data Catch Plots, 1997

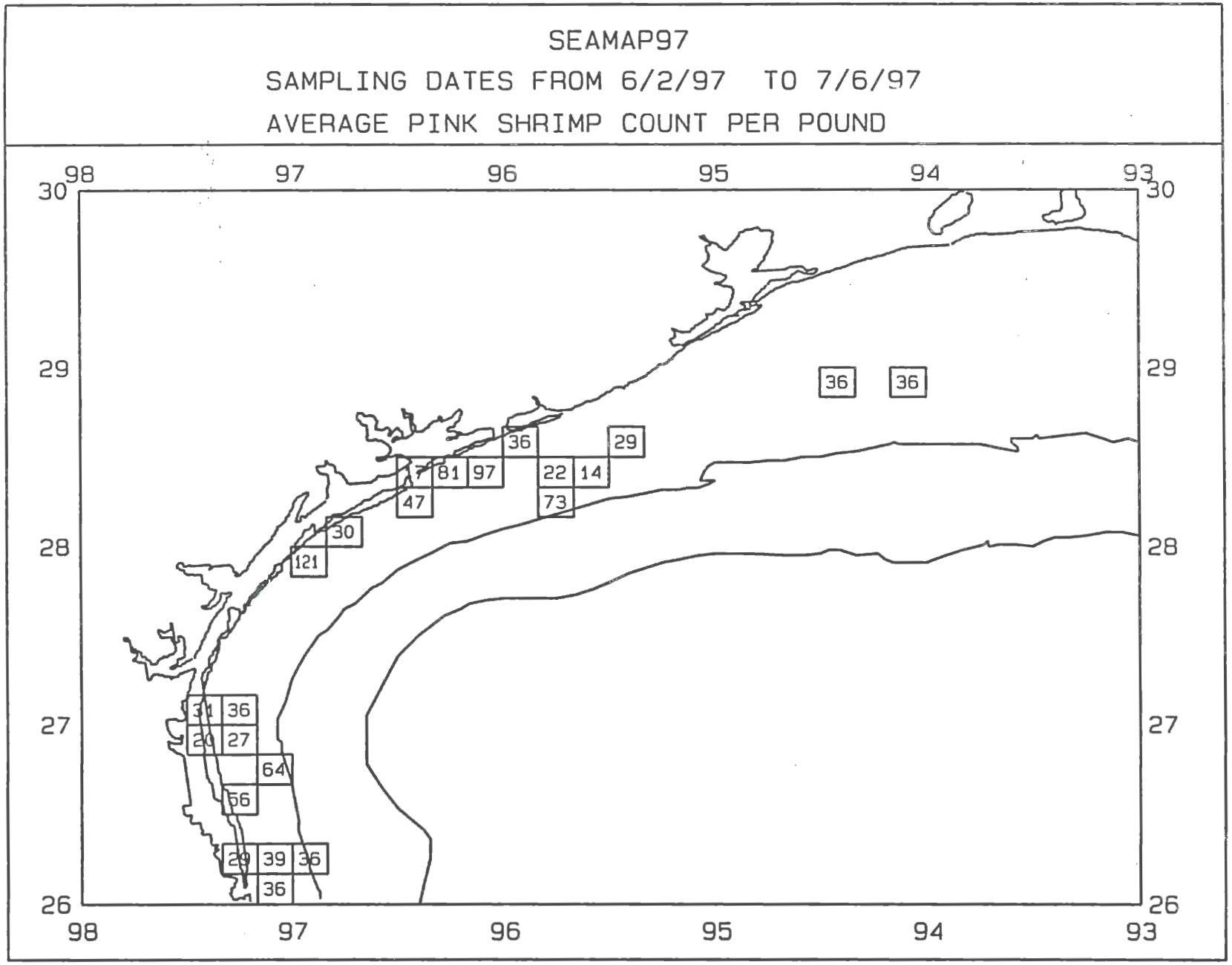

Figure 8. Real-Time Data Catch Plots, 1997

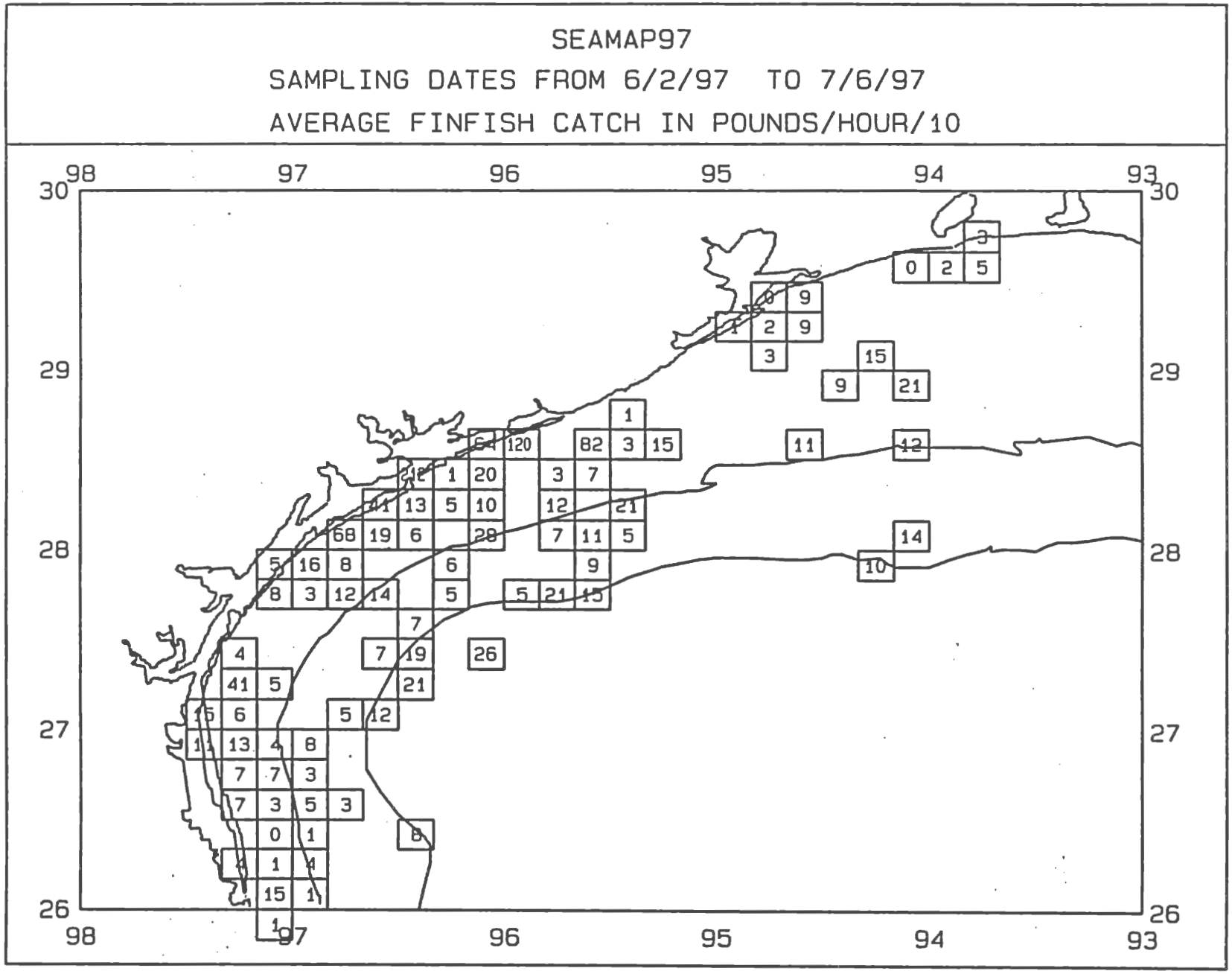

Figure 9. Real-Time Data Catch Plots, 1997

SEAMAP Archiving Center

Larval fish and fish egg samples sorted to the lowest taxa level possible by the Polish Sorting and Identification Center are returned to the SEAMAP Archiving Center for archiving and loan to researchers. For FY1997, approximately 12,870 vials have been returned from the Polish Sorting and Identification Center. Data entry for 6,407 of the returned sorted samples has been completed in an improved and simplified SEAMAP DMS. Samples cataloged to date represent 18 orders, 126 families, 235 genera and 245 species.

The SEAMAP Archiving Center, which is managed in conjunction with Florida Department of Environmental Protection (FDEP) in St. Petersburg, Florida, processes both specimen loans and requests for associated plankton survey environmental data. The FDEP has completed renovations on the existing building which houses the SEAMAP Archiving Center, which will allow for expansion of the climate-controlled storage area and upgrading to current fire codes. The SEAMAP Archiving Center personnel, in cooperation with other staff from FDEP, have completed the spring ichthyoplankton survey in May 1997 and will be participating in the fall ichthyoplankton cruise. The fall cruise was scheduled to depart in September 1997.

SEAMAP Invertebrate Plankton Archiving Center

The SIPAC is in its thirteenth year of operation. Ken Stuck of GCRL serves as SIPAC curator, and was assisted during FY1996 by a part-time post-graduate student and two graduate students in July and August. The overall mission of the SIPAC, to archive and manage the large collection of plankton samples acquired during SEAMAP cruises and to obtain specimens and/or data on selected invertebrate larval stages from those samples, continued during FY1996. The SIPAC continues to provide unsorted plankton samples and data or specimens of larval invertebrates to qualified researchers upon request. The post-graduate and graduate students that were supported on SEAMAP funds also participated in SEAMAP cruises aboard the R/V TOMMY MUNRO and OREGON II during FY1996.

During FY1996, a total of 655 SEAMAP plankton samples were received and logged into the SIPAC database. The samples were obtained from the SEAMAP cruises conducted on the OREGON II, CHAPMAN, SUNCOASTER, and PELICAN. The number of samples currently cataloged in the SIPAC collections is 6,268. Samples currently on loan include: 146 samples from various OREGON II, CHAPMAN, HERNAN CORTEZ II and SUNCOASTER cruises to S. Turner; and 7 samples from TOMMY MUNRO cruises to B. Comyns.

In an effort to kept the space required to house the SIPAC collection of unsorted plankton samples to a minimum, samples that have been in the collection for over 7 years and duplicate samples sorted and received from the PSIC, are aliquoted to ¼ their original volume and placed into 100ml vials. When possible, the remaining ¾ aliquots are donated to educational institutions for use as teaching materials. If the remaining sample must be discarded, sample jars are cleaned and returned to

NMFS-Pascagoula for reuse. During FY1996, approximately 100 samples from 1986 SEAMAP cruises were aliquoted. To date, approximately 1,550 samples collected from 1982 - 1986 have been aliquoted and prepared for long-term storage. Due to the recent addition of samples to the collection during FY1996, there is currently no space available for additional samples to be deposited into the SIPAC archives.

During FY1996, an inventory of sorted SEAMAP materials was prepared which summarizes holdings by cruise and taxa. The post-graduate student hired in FY1996 was trained to sort samples for selected invertebrates according to SIPAC protocols. A total of 36 samples collected during OREGON II cruise 190 were sorted, bringing the total number of samples sorted for invertebrates to 1,494, consisting of 6,333 lots. The SIPAC post-graduate student resigned at the end of August and because of lack of funds, will not be replaced until next fiscal year. Therefore, SIPAC invertebrate sorting activities has been suspended.

During the next fiscal year, the SIPAC will continue to manage SEAMAP plankton collections, accession samples, and provide unsorted samples, sorted specimens and data from the collection to qualified researchers as requested. However, due to the resignation of the SIPAC post-graduate student and continual difficulties in retaining trained personnel to process samples, it is anticipated that no additional SEAMAP samples will be sorted for invertebrates in FY1997. Efforts with sorted materials will concentrate on curation and analysis of current holdings and publication of distribution patterns of selected taxa by cruise.

PROGRAM MANAGEMENT

The SEAMAP program is administered by the SEAMAP Subcommittee of the TCC through the SEAMAP Coordinator, who is under the technical direction of the Subcommittee Chairman and administrative supervision of the GSMFC's Executive Director.

Personnel associated with SEAMAP program management included the Coordinator, Data Manager, SEAMAP Archiving Center Curator, SIPAC Curator and the NMFS-Pascagoula Laboratory Director, serving as Program Monitor.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 1996 and March 1997 in conjunction with the Annual Fall and Spring Meetings of the GSMFC. All meetings included participation by various work group leaders, Coordinator, Data Manager, Program Monitor and the GSMFC Executive Director. Subcommittee members and proxies are listed in Table 1.

Representatives from the Gulf program also met with the South Atlantic and Caribbean representatives in August 1997 to discuss respective program needs and priorities for FY1998. Minutes for all the meetings are listed in Appendix A.

SEAMAP-Gulf work groups met this past year to provide recommendations to the Subcommittee for survey and data management needs. The Red Drum Work Group met on June 28, 1996 (via conference call) to discuss the potential for being unable to conduct the second year of the red drum tag/recapture project and discuss possible alternatives for collecting the necessary data. Where additional discussion was needed, the Subcommittee also deliberated plans and needs via conference calls. Work group members are listed in Table 2.

Coordination of program surveys and distribution of quick-report summaries of a Gulf-wide survey to management agencies and industry were major functions of SEAMAP management in FY1997. Other important management activities included coordinating data provision and specimen loans, preparing publications and documents and assisting in the preparation of State/Federal cooperative agreements, including amendments to permit extension of activities previously not detailed in the agreements.

Proposed FY1998 Activities

Preliminary FY1998 SEAMAP-Gulf budget allocations are shown in Table 3. Last year, total program allocations for all three SEAMAP components--Gulf, South Atlantic and Caribbean, was approximately $1.2 million. At the August meeting, the SEAMAP components based their

allocations on level funding for FY1998. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be $512,403.

Proposed FY1998 activities for all Gulf participants are shown in Table 4. The approved 1998 Operations Plan for SEAMAP-Gulf is contained in Appendix B. It should be noted that the SEAMAP fiscal year begins on January 1, thus fall activities for FY1997 will be conducted from October-December 1996.

Information Dissemination

The following documents were published and distributed in FY1997:

- *1997 SEAMAP Marine Directory.* Inventories of marine agency contacts (State, Federal and university) concerned with fishery research in the Gulf of Mexico, and summaries of information provided by these organizations: target species, types of fishery-independent sampling gear and platforms, annual sampling effort, and other materials.

- *SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee -October 1, 1996 to September 30, 1997.* A detailed summary of program accomplishments, emphasizing survey design, material collected, data dissemination, budget information, and future survey activities.

- *Annual Report of the SEAMAP Program - October 1, 1995 to September 30, 1996.* A summary of FY1996 activities and proposed FY1997 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.

- *Environmental and Biological Atlas of the Gulf of Mexico, 1994.* A compilation of information obtained from the 1994 SEAMAP surveys including catch rates of shrimp and finfish, abundance and distribution of plankton in the Gulf of Mexico and environmental data from all surveys.

- *Environmental and Biological Atlas of the Gulf of Mexico, 1995.* A compilation of information obtained from the 1995 SEAMAP surveys including catch rates of shrimp and finfish, abundance and distribution of plankton in the Gulf of Mexico and environmental data from all surveys.

- *Real-time Data Summaries, 1997.* Data summaries which show pounds/hour and counts of brown, pink and white shrimp caught and finfish catches during the SEAMAP Summer Shrimp/Groundfish survey.

FY1997 Financial Report

Total allocations for FY1997 program administration were $80,654. The GSMFC has arranged and paid for all expenses associated with personnel, meetings, travel and operating expenses to date. The remaining balance will be used to provide administration of the SEAMAP-Gulf program through December 31, 1997.

TABLE 1.

SEAMAP REPRESENTATIVES FOR FY1997

Richard Waller, Chairman
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

James Hanifen, Vice Chairman
Louisiana Department of Wildlife and Fisheries

Stevens Heath
Alabama Department of Conservation and Natural Resources

Mark Leiby
Florida Department of Environmental Protection
Florida Marine Research Institute

Terry Cody
Texas Parks and Wildlife Department

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Richard Leard (non-voting)
Gulf of Mexico Fishery Management Council

TABLE 2.

SEAMAP WORK GROUP MEMBERS FOR FY1997

ADULT FINFISH WORK GROUP

Terry Henwood, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Mark Leiby
Florida Department of Environmental Protection

John Roussel
Louisiana Department of Wildlife and Fisheries

Robert Shipp
University of South Alabama

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Richard Leard
Gulf of Mexico Fishery Management Council

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

DATA COORDINATING WORK GROUP

Kenneth Savastano, Leader
SEAMAP Data Manager
National Marine Fisheries Service
Stennis Space Center

Stevens Heath
Alabama Department of Conservation and Natural Resources
Shrimp/Groundfish Work Group

Terry Henwood
National Marine Fisheries Service
Pascagoula Laboratory
Adult Finfish Work Group

Mike Murphy
Florida Department of Environmental Protection
Red Drum Work Group

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

Perry Thompson
National Marine Fisheries Service
Pascagoula Laboratory
Environmental Data Work Group

Richard Waller
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory
Chairman, SEAMAP Subcommittee
Reef Fish Work Group

ENVIRONMENTAL DATA WORK GROUP

Perry Thompson, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Stevens Heath
Alabama Department of Conservation
and Natural Resources

Michelle Kasprzak
Louisiana Department of Wildlife and Fisheries

Thomas Leming
National Marine Fisheries Service
Pascagoula Laboratory

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Carmelo Tomas
Florida Department of Environmental Protection

Richard Waller
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

PLANKTON WORK GROUP

Joanne Lyczkowski-Shultz, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Churchill Grimes
National Marine Fisheries Service
Panama City Laboratory

Alonzo Hamilton
National Marine Fisheries Service
Pascagoula Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Don Hoss
National Marine Fisheries Service
Beaufort Laboratory

Mark Leiby
Florida Department of Environmental Protection

Harriet Perry
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Rick Shaw
Louisiana State University

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

TABLE 3.

PRELIMINARY FY1998 PROGRAMMATIC BUDGET

Alabama Department of Conservation and Natural Resources	68,000
Florida Department of Environmental Protection	93,840
Louisiana Department of Wildlife and Fisheries	120,700
University of Southern Mississippi/Gulf Coast Research Lab	94,495
Texas Parks and Wildlife Department	54,804
Gulf States Marine Fisheries Commission	80,564
TOTAL	$512,403

TABLE 4.

PROPOSED SEAMAP-GULF ACTIVITIES, FY1998

	Fall	Winter	Spring	Summer
Resource Surveys:				
Spring Plankton Survey			X	
Shrimp/Groundfish Surveys	X			X
Louisiana Seasonal Surveys	X	X	X	X
Fall Plankton Survey	X			
Plankton & Environmental Data Surveys	X	X	X	X
Information Operations:				
1996 Biological and Environmental Atlas				X
1998 Marine Directory			X	
FY1997 Joint Annual Report		X		
Data Input and Request Processing	X	X	X	X
Specimen Archiving and Loan	X	X	X	X
Real-time Data Summaries				X
Program Administration:	X	X	X	X

APPENDIX A

MINUTES FOR FY1997 SEAMAP MEETINGS

RED DRUM WORK GROUP

Mike Murphy, Leader
Florida Department of Environmental Protection

Phil Goodyear
National Marine Fisheries Service
Miami Laboratory

Larry McEachron
Texas Parks and Wildlife Department

Joseph Shepard
Louisiana Department of Wildlife and Fisheries

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

REEF FISH WORK GROUP

Richard Waller, Leader
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Chris Gledhill
National Marine Fisheries Service
Pascagoula Laboratory

Richard Kasprzak
Louisiana Department of Wildlife and Fisheries

Mark Leiby
Florida Department of Environmental Protection

Mark Van Hoose
Alabama Department of Conservation
and Natural Resources

SHRIMP/GROUNDFISH WORK GROUP

Stevens Heath, Leader
Alabama Department of Conservation and Natural Resources

Bruce Comyns
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Nate Sanders
National Marine Fisheries Service
Pascagoula Laboratory

SEAMAP Subcommittee Meeting
MINUTES
New Orleans, Louisiana
Monday, October 14, 1996

Chairman Walter Tatum called the meeting to order at 1:05 p.m. The following members and others were present:

Members:
Walter Tatum, ADCNR, Gulf Shores, AL
Jim Hanifen, LDWF, Baton Rouge, LA
Terry Cody, TPWD, Rockport, TX
Richard Waller, GCRL, Ocean Springs, MS
Joanne Shultz, NMFS, Pascagoula, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL

Others:
Scott Nichols, NMFS, Pascagoula, MS
Buck Sutter, NMFS, St. Petersburg, FL
Ken Savastano, NMFS, SSC, MS
Dalton Berry, Zapata Protein, Inc., Mandeville, LA
Terry L. Romaire, LDWF, Baton Rouge, LA
Michelle Kasprzak, LDWF, Baton Rouge, LA
David Stanley, LSU, Baton Rouge, LA

Staff:
Larry Simpson, GSMFC, Ocean Springs, MS
Dave Donaldson, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Adoption of Agenda

The agenda was adopted as submitted.

Approval of Minutes

The August 4 & 6, 1996 minutes were approved as submitted.

Administrative Report

The Fall Plankton Survey was conducted in late September through early October 1996. The survey covers Gulf waters from Florida Bay to Brownsville, Texas. Approximately 220 stations were sampled. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS participated. The purpose of the survey is to assess abundance and distribution of king mackerel and red drum eggs and larvae.

The Fall Shrimp/Groundfish Survey started in October and will continue through December 1996. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participate in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico.

SEAMAP is in the third phase of a three-phase project of conducting comparative tow surveys between NMFS and the state vessels. In the first two parts of the survey, it was determined that all of the state vessels were essentially fishing the same. The last part of the survey compared the state vessels with the Federal vessels. Earlier this October, the TOMMY MUNRO and the OREGON II did comparative tows but due to weather, only 30 stations were completed. NMFS will be working on the data and hopefully will have a report at the March meeting. This completes the comparative tow surveys and there should be enough information to answer questions that has arisen.

The Annual Report to the GSMFC TCC Committee has been completed and will be distributed at this meeting to the SEAMAP Subcommittee, the TCC and Commissioners and Proxies. The 1996 Joint Annual Report information has been sent to the South Atlantic and Caribbean components for their changes and should be published by the end of the year. The General Session Proceedings should be published and distributed later this year.

Funds were received to publish two Atlases this year but they will not be published because key personnel from NMFS Pascagoula Laboratory retired. A no-cost extension has been submitted and the Atlases should be published by March 1997.

Since April, there has been approximately 400 visitors to the GSMFC SEAMAP homepage and D. Donaldson reminded the Subcommittee to contact him to establish links to SEAMAP and their homepages. There will be a presentation on the GSMFC homepage at the Commission business meeting.

Update on SEAMAP Chlorophyll Sampling Proposal to EPA

J. Hanifen said that per the Subcommittee's direction, the Louisiana Department of Wildlife and Fisheries will submit a proposal to the EPA Gulf of Mexico Program to conduct an intercalibration study of several methods for the collection of chlorophyll samples. The final proposal should be completed within the next two weeks. The EPA GOMP is not actively soliciting proposals so there is no way of knowing if or when it will get funded. He said NASA was soliciting proposals for ground truth information and Terry Romaire and Michelle Kasprzak from his staff prepared a proposal in one week and submitted it to NASA. He said they should know in January 1997 if the proposal was funded.

R. Waller stated that there is a possibility that the state of Mississippi may purchase a CTD Flourometer and other equipment for the TOMMY MUNRO. If these purchases are made Mississippi will be able to participate in these studies.

Discussion of Inkind Reporting for SEAMAP

* At the last SEAMAP Joint Annual meeting, the SEAMAP-SA reported that they do inkind reporting and suggested the SEAMAP-Gulf do this also. The SEAMAP-Gulf at its last meeting asked D. Donaldson to investigate what formula the SEAMAP-SA uses to do this reporting. D. Donaldson distributed a sample of the Inkind Report form the SA uses. Before the Gulf component received dedicated funding for SEAMAP they did do inkind reporting but stopped after they had dedicated funding. After discussion, the Subcommittee decided there were too many disadvantages in submitting this form. **Mark Leiby moved to not proceed with this type reporting and to write a letter to the SEAMAP-SA component explaining why and to caution them on the Gulf's behalf for doing this.** J. Hanifen seconded and it passed unanimously.

Status Report of the SEAMAP Archiving Center

Mark Leiby submitted the following report:

Since February 1, 1996, personnel have cataloged an additional 6,067 lots of ichthyoplankton from 12 different cruises. Collection years include 1985, 1986 and 1993. Due to a loss of personnel in December, a backlog of samples has accumulated, with an additional 33 cruises, from 1985, 1986, 1993 and 1994 in line to be catalogued. New personnel are working expeditiously to rectify the situation.

Three loan and data requests have been processed and updating from loaned material is being done by NMFS personnel at the Pascagoula Lab. On February 12 the ichthyoplankton collection closed in order to move into new housing.

As of March 9 the collection is in its new expanded location and there will now be sufficient room to house all collection years. Due to ongoing construction in the building where the Icthyoplankton Collection is housed, much of the collection is still inaccessible, but are working to rectify this situation.

The SEAMAP data files are still undergoing editing resulting from the conversion to the SEAMAP Data Management System (DMS), as well as by the use of SEAMAP investigators.

R. Waller said that the GCRL has a new person in their archiving center, a post doctorate fellow from Poland and he is very enthusiastic and is doing an excellent job.

Presentation of the Effects of Hypoxia on Stratification of Fishes on Oil Rigs

David Stanley from the Coastal Fisheries Institute, Louisiana State University, Baton Rouge, LA gave a slide presentation on a project sponsored by the Coastal Marine Initiative by the Minerals Management Service. A summary of this presentation is attached (Attachment I).

Data Coordinating Work Group

W. Tatum distributed a letter from A. Kemmerer (Attachment II) in response to the Subcommittee's letter expressing concern over funding for SEAMAP's data management functions.

The Subcommittee was satisfied with the positive response and NMFS's commitment to the SEAMAP program.

K. Savastano distributed the SEAMAP Data Management Report (Attachment III) and reviewed each item. He said that since the joint meeting, processing of the 1993 SEAMAP Atlas has been completed and the 1994 SEAMAP Atlas is approximately 45% complete; funding has been obtained to continue the ORACLE development; 180 SEAMAP requests have been received to date and 179 have been completed; the SEAMAP on-line data base now contains 332 cruises with a total of 2,230,802 records.

Red Drum Work Group

D. Donaldson gave a brief update on the aerial survey and tag recapture portion for red drum. He said NMFS was not able to secure a contract with a purse seiner to do the mark/recapture this year but he understands that funding will be available to do it next year. The aerial survey was completed and like the stock assessment it indicated very little change in populations. L. Simpson informed the Subcommittee that funding from the Gulf Disaster Fund may be allocated to do the red drum survey.

Election of Officers

* T. Cody, on behalf of the Subcommittee thanked Walter Tatum for his excellent job in being the SEAMAP Subcommittee chairman for all of these years. The nominating committee nominated Richard Waller for Chairman and Jim Hanifen for Vice Chairman. T. Cody moved to accept these nominations by acclamation. M. Leiby seconded and it passed unanimously.

Other Business

T. Cody informed the Subcommittee that the southern division of the American Fisheries Society will hold a meeting in San Antonio in February 1997. He said with the Subcommittee's approval he would like to submit an abstract on the SEAMAP Program. The Subcommittee agreed that he should do this and D. Donaldson and R. Peuser will help him with a presentation and/or poster if the abstract is accepted.

R. Waller reiterated that SEAMAP should have a traveling display to be used at meetings such as the American Fisheries Society. It could be used for presentations and should have slides, overheads, videos, etc. from boat work and could be housed at the Commission office. All agreed that this would be a worthwhile project to pursue.

T. Cody said he also has information on the red tide, public outreach and tarpon study in Texas if anyone is interested.

R. Waller said just for FYI that when he was in D.C. working on SK proposals, in reference to red tide, there were several proposals submitted that involved developing electronic probes to be able to field test quickly the presence of toxins from various types of blooms in both animals and

in the water column. He said he assumed this would be used for rapid identification so certain areas could be closed if necessary particularly for shellfish beds.

J. Shultz asked that in reference to the SEAMAP fall plankton survey, if Louisiana will plan to do the cruise earlier in the season, preferably the third week of September. The reason being they can do the federal sampling in Louisiana at the same time. She also asked if Florida could start the first week of October and that would improve the coordination of the timing of the survey.

There being no further business, the meeting adjourned at 3:50 p.m.

ATTACHMENT I

David Stanley from the Coastal Fisheries Institute at the Louisiana State University gave a slide presentation on research he has done around gas/oil platforms for the last five years. This project has been funded over the years by the Louisiana Department of Wildlife and Fisheries, offshore oil companies, and most recently the Minerals Management Service.

He showed a slide of the distribution of oil and gas platforms in the northern Gulf of Mexico. He said he views this as the largest artificial reef program in the world although it wasn't designed as that. The slide represents approximately 4,000 platforms. While the effects of the discharges are generally well known, it hasn't been established what the impacts of the physical presence of the platforms themselves are. He said this was a goal of their research. He then showed a slide of their various research stations. The initial research took place in western Louisiana at about 50 miles offshore. The current MMS project is around three platforms which happen to be right in the middle of an hypoxic area. Another goal of the project is to determine or profile the species composition and the number of fishes at these sites and how it changes with depth. One of the reasons little is known about the assemblage of fishes around these platforms is the difficulty in sampling.

Traditionally, visual surveys are used when sampling artificial reefs. While that works fairly well in coral reef situations it doesn't work well in the northern Gulf. Visual surveys are of limited value because of the nephloid layer and deeper depths in the Gulf of Mexico. Also, earlier surveys showed the presence of scuba divers reduced fish density by 50% around a petroleum platform, so visual surveys by divers bias results. It also decreases the mean size.

Dual beam hydroacoustics were used for this project. They used the same technique as used in the northwest to sample fishes associated with hydroelectric facilities. The northwest was having the same problems as the Gulf in that traditional fishery sampling methods can not be used around those structures. The hydroacoustics is basically a fishery sonar system. By the amount of energy that is reflected, you can determine how large the object is, where in the water column the object is, and how many objects are there. It detects mainly fish, not trash so it works well for sampling around the platforms. The system is not affected by visibility so sampling can be done 24 hours a day and it's unobtrusive, the fish can't detect it. Sampling can not be done within the confines of the platform itself because of the structural cross members and turbulence but the system is set up immediately adjacent to the platform. They work from the platform, not vessels and usually sample five days at a time.

Transducers are set up on each side of the platform and with a downward orientation you can see from about 5-10 meters to the bottom. With this set up they miss the fish in the upper water column so they suspend the transducers at a depth of approximately 20 meters then look up towards the surface, thus getting total coverage throughout the water column. They can't sample simultaneously upward and downward because they don't have enough transducers and don't foresee obtaining more in the near future. Because the sonar gear can not identify the species of fish a ROV

is used to do visual surveys. It is used throughout the water column and they sample at the same strata as the acoustic gear. The ROV doesn't seem to have the same voidance as the divers do. They also collect environmental data while doing the surveys and found that hypoxia caused the compression of fishes in the upper water column.

He stated that in summary they feel that the acoustics coupled with the visual surveys is the best available assessment technique around petroleum platforms. Using the two techniques together gives a total view.

SEAMAP Subcommittee Meeting
MINUTES
Biloxi, MS
Monday, March 17, 1997

Chairman Richard Waller called the meeting to order at 1:16 p.m. The following members and others were present:

Members:
Jim Hanifen, LDWF, Baton Rouge, LA
Terry Cody, TPWD, Rockport, TX
Richard Waller, GCRL, Ocean Springs, MS
Joanne Shultz, NMFS, Pascagoula, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL

Others:
Walter Tatum, Foley, AL
Scott Nichols, NMFS, Pascagoula, MS
Buck Sutter, NMFS, St. Petersburg, FL
Ken Savastano, NMFS, SSC, MS
Kaye Williams, Pascagoula, MS
Joe Smith, NMFS, Beaufort, NC
Butch Pellegrin, NMFS, Pascagoula, MS
Perry Thompson, NMFS, Pascagoula, MS

Staff:
Larry Simpson, GSMFC, Ocean Springs, MS
Dave Donaldson, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Adoption of Agenda

Agenda Item 9b will be discussed under Item 7. With this change, the agenda was adopted as submitted.

Approval of Minutes

* Under "Update on SEAMAP Chlorophyll Sampling Proposal to EPA," the Louisiana Department of Wildlife and Fisheries will submit a proposal should be changed to the Gulf States Marine Fisheries Commission will submit a proposal. **With that change, J. Hanifen moved to approve the October 14, 1996 minutes as submitted.** Terry Cody seconded and it passed unanimously.

Administrative Report

The Spring Plankton Survey will be conducted in April/May of this year. The survey will cover Gulf waters from Florida Bay to Brownsville, Texas. This is the Bluefin Tuna cruise and

vessels from Florida and NMFS will participate. The purpose of the survey is to assess abundance of Bluefin Tuna eggs and larvae in the Gulf of Mexico.

The Summer Shrimp/Groundfish Survey is scheduled for June/July of this year. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participate in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico.

The 1997 Marine Directory has been published and distributed to participants and will be distributed to the TCC and Commissioners and Proxies at this meeting. The proceedings of the general session *The Uses of Fishery-Independent Data* has been published and distributed. The draft 1994 Atlas has been distributed for comments and the final copy should be sent to the printer by the end of this month. Work is continuing on the 1995 Atlas and the funds will be obligated to publish this atlas at the end of the month. Hopefully, both Atlases will be distributed by the middle of this year.

To date there has been approximately 750 visitors to the GSMFC SEAMAP home page and D. Donaldson reminded the Subcommittee to set up links to their home pages. The format of the home page has been changed and D. Donaldson is working to get the real time data plots online for this year. When the real time information is mailed, he will note in the memo that the data plots are online for those people who has access to the Internet.

D. Donaldson asked the Subcommittee to review the information he distributed from the Polish Sorting and Identification Center. He said they are receiving information from the Center and things seem to be going well.

In mid-February T. Cody and D. Donaldson gave a presentation at the southern division AFS meeting in San Antonio, Texas. The presentation consisted of slides, printed material and a general overview of SEAMAP. Unfortunately, they were placed in a category of Biological Pollution and Other Topics so they didn't reach a very large audience. They felt this was a good learning experience and would know more what to expect for future meetings. The Subcommittee asked D. Donaldson to go forward on working on a traveling exhibit to be used for these type sessions. The exhibit should include slides, pictures, posters, printed material and anything else pertaining to SEAMAP.

Discussion of SEAMAP Atlas Format and Content

D. Donaldson stated that because of the changes/losses of NMFS personnel, the last two atlases have been delayed. He said that he, P. Thompson and N. Sanders discussed exploring the possibility of streamlining the atlas--possibly having it on a PC-Based level so it will be easier to process. K. Savastano suggested that before this is approved, to have a cost estimate of what it will take to streamline in terms of man hours, contractor time, operational time, etc. D. Donaldson also suggested possibly removing the twelve temperature plots in the atlas because the information is difficult to obtain and to plot and it really doesn't provide that much usefulness and it is not a SEAMAP activity. J. Hanifen disagreed stating that with the hypoxic area off Louisiana, this information can be very useful in the future.

* **After discussion, M. Leiby moved to form an ad hoc committee to explore streamlining the atlases and to examine removing/not removing the temperature plots.** J. Shultz seconded it and it passed unanimously. The committee will consist of P. Thompson, N. Sanders, R. Minkler, D. Hanisko and D. Donaldson. The committee will report at the joint meeting on the streamlining ideas and arguments to stop including the temperature plots and the Subcommittee will vote on the recommendations then.

Discussion of Possible SEAMAP Data Management System Presentation

The Subcommittee discussed having someone go to each state to give a presentation on how to use the SEAMAP Data Management System. J. Shultz said the idea evolved when she was asked for location information on left bongo samples and she thought the person should be able to obtain this information on his own. She suggested having a presentation at one of the GSMFC annual meetings, possibly a general session, that would be beneficial to the Subcommittee and others attending the meeting. K. Savastano said a new version of the SEAMAP data management system is currently in progress and will be out this month, but he feels a general session would not be useful because there is no outside access to the Miami computer due to confidential data. To gain access to the Miami computer, you must be a participant on the system and be approved for confidential data. He said they are currently working on a public access system at Stennis that will be available through Internet.

The Subcommittee also discussed the possibility of having a workshop at the joint meeting but decided that not only Subcommittee members need this training but others in their offices and it will be too expensive to have everyone go to Charleston. They would also need to have enough hardware to have a workshop. It was then suggested to wait until the new version was out and everyone had it loaded on their machines before actually having a work shop. The Subcommittee decided that the best place to have a user training work shop would be at Stennis because they would have the hardware capability and it wouldn't cost too much in travel. The Subcommittee also asked K. Savastano if he could possibly have a condensed instruction sheet with the new version along with the user manual. D. Donaldson said the Subcommittee will have to prioritize upcoming meetings because if they do have the work shop, they may not be able to afford work group meetings. The Subcommittee will invite the South Atlantic if they do have the training work shop.

Update on SEAMAP Chlorophyll Sampling Proposals/Environmental Data Work Group Report

J. Hanifen said that the proposal submitted to NASA was not funded and the peer reviews were not very favorable. D. Donaldson said they have not received a response from EPA yet but he has tried contacting R. Herring to see where it stands. The Subcommittee discussed the importance of all participants using the same method for sampling chlorophyll then Perry Thompson, submitted the following Environmental Work Group Report:

> At this time due to manpower constraints and funding, the Mississippi Laboratories cannot continue the spectrophotometric analyze of all the chlorophyll samples (chlorophyll a) that are collected by the SEAMAP participants. We are collecting and will continue to collect chlorophyll with the CTD mounted fluorometer. Also, other environmental data such as temperature, depth, salinity, turbidity and dissolved oxygen will still be collected with the

CTD. We can collect environmental samples or biological samples for an agency, pending priority requirements during a cruise. We do have room aboard our research vessel for those who want to collect environmental or biological samples.

The Mississippi Laboratories will offer their laboratory equipment to SEAMAP participants who would like to analyze their own samples. The CTD data profiles (1992 to 1996) are presently being sent to the Naval Oceanographic Office at the Stennis Space Center to be edited and will be available in the near future to the SEAMAP participants upon request. The spectrophotometric chlorophyll data are in the SEAMAP data files.

The Mississippi Laboratories will commit to analyzing 150 chlorophyll samples/year for the years 1996, 1997 and 1998 to determine the relationship between the CTD fluorometer data and the spectrophotometric data (if that is what the Subcommittee wants). An Environmental Data Work Group meeting needs to be called to determine the allocation of the 150 samples to be collected, i.e., season, location, number of replicates per area, etc. Also, it needs to be decided on who will analyze these data. The last time the Environmental Work Group met was in March of 1995.

* The Subcommittee discussed the issue further and agreed the fluorometer method is probably the best method available but the issue needs to be resolved. **J. Hanifen moved to charge the Environmental Data Work Group to meet as soon as possible to specifically address the question of chlorophyll methods, including priorities for the 1997 data collections, analysis of NMFS historical profile data, processing of the 1996 data, processing of salinity samples and resolving any other associated environmental data questions. The Work Group needs to make a recommendation to the Subcommittee at least with regards to the 1997 data, prior to the Summer Shrimp/Groundfish cruise and have a complete report in August at the Joint Subcommittee meeting.** J. Shultz seconded and it passed unanimously.

Presentation of Comparative Tow Results

B. Pellegrin gave a presentation of the Comparative Tow Results. The presentation is attached (Attachment 1). He stated that there were no significant differences in the RV Tommy Munro, Verrill, Pelican or Oregon II. A summary of the results is as follows:

* Nineteen of twenty-four species indicated no significant differences between vessels.

* Overall, NOAA Ship Oregon II caught greater numbers of eleven species and RV Tommy Munro, thirteen.

* Overall ratio of numbers caught by NOAA Ship Oregon II:RV Tommy Munro was 1.01:1.00.

* Of the five species indicating significant differences, NOAA Ship Oregon II caught significantly greater numbers of three species and RV Tommy Munro, two.

* Of the species indicating significant differences, there didn't appear to be a pattern of either vessel's net sampling a niche significantly more efficiently.

* Observed significant differences may have been due to non-random encounters of species aggregations.

Work Group Reports

Data Coordinating Work Group

K. Savastano distributed the SEAMAP Data Management Report (Attachment II) and reviewed each item. He said that since the October meeting, data processing of the 1996 data and the 1982-87 Gulf data is in progress, the processing of the 1994 SEAMAP Atlas has been completed and processing of the 1995 Atlas is approximately 60% complete, 13 data requests have been filled, version 3.22 is expected to be completed at the end of March, and the SEAMAP on-line data base now contains 352 cruises with a total of 2,447,860 records. He also stated that a decision needs to be made on the chlorophyll and salinity data so they can finish processing the 1995 atlas.

Other Business

T. Cody updated the Subcommittee on the red tide off of Texas last year. He stated that at this point it seems spawning and large red and black drum hasn't been negatively impacted by the red tide.

J. Hanifen suggested the Subcommittee may want to do an in depth review, a complete reevaluation of the SEAMAP because of the changes in technology and funding problems. It was decided to have this as an agenda item at the joint meeting for the whole committee to discuss.

M. Leiby said Florida has approximately 1,000 samples that were taken by SEAMAP protocol that needs to be identified and sorted. He asked if it would be possible to send these samples, maybe in stages, to Poland. J. Shultz stated that Poland is asking for more funding if they continue to send more samples but she and M. Leiby will try to resolve this.

B. Sutter stated the final reports are due April 30, 1997 for the period of February 1, 1994 through January 31, 1997.

There being no further business, the meeting adjourned at 4:40 p.m.

SEAMAP Subcommittee Meeting
MINUTES
Charleston, SC
Sunday, August 3, 1997

Chairman Richard Waller called the meeting to order at 8:32 a.m. The following members and others were present:

Members:
Richard Waller, USM/IMS/GCRL, Ocean Springs, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL
Joanne Shultz, NMFS, Pascagoula, MS
Richard Leard, GMFMC, Tampa, FL
Steve Heath, ADCNR/MRD, Dauphin Island, AL
Terry Cody, TPWD, Rockport, TX
Jim Hanifen, LDWF, Baton Rouge, LA

Others:
Walter Tatum, Foley, AL
Scott Nichols, NMFS, Pascagoula, MS

Staff:
Dave Donaldson, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Adoption of Agenda

Agenda Item 8c does not have to be discussed and K. Savastano will not be here to give the Data Management Report (7a). With these changes, the agenda was adopted as submitted.

Approval of Minutes (3/17/97)

* Under the update of Chlorophyll sampling, spectrophotometric analyze needs to be changed to analysis, and the underscore in this sentence needs to be deleted. **J. Hanifen moved to accept the minutes as amended.** J. Shultz seconded it and it passed unanimously.

Administrative Report

The Summer Shrimp/Groundfish Survey was conducted in June/July of this year. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participated sampling 315 stations. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. From this survey, there were 7 weekly mailings of real-time data that were distributed to approximately 280 interested individuals and organizations. This information (plots) was also available via Internet and there were approximately 5-10 hits a week.

He also stated that in reference to receiving the real-time data from the states, that NMFS, Mississippi Laboratories, has a very basic data-entry system for this real-time data information. He

asked that if the software was provided, will the states consider entering their information using the new software and sending the information via E-mail to D. Hanisko at NMFS. After discussion, the Subcommittee was concerned with possible problems in doing this but they asked D. Donaldson to send them the software ASAP so they can try this to see if it works before next year's mailings begin.

The Reef Fish Survey began in July and is continuing to date. Vessels from NMFS, Alabama and Texas participate in this survey and the purpose of the survey is to assess relative abundance and compute population estimates of reef fish using a video/trap technique. J. Shultz stated that due to funding problems, NMFS was on the verge of bringing the cruise back from south Florida, but the NOAA Corps Office of Operations contributed funding to continue the survey so they will have a complete 1997 Reef Fish Survey.

The 1994 Atlas was completed and has been received from the printer and the 1995 Atlas was completed and is at the printer. To save postage, both Atlases will be distributed together. Work is currently being done on the 1996 Atlas and hopefully it will be completed by the end of the year. After the 1996 atlas is completed, the atlases will be only one year behind which has been a goal of the Subcommittee.

D. Donaldson said the GSMFC now has a new Internet provider and prior to this change, the SEAMAP home page had approximately 800 hits. The SEAMAP home page has had approximately 80 hits with the new provider and the address has changed: SEAMAP - www.gsmfc.org/seamap.html; GSMFC - www.gsmfc.org. He also reminded everyone to establish links to SEAMAP from their home pages and to contact him to establish links to their home page.

D. Donaldson said that earlier in the year, there was a request to use SEAMAP Bluefin tuna larvae for stock identification and the Subcommittee agreed that this would be an acceptable activity but decided that some of the larvae should be saved for future reference and use.

R. Waller stated that Admiral Toban, the chief oceanographer for the Navy, went out on the R/V TOMMY MUNRO with them and he asked about SEAMAP and was very impressed with the program and the equipment on the TOMMY MUNRO. He asked D. Donaldson to send Admiral Toban information on SEAMAP. The Subcommittee will discuss, under other business, drafting a letter or proposal to Admiral Toban asking for possible funding for the data management program or intercalibration of the environmental sensing equipment and justify this by stating the Navy uses this information. Even though the data management portion is long-term, a short term infusion of funds will help to catch up.

Status of FY 1998

The House and Senate mark for SEAMAP funding in 1998 is level funding which is $1.2 million.

Activities and Budget Needs for FY 1998

a. Florida - the Lab is discussing changing overhead rates again and if they do, Florida will have no money left for sea days. They are now at a minimum on sea days and with the

lack of personnel, M. Leiby spends a high per cent of his time doing data entry. Also, there is another reorganization at the Lab and he has been charged with justifying their collections including the SEAMAP ichthyoplankton collection. Florida will try to continue at level funding - $93,480.

b. Alabama - will attempt to continue all surveys at level funding - $68,000.

c. Mississippi - the university is also charging more in overhead (45%) but in the past the money was directed back to the Lab. If the money stays in Hattiesburg, there is no way Mississippi can do any surveys and if this happens, they will not submit a proposal. If the university does not charge the higher rate, they should be able to continue all surveys at level funding - $94,495.

d. Louisiana - will attempt to continue all surveys at level funding. Historically, the university has not charged any indirect costs to SEAMAP but the financial office is charging all new projects approximately 31% in indirect costs. Since this is an established project, SEAMAP should not have to pay. Also, ship expenses have increased. If we are charged indirect costs and if ship time increases too much, we'll only be able to do the summer and fall surveys. Level funding is $120,700.

e. Texas - they are in the process of completing all activities from last year. Texas is interested in doing more standard trap/video drops and will try to piggyback on as many trips possible. T. Cody asked if there is any equipment available for Texas to use on some of their other boats. He said Texas' artificial reef program is going well and they may be able to tie into that for these surveys. They will try to continue operating on level funding - $54,804.

f. GSMFC - will try to continue on level funding but this will allow only one work group meeting. The work group meetings are important and is a major concern to everyone. If the next meeting is in the Caribbean, GSMFC will need an extra $2,000 because that higher cost has not been budgeted for next year. Level funding is $80,564.

Work Group Reports

1. Data Management Activities - K. Savastano was not present at the meeting but he will send the Data Management Report (Attachment I) and it will be distributed to the SEAMAP Subcommittee.

2. SEAMAP Atlas Recommendations - The Data Coordinating Work Group met (via conference call) on Wednesday, April 23, 1997. The main purpose of the call was to discuss recommendations regarding streamlining the SEAMAP Atlas. An ad hoc work group met and developed several recommendations for the group to consider. During the discussions, it was noted that the main purpose of the SEAMAP Atlas is to provide a general summary of the SEAMAP data collected during a specific year. The group reviewed and discussed the suggestions and request the Subcommittee to consider the

following recommendations and then ask for TCC approval. K. Savastano will also submit a report (Attachment II) from the Data Coordinating Work Group stating the changes/modifications were reviewed and accepted by the Work Group.

Recommendation 1 - Combine the 20-ft and 40-ft data for the species composition and the A & B Tables into one species composition and A & B Table.

Discussion by ad hoc work group: The rationale for this action is that the Atlas is a summary document and there may not be a need for this much detail as well as the information for the figures is not separated. The work Group suggested that a statement be added in the text of the Atlas and/or in the Table Heading pointing out that this is summarized data and original data (separated by trawl types) is available to users for their further investigation, if desired. This action will not incur additional cost to implement.

Discussion by the Subcommittee: the Subcommittee agreed that these changes can be made and it should cut the page numbers significantly, but in the text describing the Tables, it must be explained fully that in certain statistical zones it is a combination of 20 and 40 ft trawl data and if more specific information is needed, contact the data manager. Also, a foot note or description in the text needs to be included on how the data was standardized. The table headings must also be modified to reflect the changes.

Recommendation 2: For the A Tables, condense the depth stratum from 0-5, 6-10, 11-20, 21-30, 31-40, and over 40 to 0-20, 21-40, and over 40.

Discussion by ad hoc work group: Again, the rationale is that the document is a summary of the data and there may not be a need for this much detail. This action will incur additional costs to implement because the Atlas software will have to be reprogrammed.

Discussion by the Subcommittee: The Subcommittee does not want to change the stratums because the difference in organisms is quite significant from 0-20 fm. The Subcommittee suggests using the same strata but to rearrange the columns. Have only 3 columns for each strata with the mean number on top and the SEM on bottom in parenthesis. An example of the change is attached (ATTACHMENT III). The software will have to be modified to print in that format. D. Donaldson will ask D. Hanisko to investigate to see if these changes can be made and he will report to the Subcommittee.

Recommendation 3: Add 20 and 50 fm contours to the plots.

Discussion by ad hoc work group: the rationale for this recommendation is that the contours will provide users reference points for where the catches occurred and enable them to better utilize the document. This action will not incur additional cost to implement.

Discussion by Subcommittee: the Subcommittee agreed to make this change with no further discussion.

Recommendation 4: Change the plots to reflect contours lines/concentric circles, etc. instead of the actual numbers.

Discussion by ad hoc work group: The information will still be in number/hr and pounds/hr but presented in a more user-friendly format. It will enable users to quickly assess the catch rates throughout the sample area and thus make the Atlas more useful. Some examples have been generated and distributed. This action will incur additional costs to implement since different software will need to be used/developed to create these plots.

Discussion by Subcommittee: D. Donaldson informed the Subcommittee that after investigating this change, the software could not be modified to allow this so the Subcommittee does not need to discuss it.

Recommendation 5: Include only Texas through Alabama for the scope of the plots.

Discussion by ad hoc work group: Since there is no trawl sampling in Florida waters, it will be useful to narrow the geographic scope of the plot. This will allow for a more focused area to be presented and provide more resolution of the area sampled. This action will not incur additional costs to implement.

Discussion by Subcommittee: The Subcommittee agreed to make this change with no further discussion.

Recommendation 6: Remove the sea surface temperature plots.

Discussion by ad hoc work group: Currently, this information is either downloaded from the Internet or received via fax, and NMFS personnel spend a large amount of time modifying the information for inclusion in the Atlas. The amount of effort devoted to this activity does not appear to be a wise use of resources. Also, the information for the sea surface temperature plots is not SEAMAP data. The group is exploring different methods for getting this information; however, the current method is not a good use of personnel and the group recommends removing the plots. This action will not incur additional costs to implement.

Discussion by Subcommittee: the Subcommittee agreed to remove the plots but a statement must be added in the text indicating the information was formerly provided and then state the alternative sources to obtain the information.

The Subcommittee accepted the recommendations but would like to see a draft of the changes in the text and tables before final approval.

b. Environmental Data

1. J. Shultz read the Environmental work group report prepared by P. Thompson (Attachment IV).

2. Recommendations regarding chlorophyll sampling - J. Hanifen informed the Subcommittee that since the EWG conference call, another question has come up on the fluorometric/spectrophometric issue. It seems some of the fluorometric values that have been entered into the data set are being entered as chlorophyl but they are not corrected chlorophyl data, they are total fluorescence. The 95 Atlas

has a new column in the Environmental data that is fluorescence. In order to go from flourescence to chlorophyl the instrument has to be calibrated at least once a day in order to develop a calibration curve to be able to go from flourescence to chlorophyl. Also, before going to a different body of water, the curve has to be developed again. There has been people requesting this data and we do not think they are aware of this situation. Gear codes are on the station sheets but if the individuals do not ask for that information specifically, they do not know because it's not flagged in the data set. The Subcommittee agreed that all documents need to be changed indicating the data is fluorescence, not just chlorophyll data and the data set should be corrected also. NMFS and Louisiana are still working on the comparison data and J. Hanifen will give a report at the October meeting. At that point the Subcommittee will decide how to handle this situation. It was also suggested that this could be another justification to Admiral Toban asking for funding to standardize equipment and to develop an intercalibration curve to be able to convert historical data to the extent possible.

Preparation of Cooperative Agreements

D. Donaldson distributed the 1998 Operations Plan and the NMFS Portion of the Cooperative Agreement and asked to please review and send any comments to him before August 18, 1997.

Other Business

R. Waller and D. Donaldson will develop a draft letter to Admiral Toban asking for possible funding. The letter will be distributed to the Subcommittee for review before mailing to Admiral Toban.

J. Shultz informed the Subcommittee that the PSC is short on funds.

There being no further business, the meeting adjourned at 12:05 p.m.

APPENDIX B

1998 SEAMAP OPERATIONS PLAN

SEAMAP-GULF OF MEXICO

OPERATIONS PLAN

January 1, 1998 - December 31, 1998

INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/University program for collection, management and dissemination of fishery-independent data and information in the southeastern United States. The program presently consists of three operational components, SEAMAP-Gulf of Mexico, which began in 1981, SEAMAP-South Atlantic, implemented in 1983, and SEAMAP-Caribbean, formed in 1988.

Each SEAMAP component operates independently, planning and conducting surveys and information dissemination in accordance with administrative policies and guidelines of the National Marine Fisheries Service's Southeast Regional Office.

Organizations directly involved in planning and managing the Gulf's program are the marine fishery management agencies of Florida, Alabama, Mississippi, Louisiana, and Texas, the National Marine Fisheries Service (NMFS), the Gulf of Mexico Fishery Management Council (GMFMC) and the Gulf States Marine Fisheries Commission (GSMFC) which administers the Gulf program. Sea Grant Directors are also asked to attend and participate in SEAMAP-Gulf Subcommittee meetings.

A five year *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000* has been developed for the SEAMAP outlining goals and objectives; management structure and responsibilities; data collection activities along with management and dissemination of the data; and financial and personnel resources necessary for successful operation of the program. This Management Plan, along with the *1981 SEAMAP Strategic Plan, SEAMAP Operations Plan: 1985-1990 and SEAMAP Management Plan: 1985-1990* should be considered as charter documents defining and guiding operations of the Gulf program. An external review of SEAMAP-Gulf and South Atlantic was performed in 1987, and endorsement of specific recommendations was adopted by consensus of the joint SEAMAP-Gulf Subcommittee and SEAMAP-South Atlantic Committee. These recommendations, as implemented, will guide activities and operations of SEAMAP-Gulf, as well as the South Atlantic and Caribbean components.

Five major goals were outlined in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000* and remain as key missions:

(1) Collect long-term standardized fishery-independent data on the condition of regional living marine resources and their environment;

(2) Cooperatively plan and evaluate SEAMAP-sponsored activities;

(3) Identify and describe existing non-SEAMAP data bases and activities that are of value in fishery-independent assessments of regional living marine resources;

(4) Operate the SEAMAP Information System for efficient management and timely availability of fishery-independent data and information; and

(5) Coordinate and document SEAMAP activities, and disseminate programmatic information.

Each of these goals is implemented by several objectives requiring specific tasks and events, e.g. a Summer Shrimp/Groundfish Survey. By intent, some specific tasks may fulfill more than one objective. Each of the participants in the Gulf program receives a portion of the annual Congressional allocation to perform tasks associated with the goals. Participants also contribute significant in-kind support for activities.

The SEAMAP-Gulf and South Atlantic committees, meeting jointly in January 1988, accepted the Program Review recommendation to develop separate annual operations plans. This eighth SEAMAP-Gulf Annual Operations Plan describes planned activities and events for the period January 1, 1998 through December 31, 1998. Detailed information on Gulf program objectives, activities, administrative procedures, data management protocols, information dissemination and funding requirements are found in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000.*

SURVEYS

Spring and Fall Plankton Surveys

The objectives of the spring and fall plankton surveys are to provide data on the distribution and abundance of eggs and larvae of commercial and recreational species such as bluefin tuna, mackerels, carangids, sciaenids and clupeids. Station locations are in a systematic grid across the northern Gulf in increments of 30 minutes latitude/longitude. Frontal satellite-determined boundary locations are also sampled during the spring survey.

Plankton samples will be taken with standard SEAMAP bongo and neuston samplers. The bongo sampler consists of two conical 61-cm nets with 333 micron mesh. Tows are oblique, surface to 5 m above the bottom (or 200 m maximum) and back to surface. Wire angle will be maintained at 45°. Neuston samples will be taken with 947 micron mesh nets on 1 x 2 meter frames towed at the surface for ten minutes. All plankton samples are to be initially preserved in 10% buffered formalin and after 48 hours transferred to 95% ethyl alcohol for final preservation. Hydrographic data at all stations will include at a minimum chlorophylls, salinity, temperature and dissolved oxygen, and water color, using the Forel-ule test.

Right bongo samples and neuston samples collected in 1998 from SEAMAP stations will be transshipped by the NMFS Pascagoula Laboratory to the Polish Sorting and Identification Center for sorting and identification, after which they will be returned to the SEAMAP Archiving Center at Florida Marine Research Institute in St. Petersburg, Florida. Left bongo and neuston samples from previous surveys are currently archived at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC) housed at the USM/IMS Gulf Coast Research Laboratory in Ocean Springs, Mississippi.

Reef Fish Survey

The objectives of the survey are to:

(1) assess relative abundance and compute population estimates of reef fish using a trap/video technique;

(2) determine habitat using an echo sounder and video camera;

(3) determine if bioacoustics assessment methodology can be applied to reef fish communities;

(4) collect environmental data at each station; and

(5) collect ichthyoplankton samples at selected reef sites.

The primary purpose of this survey is to assess the relative abundance and compute population estimates of reef fish. Stations are randomly-selected 100 m^2 sites which are designated as "reef areas". Data is collected using the trap/video

methodology where a fish trap containing a video camera is deployed onto the selected reef site. Trap soak time is one hour. In addition, hydrographic and plankton data will be collected.

Summer Shrimp/Groundfish Survey

Objectives of this survey are to:

(1) monitor size distribution of penaeid shrimp during or prior to migration of brown shrimp from bays to the open Gulf;

(2) aid in evaluating the "Texas Closure" management measure of the GMFMC's Shrimp Fishery Management Plan;

(3) provide information on shrimp and groundfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm;

(4) obtain length frequency measurements for major finfish, shrimp and other important invertebrate species to determine population size structures; and

(5) collect ichthyoplankton samples to determine abundance and distribution of eggs and larvae of commercial and recreationally important species.

The sampling strategy will include sites chosen randomly in three areas (east of the Mississippi River, west of the River to the Texas-Louisiana border and off Texas) stratified by depth and statistical area. Trawls will be towed perpendicular to the depth contours and cover a specified depth stratum at each station. Plankton samples will be taken along a ½ degree grid system. Louisiana will take plankton samples at each trawl station.

Fall Shrimp/Groundfish Survey

Objectives of this survey will be to:

(1) sample the northern Gulf of Mexico to determine abundance and distribution of white shrimp and other demersal organisms from inshore waters to 60 fm;

(2) obtain length frequency measurements for major finfish, shrimp and other important invertebrate species to determine population size structures;

(3) collect environmental data to investigate potential relationships between abundance and distribution of organisms and environmental parameters; and

(4) collect plankton samples to determine relative abundance and distribution of eggs and larvae of commercial and recreationally important species.

Trawl sample stations and plankton sampling will be conducted as described for the Summer Shrimp/Groundfish Survey.

OPERATIONS

The following activities and events by participant comprise the SEAMAP-Gulf of Mexico operations schedule for the period January 1, 1998 to December 31, 1998:

Texas Parks and Wildlife Department

(1) Summer Shrimp/Groundfish Survey: June-July, nearshore and offshore Texas waters

(2) Fall Shrimp/Groundfish Survey: November, nearshore and offshore Texas waters

(3) Reef Fish Survey: sampling in Texas waters

(4) Adult Finfish Survey: March-May, nearshore Texas waters

(5) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(6) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Louisiana Department of Wildlife and Fisheries

(1) Plankton sampling in conjunction with trawl surveys

(2) Plankton sample sorting and identification

(3) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(4) Process sediment and chlorophyll samples

(5) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

University of Southern Mississippi/Institute of Marine Sciences/Gulf Coast Research Laboratory

(1) Summer Shrimp/Groundfish Survey: June and July, Gulf waters

(2) Fall Plankton Survey: September, nearshore and offshore Gulf waters

(3) Fall Shrimp/Groundfish Survey: November, Gulf waters

(4) Plankton sampling in conjunction with trawl surveys

(5) SEAMAP Invertebrate Plankton Archiving Center operations

(6) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(7) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Alabama Department of Conservation and Natural Resources

(1) Summer Shrimp/Groundfish Survey: June and July, nearshore Gulf waters

(2) Fall Plankton Survey: September, nearshore Gulf waters

(3) Fall Shrimp/Groundfish Survey: November, nearshore Gulf waters

(4) Reef Fish Survey: sampling in nearshore Alabama waters

(5) Plankton sampling in conjunction with trawl surveys

(6) Quarterly estuarine shrimp/groundfish sampling

(7) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(8) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Florida Department of Environmental Protection

(1) Spring Plankton Survey: May, nearshore/offshore Gulf waters off Florida

(2) Fall Plankton Survey: September, nearshore/offshore Gulf waters

(3) SEAMAP Archiving Center operations

(4) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(5) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

National Marine Fisheries Service, Southeast Fisheries Science Center

(1) Reef Fish Survey: July-August, offshore Gulf waters

(2) Spring Plankton Survey: April-May, offshore Gulf waters

(3) Summer Shrimp/Groundfish Survey: June-July, offshore Gulf waters

(4) Fall Plankton Survey: September-October, offshore Gulf waters

(5) Fall Shrimp/Groundfish Survey: October-November, offshore Gulf waters

(6) Plankton sampling in conjunction with trawl surveys

(7) SEAMAP Information System implementation and operations

(8) Processing and transshipment of SEAMAP plankton samples to the Polish Sorting and Identification Center

(9) Environmental sample processing

(10) Real-time data processing

(11) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

Gulf of Mexico Fishery Management Council

(1) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(2) Annual review of fisheries-independent data needs

Gulf States Marine Fisheries Commission

(1) Coordination of meetings for Subcommittee and work groups

(2) Provision of SEAMAP-Gulf Coordinator, clerical and office support

(3) Publication and distribution of SEAMAP Environmental and Biological Atlas, SEAMAP Marine Directory, SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee, Real-time data summaries, minutes of Subcommittee meetings and co-production of the SEAMAP Joint Annual Report

(4) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(5) Annual Operations Plan development

INFORMATION DISSEMINATION

Data produced from SEAMAP-Gulf of Mexico surveys and studies will be entered into the SEAMAP Information System, in accordance with procedures and protocols stated in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000.* User policies and procedures are also defined in this document.

The SEAMAP Archiving Center and SIPAC have the responsibility of maintaining SEAMAP specimens and samples, processing specimen requests and insuring that archiving and loans are carried out in accordance with guidelines and policies established by the SEAMAP Subcommittee. Specific duties and responsibilities of the curators are found in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan 1996-2000.*

Documents to be produced in the period covered by this Annual Operations Plan are:

(1) SEAMAP Annual Report, in conjunction with South Atlantic and Caribbean;

(2) SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee;

(3) SEAMAP Marine Directory;

(4) Minutes of Subcommittee meetings;

(5) SEAMAP Environmental and Biological Atlas;

(6) Annual Operations Plan;

(7) Real-time Data Summaries of the Summer Shrimp/Groundfish Survey; and

(8) Other pertinent documents deemed appropriate by the Subcommittee

ADMINISTRATION

Program administration is achieved through coordination by the SEAMAP-Gulf Subcommittee and work groups, the SEAMAP Coordinator, and the Gulf States Marine Fisheries Commission. General responsibilities are described below.

SEAMAP-Gulf of Mexico Subcommittee

The Subcommittee will convene for three regularly-scheduled meetings during 1998:

(1) Spring meeting (in conjunction with the GSMFC Annual Spring Meeting): March;

(2) Joint meeting (with SEAMAP-Caribbean & SEAMAP-South Atlantic): August; and

(3) Fall meeting (in conjunction with the GSMFC Annual Fall Meeting): October.

Other meetings may be called at the discretion of the Chairman. Specific responsibilities of the Subcommittee and procedures of governance are described in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000*. Designated members for 1998 are:

Texas Parks and Wildlife Department:	Terry Cody
Louisiana Department of Wildlife and Fisheries:	James Hanifen
University of Southern Mississippi Institute of Marine Science Gulf Coast Research Laboratory:	Richard Waller
Alabama Department of Conservation & Natural Resources:	Stevens Heath
Florida Department of Environmental Protection:	Mark Leiby
National Marine Fisheries Service:	Joanne Lyczkowski-Shultz
Gulf of Mexico Fishery Management Council:	Richard Leard (non-voting)

Work Groups

SEAMAP work groups are formed to assist in planning, coordinating and evaluating program activities. Members of work groups are invited to serve by the Subcommittee and do not have to be members of the Subcommittee. SEAMAP-Gulf work groups and membership for 1998 are:

ADULT FINFISH WORK GROUP

Terry Henwood
National Marine Fisheries Service
Pascagoula Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Mark Leiby
Florida Department of Environmental Protection

John Roussel
Louisiana Department of Wildlife and Fisheries

Robert Shipp
University of South Alabama

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Richard Leard
Gulf of Mexico Fishery Management Council

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

DATA COORDINATING WORK GROUP

Kenneth Savastano, Leader
SEAMAP Data Manager
National Marine Fisheries Service
Stennis Space Center

Stevens Heath
Alabama Department of Conservation and Natural Resources
Shrimp/Groundfish Work Group

Terry Henwood
National Marine Fisheries Service
Pascagoula Laboratory
Adult Finfish Work Group

Mike Murphy
Florida Department of Environmental Protection
Red Drum Work Group

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

Perry Thompson
National Marine Fisheries Service
Pascagoula Laboratory
Environmental Data Work Group

Richard Waller
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory
Chairman, SEAMAP Subcommittee/
Reef Fish Work Group

ENVIRONMENTAL DATA WORK GROUP

Perry Thompson. Leader
National Marine Fisheries Service
Pascagoula Laboratory

Stevens Heath
Alabama Department of Conservation and Natural Resources

Michelle Kasprzak
Louisiana Department of Wildlife and Fisheries

Thomas Leming
National Marine Fisheries Service
Pascagoula Laboratory

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Carmelo Tomas
Florida Department of Environmental Protection

Richard Waller
Gulf Coast Research Laboratory
University of Southern Mississippi
Institute of Marine Sciences

PLANKTON WORK GROUP

Joanne Lyczkowski-Shultz, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Churchill Grimes
National Marine Fisheries Service
Panama City Laboratory

Alonzo Hamilton
National Marine Fisheries Service
Pascagoula Laboratory

James Hanifen
Louisiana Department of Wildlife and Fisheries

Don Hoss
National Marine Fisheries Service
Beaufort Laboratory

Mark Leiby
Florida Department of Environmental Protection

Harriet Perry
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Rick Shaw
Louisiana State University

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

RED DRUM WORK GROUP

Mike Murphy, Leader
Florida Department of Environmental Protection

Phil Goodyear
National Marine Fisheries Service
Miami Laboratory

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Joseph Shepard
Louisiana Department of Wildlife and Fisheries

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Larry McEachron
Texas Parks and Wildlife Department

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

REEF FISH WORK GROUP
Richard Waller, Leader
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Chris Gledhill
National Marine Fisheries Service
Pascagoula Laboratory

Richard Kasprzak
Louisiana Department of Wildlife and Fisheries

Mark Leiby
Florida Department of Environmental Protection

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

SHRIMP/GROUNDFISH WORK GROUP
Stevens Heath, Leader
Alabama Department of Conservation and Natural Resources

Billy Fuls
Texas Parks and Wildlife Department

James Hanifen
Louisiana Department of Wildlife and Fisheries

Bruce Comyns
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Nate Sanders
National Marine Fisheries Service
Pascagoula Laboratory

SEAMAP work groups will meet as determined by work group leaders. Specific responsibilities of the work groups are described in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000.*

SEAMAP-Gulf Coordinator

The Coordinator's primary responsibility is to assist the Subcommittee in ensuring that the SEAMAP-Gulf component functions efficiently and satisfies user requirements. The *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000,* schedule of events, survey plans, and GSMFC directives constitute the basic documents by which the Coordinator monitors program status, coordinates Subcommittee meetings and operations, anticipates potential problems, and initiates corrective action. Specific responsibilities of the Coordinator are described in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000.*

Gulf States Marine Fisheries Commission

Planning and funds disbursement for authorized SEAMAP-Gulf administrative activities (travel meetings, publications, information dissemination, etc.) are administered by the Gulf States Marine Fisheries Commission under a NMFS/GSMFC Cooperative Agreement, and in accordance with this Annual Operations Plan, GSMFC policies, and Department of Commerce/National Oceanic and Atmospheric Administration policies and procedures.

TABLE OF CONTENTS

INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/university program for collection, management and dissemination of fishery-independent data and information in the southeastern United States. The program presently consists of three operational components: SEAMAP-Gulf of Mexico, which began in 1981; SEAMAP-South Atlantic, implemented in 1983; and SEAMAP-Caribbean, formed in 1988.

Each SEAMAP component operates independently, planning and conducting surveys and information dissemination in accordance with administrative policies and guidelines of the National Marine Fisheries Service's Southeast Regional Office (SERO).

Federal programmatic funding for SEAMAP activities and administration was appropriated in Federal Fiscal Years 1985-1996 (October 1 through September 30). State and Gulf States Marine Fisheries Commission (GSMFC) funding allocations for FY1985-FY1997 were handled through State/Federal cooperative agreements, administered by SERO and the Southeast Fisheries Science Center (SEFSC), National Marine Fisheries Service (NMFS).

In FY1997, SEAMAP operations continued for the sixteenth consecutive year. SEAMAP resource surveys included the Fall Shrimp/Groundfish Survey, Louisiana seasonal trawl surveys, Spring Plankton Survey, Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey and plankton and environmental data surveys. Other FY1997 activities included SEAMAP information services and program management.

This report is the fourteenth 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-Gulf of Mexico activities and accomplishments during FY1997 and proposed SEAMAP activities for FY1998.

Appreciation is gratefully extended to the staff of the Gulf States Marine Fisheries Commission for their considerable assistance in the preparation of this document.

FY1997 SEAMAP RESOURCE SURVEYS

In FY1997, collection of resource survey information continued for the sixteenth consecutive year. The surveys conducted during the year address distinct regional needs and priorities and provide information concerning the marine resources in the Gulf of Mexico.

Fall Shrimp/Groundfish Survey

The Fall Shrimp/Groundfish Survey was conducted from October 8, 1996 to December 5, 1996, from off Mobile, Alabama to the U.S.-Mexican border. Vessels sampled waters out to 60 fm, covering a total of 346 trawl stations, in addition to plankton and environmental sampling.

Sampling design was similar to the Summer Shrimp/Groundfish Survey. The objectives of the survey were to:

(1) sample the northern Gulf of Mexico to determine abundance and distribution of demersal organisms from inshore waters to 60 fm;

(2) obtain length-frequency measurements for major finfish and shrimp species to determine population size structures;

(3) collect environmental data to investigate potential relationships between abundance and distribution of organisms and environmental parameters; and

(4) collect ichthyoplankton samples to determine relative abundance and distribution of eggs and larvae of commercially and recreationally important fish species.

During the survey, the NOAA Ship OREGON II sampled 199 stations in offshore waters and territorial Louisiana and Texas waters. The R/V VERRILL sampled 7 stations in Alabama territorial waters. The R/V TOMMY MUNRO sampled 29 stations in Mississippi territorial and offshore waters. The R/V PELICAN sampled 31 stations in Louisiana territorial and offshore waters. And Texas vessels sampled 80 stations within their territorial waters.

In addition, ichthyoplankton data were collected by NMFS and Louisiana vessels at sample sites occurring nearest to half-degree intervals of latitude/longitude. A total of 50 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. NMFS completed 43 ichthyoplankton stations and Louisiana completed 7 stations. The samples, except those taken by Louisiana, will be sorted by the Polish Sorting and Identification Center (PSIC). Once sorted, the specimens and data will be archived at the SEAMAP Archiving Center (SAC).

Louisiana Seasonal Day/Night Surveys

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

Sampling was conducted aboard the R/V PELICAN during July 1997. A stratified random station selection design was maintained, varying from the transects previously surveyed. During each segment, 24 stations were sampled during day and night at depths from 5 to 20 fm. The June sampling was completed as part of the SEAMAP Summer Shrimp/Groundfish Survey.

All seasonal trawls were completed with the standard SEAMAP net and doors. All organisms captured were identified, counted, measured and weighed. Environmental data and plankton/neuston sampling were conducted at trawl stations as well. Plankton samples were archived and sorted at the LDWF Plankton Laboratory. Specimens and data will be shipped to the SEAMAP Archiving Center in St. Petersburg, Florida. The area sampled covered Louisiana territorial and EEZ waters.

Spring Plankton Survey

For the fifteenth year, plankton samples were collected during the spring in the northern Gulf of Mexico. The NOAA Ships CHAPMAN and OREGON II and Florida's R/V SUNCOASTER sampled offshore waters from the western edge of the West Florida Shelf to the Texas-Louisiana border from April 16 to June 10, 1997. A total of 187 stations was sampled. The CHAPMAN and OREGON II sampled 169 stations and the R/V SUNCOASTER sampled 18 stations along the west Florida shelf.

Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The bongo sampler consisted of two conical 61-cm nets with 333-micron mesh. Tows were oblique, surface to near bottom (or 200 m) and back to surface. Wire angle was maintained at 45 degrees. Neuston samples were taken with 947-micron mesh nets on 1 x 2-meter frames towed at the surface for ten minutes. Right bongo and neuston samples were initially preserved in 10% buffered formalin and after 48 hours were transferred to 95% ethyl alcohol for final preservation. Left bongo samples were preserved via an ethanol/ethanol transfer to aid in preservation of larval otoliths. In addition, hydrographic data (surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom, and Forel-ule color) were collected at all stations.

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

Reef Fish Survey

The sixth Reef Fish Survey began on June 18 and will continue into late fall 1997. Vessels from NMFS, Texas, and Alabama sample inshore and offshore waters, in addition to plankton and environmental sampling. To date, approximately 230 stations have been sampled throughout the Gulf of Mexico. Randomly selected sites from Brownsville, Texas to Key West, Florida are chosen from known hard bottom locations. The objectives of the survey are to:

(1) assess relative abundance and compute population estimates of reef fish using a video/trap technique;

(2) determine habitat using an echo sounder and video camera;

(3) determine if bioacoustics assessment methodology can be applied to reef fish communities;

(4) collect environmental data at each station; and

(5) collect ichthyoplankton samples at selected reef sites.

The primary purpose of this survey is to assess the relative abundance and compute population estimates of reef fish. Stations are randomly-selected 100 m^2 sites which are designated as "reef areas". There are several aspects of the reef fish survey: 1) locating and compiling known hard bottom reef habitat locations; 2) surveying site selection; 3) sampling protocol using a fish trap and video camera and 4) analyzing the video records. Data is collected using the trap/video methodology where a fish trap containing a video camera is deployed onto the selected reef site. Trap soak time is one hour. After trap deployment, hydrographic data including a STD/light meter, transmissometer drop, secchi disk reading and surface chlorophyll samples will be collected. Also, after the last trap/camera set, one ichthyoplankton station will be completed each day with a surface neuston net and Tucker trawl. Environmental and plankton samples collected will use established SEAMAP protocols and plankton samples will be transshipped to the Polish Sorting and Identification Center.

Final analyses of video tapes are accomplished at the Pascagoula Lab, where data is recorded onto standard SEAMAP forms. Tapes are analyzed either in their entirety or by randomly-selected one minute intervals. The determinant factors for sampling are based on whether the reader can identify and count fish entering the camera field of view and record the data.

Summer Shrimp/Groundfish Survey

During the spring of 1997, there was communication between the Shrimp/Groundfish Work Group members to examine the design for the Summer Shrimp/Groundfish Survey and determine the random station locations for each participant.

Objectives of the survey were to:

(1) monitor size and distribution of penaeid shrimp during or prior to migration of brown shrimp from bays to the open Gulf;

(2) aid in evaluating the "Texas Closure" management measure of the Gulf Council's Shrimp Fishery Management Plan; and

(3) provide information on shrimp and groundfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm.

The overall sampling strategy during the 1997 SEAMAP summary survey was to work from the eastern Gulf to the Texas/Mexico border, in order to sample during or prior to migration of brown shrimp from bays to the open Gulf area. The entire survey occurred from June 2 to July 16, 1997.

During the survey, the NOAA Ship OREGON II and R/V TOMMY MUNRO sampled offshore and inshore Gulf waters with 40-ft trawls. Alabama's R/V VERRILL sampled offshore Alabama waters with 40-ft trawls. The R/V PELICAN sampled both Louisiana state waters and offshore waters with 40-ft trawls, and Texas vessels sampled Texas state waters and offshore waters with 20-ft trawls.

A total of 315 trawl samples was taken from coastal and offshore waters out to 50 fm from Mobile Bay, Alabama, to Brownsville, Texas. All vessels took environmental data, including temperature, salinity, oxygen, and chlorophyll at each station.

In June, catch rates of brown shrimp east of the River were very low, with a maximum catch of 10.1 lb/hr of 66-count shrimp. White shrimp catches east of the River were all less than 1.0 lb/hr. The largest pink shrimp catch rate east of the River was 9.0 lb/hr of 26-count shrimp taken in 13 fm of water off the Mobile Bay. Finfish catch rates east of the River were low, with the largest catch of 870 lb/hr with longspine porgy predominating.

In July's samples west of the river (Louisiana) brown shrimp catches were also low with the largest catch rate of 18.3 lb/hr of 41-count shrimp occurring off Vermilion Bay in 16 fm. Catches of white shrimp were extremely low, with all catches less than 2.0 lb/hr. Finfish catch rates were also low with the largest catch rate of 2,330 lb/hr taken on July 10 with Atlantic croaker predominating.

Moderate catches of brown shrimp were made off Texas from June 2 to July 7. The largest catch rate occurred June 29 in waters off Matagorda Bay in 16 fm (57.1 lb/hr of 71-count shrimp). White shrimp catches off Texas were low with the largest catch, 26.5 lb/hr of 15-count shrimp, also taken off Matagorda Bay in 6 fm. Catch rates for pink shrimp were also low off Texas, though the largest catch was 69.3 lb/hr of 32-count shrimp off the lower Laguna Madre in 8 fm. Finfish catch rates were low in Texas inshore and offshore waters. The largest catch of finfish was 2,115 lb/hr in 6 fm off Matagorda Bay with Atlantic croaker predominating.

Fall Plankton Survey

The first fall ichthyoplankton survey to assess abundance and distribution of king mackerel eggs and larvae occurred in August 1984. No sampling survey was conducted in 1985; however, expanded surveys in 1986-1996 and in the current year covered Gulf waters from Florida Bay to Brownsville, Texas. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS began surveying Gulf waters on September 3 and will continue into the first week of October. Stations are located along a 30-minute latitude/longitude grid from inshore waters to the shelf edge.

The NOAA Ship CHAPMAN is sampling stations from Tampa Bay, Florida to Brownsville, Texas at depths from 5 to 100 fm. The R/V VERRILL is sampling stations at the mouth and outside Mobile Bay. The R/V TOMMY MUNRO is sampling stations south of Mississippi Sound along a 30-minute grid. The R/V PELICAN is sampling stations in Louisiana territorial waters. And Florida's R/V SUNCOASTER is sampling stations off Tampa Bay south to the Florida Straits area.

Stations were sampled with standard SEAMAP bongo nets with 333-micron mesh and/or 1 x 2-meter neuston nets fitted with 947-micron mesh. In addition, hydrographic sampling included chlorophylls, salinity, temperature and dissolved oxygen from surface, mid-water, and bottom, and water transparency and water color was conducted at each station. Right bongo samples collected by NMFS and the Gulf States will be transshipped to the PSIC. Left bongo and neuston samples will be stored at the SIPAC at the Gulf Coast Research Laboratory for possible future sorting. Louisiana plankton samples will be sorted by LDWF according to SEAMAP protocols and specimens and data will be provided to the SAC.

Plankton and Environmental Data Surveys

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

Objectives of these piggybacked surveys were: 1) to collect plankton samples throughout the survey area; and 2) to collect associated hydrographic and environmental data at each plankton station. Additionally, environmental data (salinity, temperature, and oxygen from surface, mid-depth and bottom waters, and chlorophyll from surface and bottom waters) were collected during the shrimp/groundfish surveys. Wind direction, wind speed and wave height were taken at all trawl stations.

Samples from the right side of the bongo nets and neuston samples were shipped to the NMFS-Pascagoula Laboratory for shipment to the PSIC, where they will be sorted to the family level (both

ichthyoplankton and selected crustacean and molluscan species). The left bongo sample from each station is retained as a back-up in the event of damage or loss of the specimens and maintained at the SIPAC.

Chlorophyll samples were filtered at each station using GF/C filters. All filters were put in petri disks and wrapped in foil for onboard storage in the freezer. Chlorophyll analysis will be completed ashore. Preservation of plankton samples was in buffered formalin prior to transfer to ethanol.

In addition to these piggybacked surveys, two major SEAMAP plankton surveys were conducted in FY1997, as detailed earlier.

INFORMATION SERVICES

Information from the SEAMAP activities is provided to user groups through the program administration and three complementary systems: the SEAMAP Information System, SEAMAP Archiving Center and SIPAC. Products resulting from SEAMAP activities can be grouped into two major categories: data sets (including broadly, digital data and collected specimens) managed by the SEAMAP Information System, SEAMAP Archiving Center and SIPAC; and program information. Program information is discussed in the *PROGRAM MANAGEMENT* Section of this report.

SEAMAP Information System

Biological and environmental data from all SEAMAP-Gulf surveys are included in the SEAMAP Information System, managed in conjunction with NMFS-SEFSC. Raw data are edited by the collecting agency and verified by the SEAMAP Data Manager prior to entry into the system. Data from all SEAMAP-Gulf surveys during 1982-1995 have been entered into the system and data from 1996 surveys are in the process of being verified, edited, and entered for storage and retrieval. Verified, non-confidential SEAMAP data are available conditionally to all requesters, although the highest priority is assigned to SEAMAP participants. A total of 206 SEAMAP data requests have been received and processed. In some instances, requests were filled promptly; in many cases, however, a substantial lag occurred because of the extremely large amount of data being collected on an increased number of surveys over those of past years. To date, 205 requests have been completed and work is being performed on those remaining.

Requested SEAMAP data were used for a multitude of purposes in FY1997:

- Evaluating the abundance and size distribution of penaeid shrimp in Federal and state waters to assist in determining opening and closing dates for commercial fisheries;
- Assessing shrimp and groundfish abundance and distribution and their relationship to such environmental parameters as temperature, salinity, and dissolved oxygen;
- Identifying environmental parameters associated with concentrations of larval finfish;
- Compiling the 1994 and 1995 SEAMAP Biological and Environmental Atlas; and
- Comparing catches of shrimp and groundfish captured by 40-ft versus 20-ft trawl nets.

Data Management

The requirements report for an integrated data system, *Data Management System Design Study for Gulf and South Atlantic, 1987*, was completed in March 1987. The document identifies the high-level design specifications and recommended implementation plan for a module-based SEAMAP Data Management System (DMS). The design is based on information contained in the SEAMAP Gulf and South Atlantic DMS Requirements Document developed through a cooperative effort between NMFS and other SEAMAP participants. The document has five sections: 1) background and brief descriptions of current centralized and proposed distributed systems; 2) summary of the Requirements Survey; 3) overview of the system's architecture; 4) description of developmental modules constituting the DMS design; and 5) a modular implementation plan which includes costs and schedule.

Work was completed during FY1990 on the new distributed SEAMAP DMS. New modules completed include those for data entry, edit, upload, data query and download. All of the Gulf States are now equipped with the necessary computer hardware and software.

The system is decentralized, i.e., distributed. Thus, the SEAMAP users are able to locally, and directly, enter and retrieve data. Software for the system has been distributed to participants for trial runs of data input.

This system decreases the time necessary to enter and retrieve data and provides powerful and flexible local data analysis and display capabilities. Under the system, each SEAMAP site enters, verifies and edits their data, eliminating the mail-oriented loop necessary to enter/edit/verify data. Secondly, each site has the capability of locally accessing SEAMAP data, utilizing a user-friendly system. Local data retrieval allows the data to be accessed in a timely manner with a minimum amount of effort and programming skills.

Under the system, outside users (e.g., Minerals Management Service, U.S. Army Corps of Engineers, etc.) may request special data sets for research or study. The outside users submit the request to the SEAMAP Subcommittee through the SEAMAP-Gulf Coordinator for approval to proceed. Once the request is approved, the information is provided by the Data Manager and staff members through a priority-based, mail-oriented system. Also, SEAMAP participants may use the Special Request mechanism for data sets too large for economical downloading by telephone. These requests will be handled by a Central Operations staff in the same priority-based, mail-oriented manner as noted above.

Real-time Data

A major function of the SEAMAP Information System in FY1997 was the processing of catch data from the Summer Shrimp/Groundfish Survey as near-real-time data. Data were transmitted three times weekly via cellular phone to the NMFS Mississippi Laboratories from the NOAA vessel, while the states' data were entered into the system weekly. Plots of station locations and catch rates of

shrimp, squid and dominant finfish species were prepared and edited at the NMFS Mississippi Laboratories, and processed by GSMFC for weekly distribution to management agencies, fishermen, processors and researchers. These plots were also available through the SEAMAP home page. Management agencies also received comprehensive data listings showing penaeid shrimp length frequencies, sampling parameters and environmental conditions. Representative listings are shown in Figures 1-9.

Coding Explanation for Specific
SEAMAP Data Listing

Platform:
1 = NOAA Ship OREGON II
2 = R/V TOMMY MUNRO (Mississippi)
6 = R/V VERRILL (Alabama)
7 = R/V PELICAN (Louisiana)
8 = Texas vessels (KEMP, MATAGORDA BAY, SABINE, GALVESTON BAY, LAGUNA MADRE)

Station Number:
E = East Delta
W = West Delta
T = Texas
F = Florida

Date = MO/DAY/YR

Latitude in degrees, minutes, tenths of minutes

Longitude in degrees, minutes, tenths of minutes

Time = nearest hour (military, local time) at start of tow

Depth in fathoms

Temperature (surface and bottom) in degrees centigrade

Surface chlorophyll in mg/m^3

Bottom dissolved oxygen in parts per million

Gear type:
ST = Shrimp trawl
FT = Fish trawl

Minutes fished

Tows = No. of tows at station

Shrimp, finfish, croaker, spot, sea trout, catfish - total catch in pounds at station

Other (dominant species if other than above), see attached code

Pounds of other

Length frequency by species of shrimp:
Weight: Total lbs shrimp caught
Number: Number of shrimp caught
Mode: First no. is mode (mm)/number at mode (0/0 if insufficient number to define mode) Remainder of listing is length frequency in 10 mm groupings (e.g. 100/21 = 21 shrimp at 100-109 mm)

Figure 1. Real-Time Data Listings, 1997 SEAMAP Summer Shrimp/Groundfish Survey

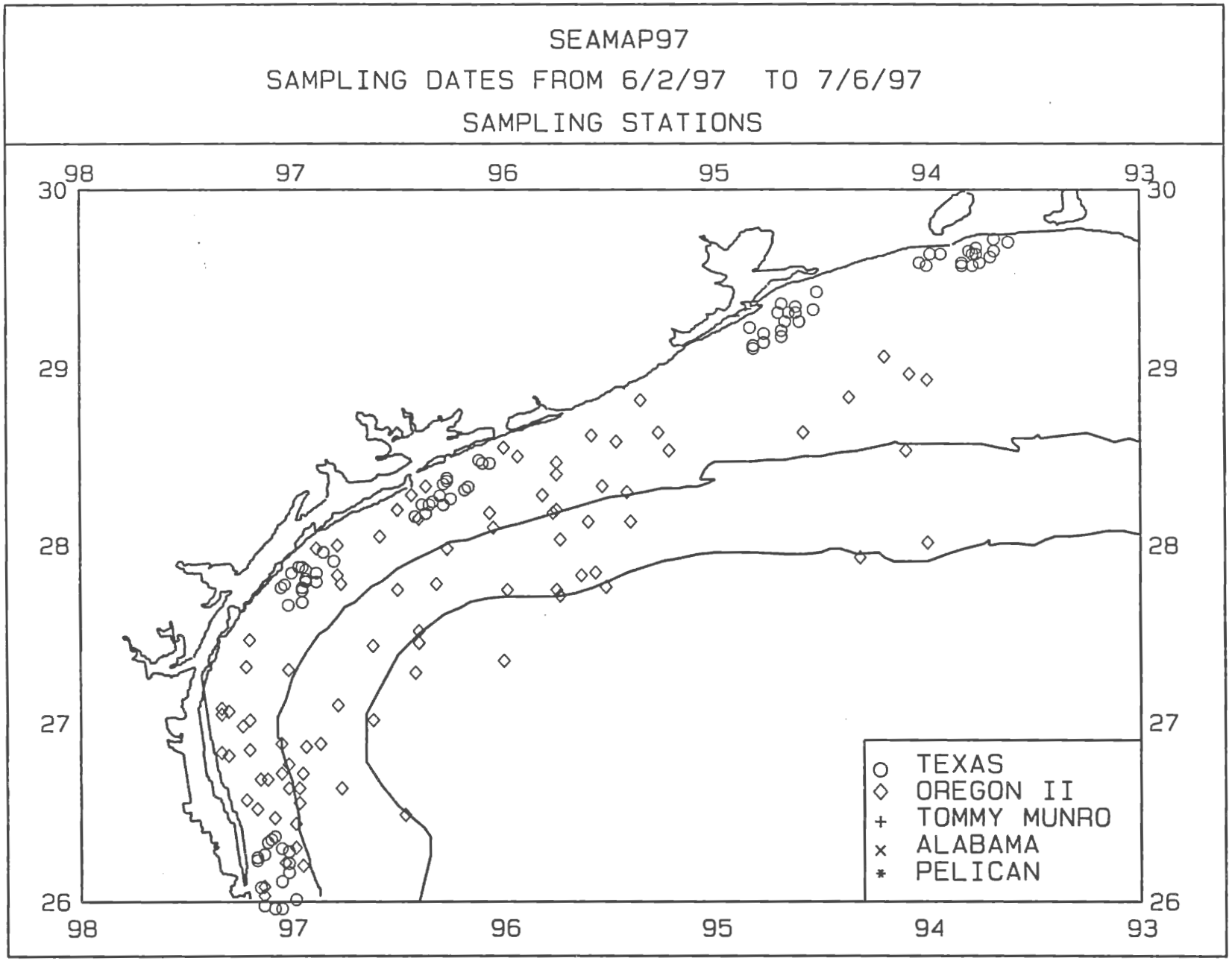

Figure 2. Real-Time Data Catch Plots, 1997

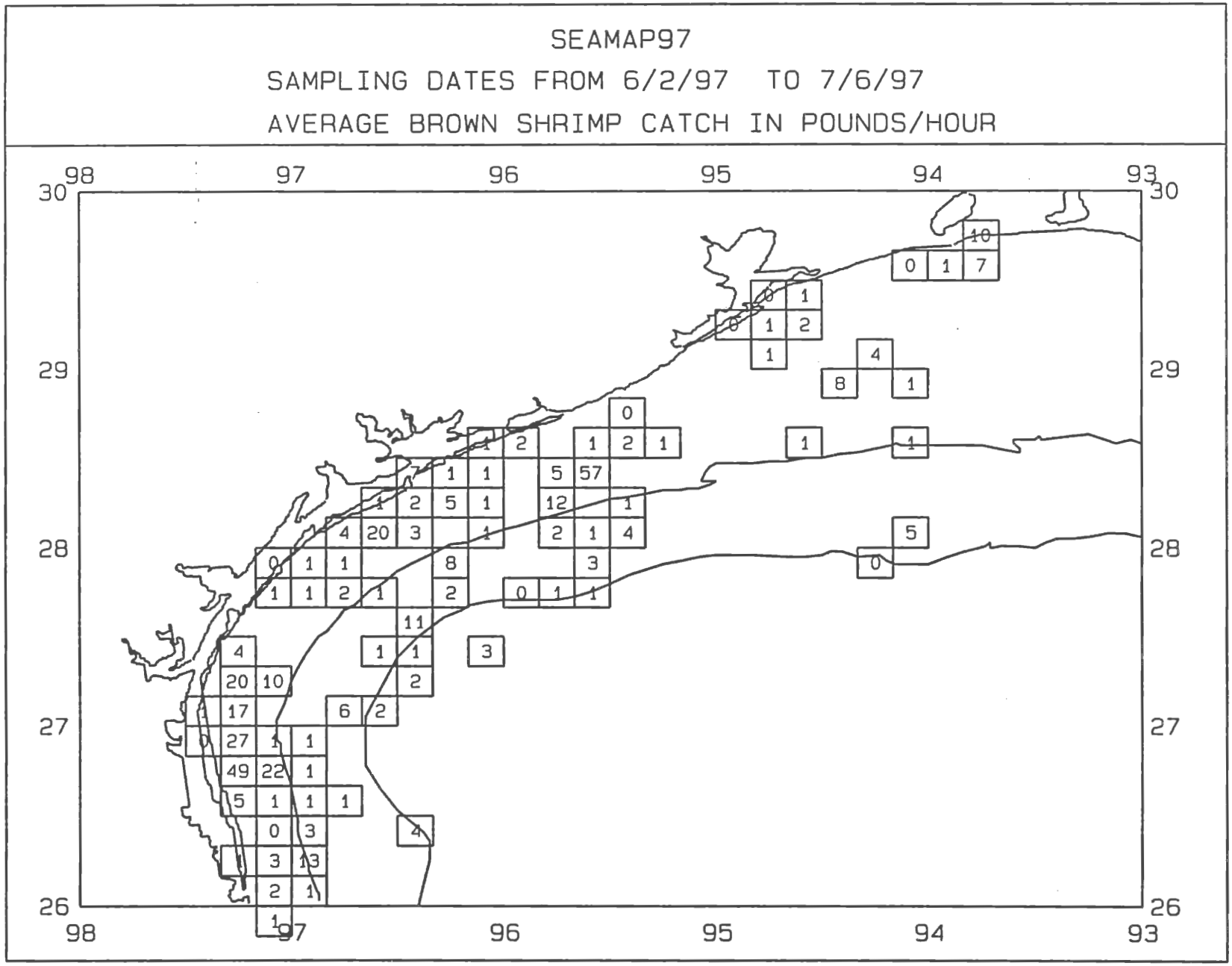

Figure 3. Real-Time Data Catch Plots, 1997

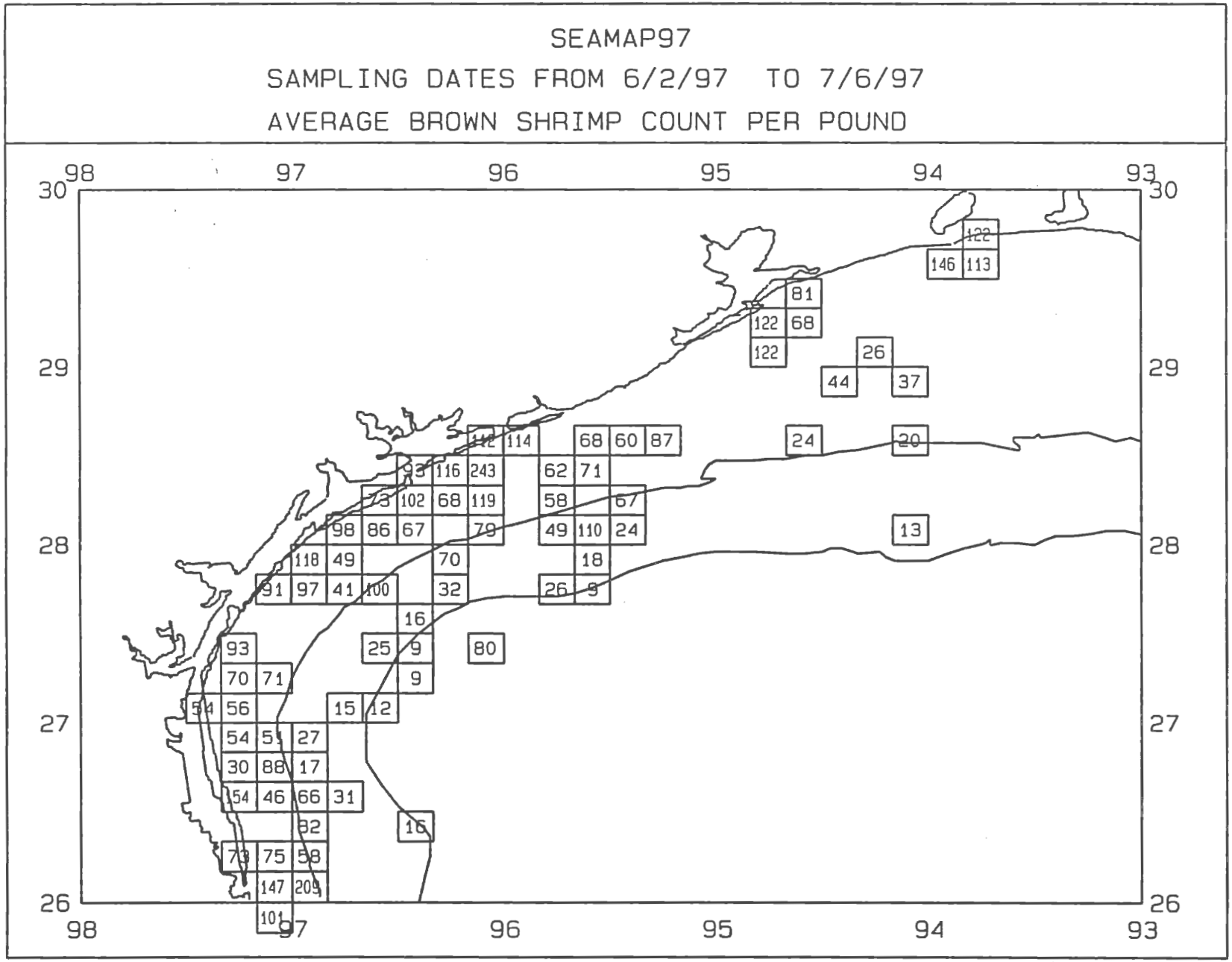

Figure 4. Real-Time Data Catch Plots, 1997

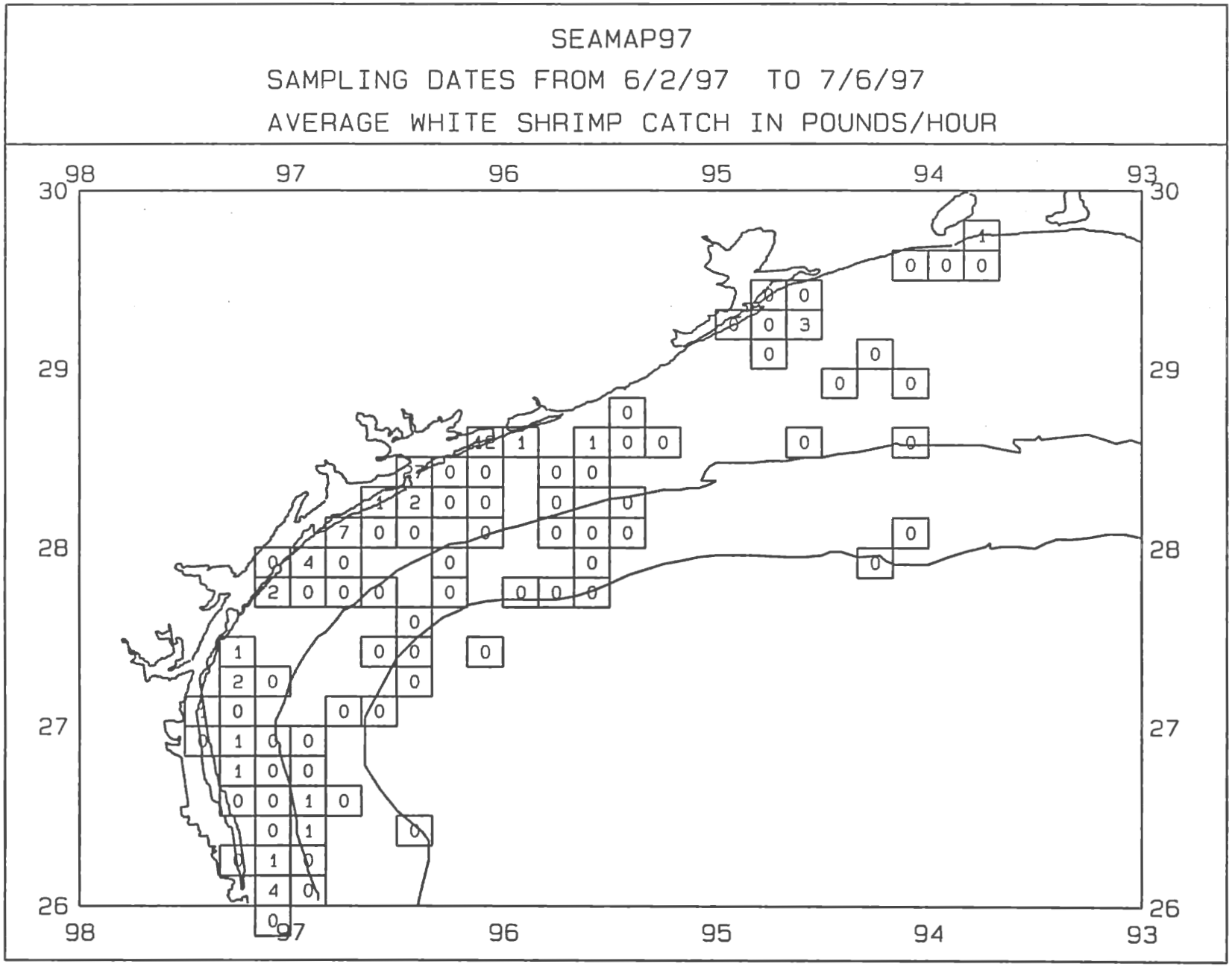

Figure 5. Real-Time Data Catch Plots, 1997

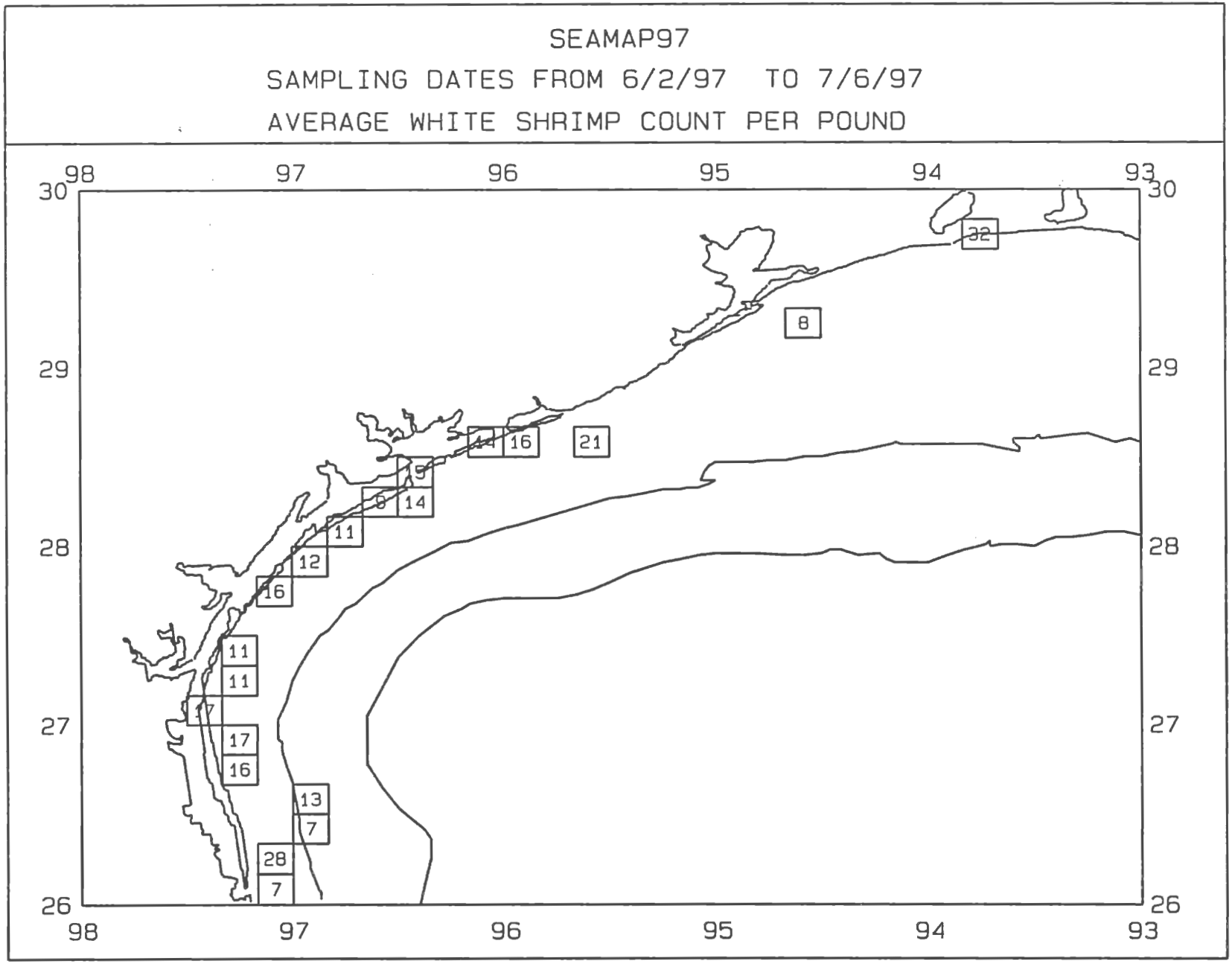

Figure 6. Real-Time Data Catch Plots, 1997

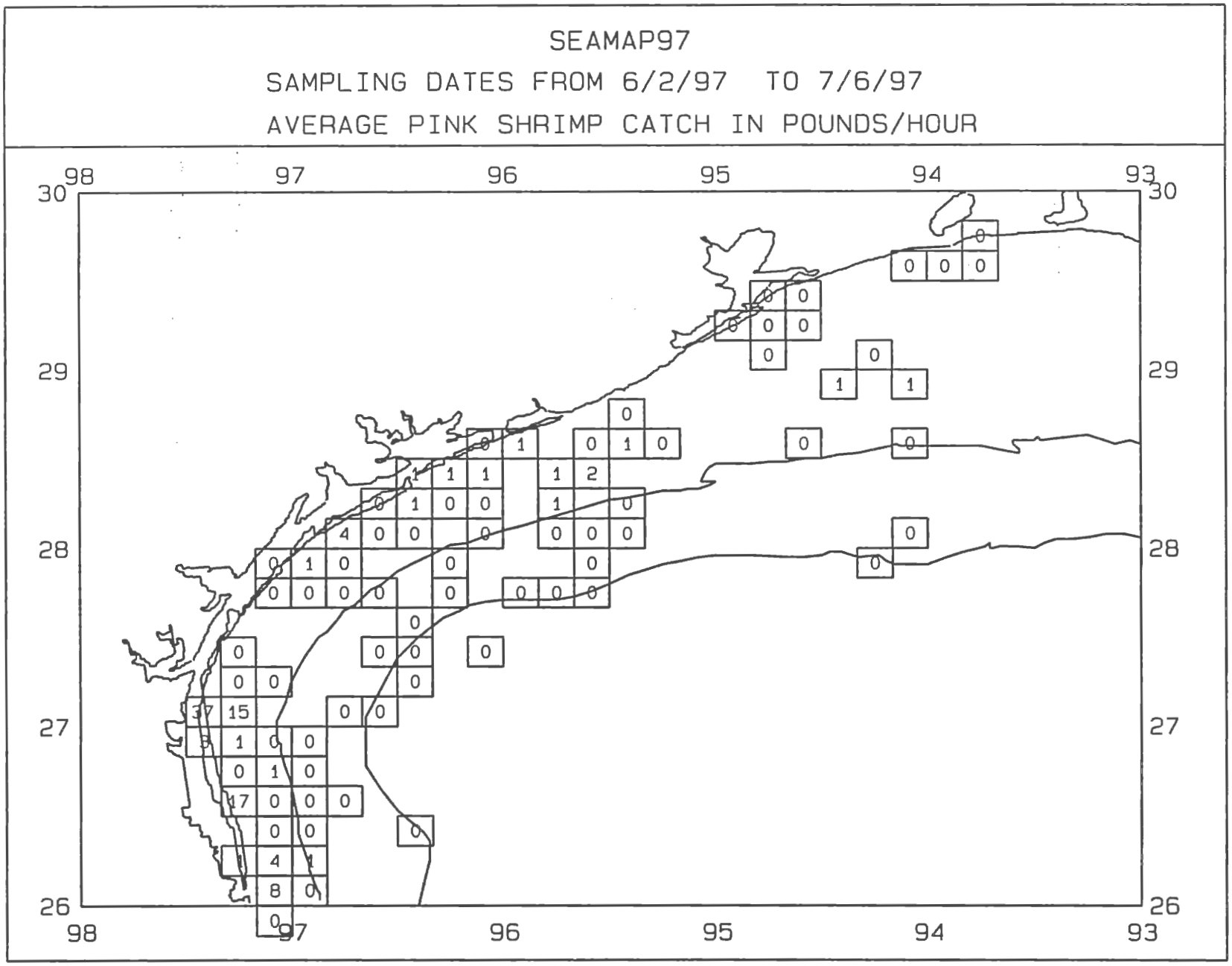

Figure 7. Real-Time Data Catch Plots, 1997

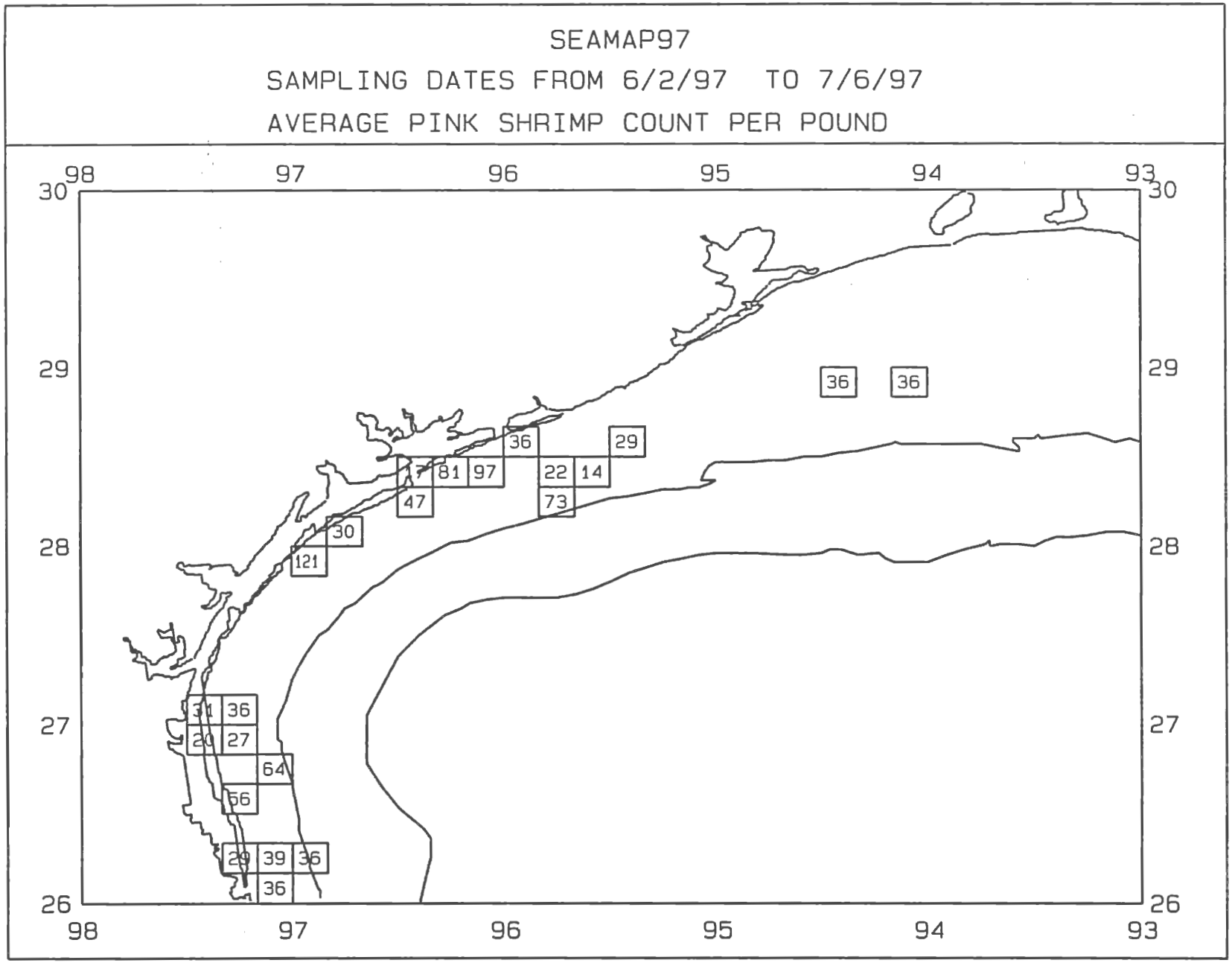

Figure 8. Real-Time Data Catch Plots, 1997

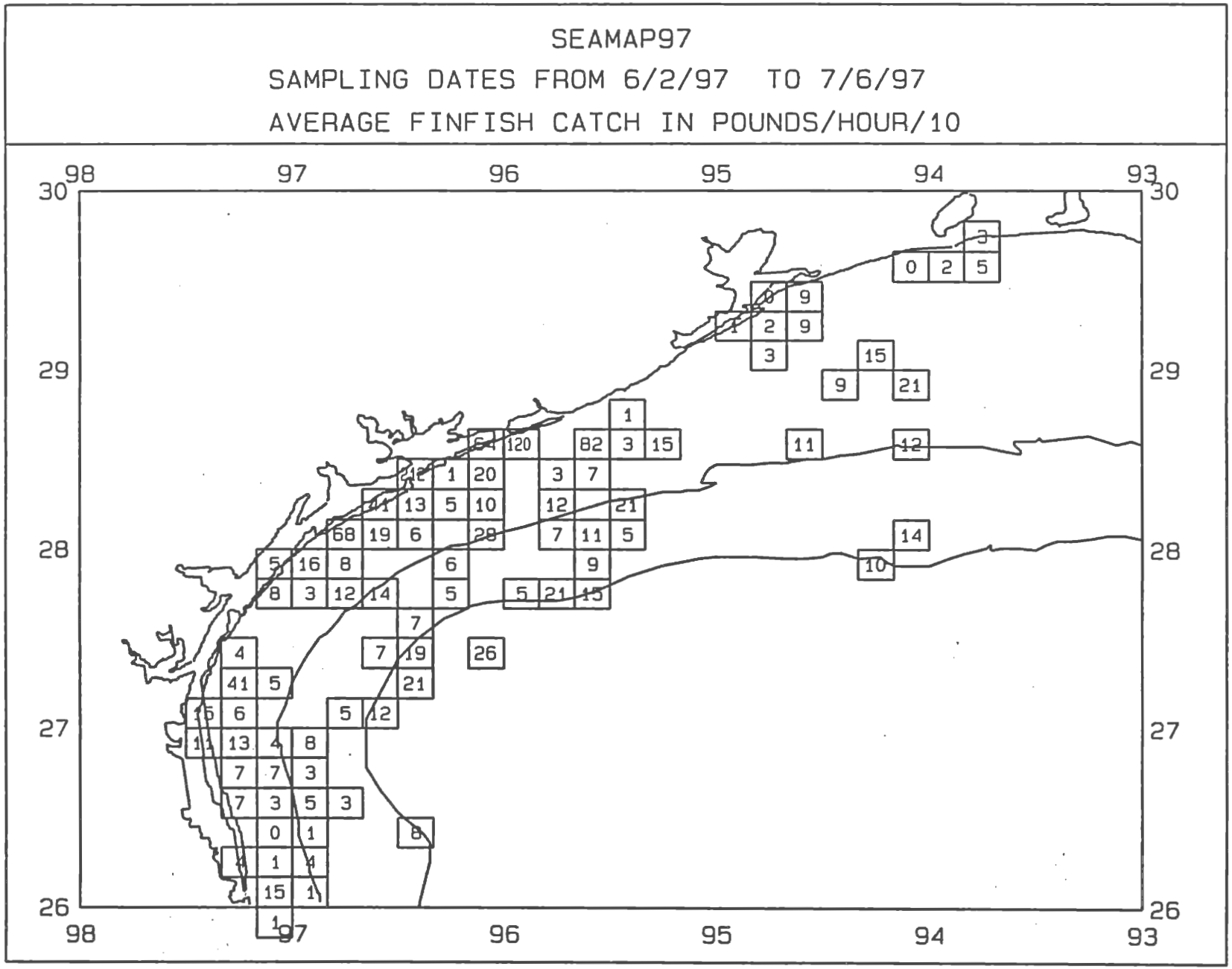

Figure 9. Real-Time Data Catch Plots, 1997

SEAMAP Archiving Center

Larval fish and fish egg samples sorted to the lowest taxa level possible by the Polish Sorting and Identification Center are returned to the SEAMAP Archiving Center for archiving and loan to researchers. For FY1997, approximately 12,870 vials have been returned from the Polish Sorting and Identification Center. Data entry for 6,407 of the returned sorted samples has been completed in an improved and simplified SEAMAP DMS. Samples cataloged to date represent 18 orders, 126 families, 235 genera and 245 species.

The SEAMAP Archiving Center, which is managed in conjunction with Florida Department of Environmental Protection (FDEP) in St. Petersburg, Florida, processes both specimen loans and requests for associated plankton survey environmental data. The FDEP has completed renovations on the existing building which houses the SEAMAP Archiving Center, which will allow for expansion of the climate-controlled storage area and upgrading to current fire codes. The SEAMAP Archiving Center personnel, in cooperation with other staff from FDEP, have completed the spring ichthyoplankton survey in May 1997 and will be participating in the fall ichthyoplankton cruise. The fall cruise was scheduled to depart in September 1997.

SEAMAP Invertebrate Plankton Archiving Center

The SIPAC is in its thirteenth year of operation. Ken Stuck of GCRL serves as SIPAC curator, and was assisted during FY1996 by a part-time post-graduate student and two graduate students in July and August. The overall mission of the SIPAC, to archive and manage the large collection of plankton samples acquired during SEAMAP cruises and to obtain specimens and/or data on selected invertebrate larval stages from those samples, continued during FY1996. The SIPAC continues to provide unsorted plankton samples and data or specimens of larval invertebrates to qualified researchers upon request. The post-graduate and graduate students that were supported on SEAMAP funds also participated in SEAMAP cruises aboard the R/V TOMMY MUNRO and OREGON II during FY1996.

During FY1996, a total of 655 SEAMAP plankton samples were received and logged into the SIPAC database. The samples were obtained from the SEAMAP cruises conducted on the OREGON II, CHAPMAN, SUNCOASTER, and PELICAN. The number of samples currently cataloged in the SIPAC collections is 6,268. Samples currently on loan include: 146 samples from various OREGON II, CHAPMAN, HERNAN CORTEZ II and SUNCOASTER cruises to S. Turner; and 7 samples from TOMMY MUNRO cruises to B. Comyns.

In an effort to kept the space required to house the SIPAC collection of unsorted plankton samples to a minimum, samples that have been in the collection for over 7 years and duplicate samples sorted and received from the PSIC, are aliquoted to ¼ their original volume and placed into 100ml vials. When possible, the remaining ¾ aliquots are donated to educational institutions for use as teaching materials. If the remaining sample must be discarded, sample jars are cleaned and returned to

NMFS-Pascagoula for reuse. During FY1996, approximately 100 samples from 1986 SEAMAP cruises were aliquoted. To date, approximately 1,550 samples collected from 1982 - 1986 have been aliquoted and prepared for long-term storage. Due to the recent addition of samples to the collection during FY1996, there is currently no space available for additional samples to be deposited into the SIPAC archives.

During FY1996, an inventory of sorted SEAMAP materials was prepared which summarizes holdings by cruise and taxa. The post-graduate student hired in FY1996 was trained to sort samples for selected invertebrates according to SIPAC protocols. A total of 36 samples collected during OREGON II cruise 190 were sorted, bringing the total number of samples sorted for invertebrates to 1,494, consisting of 6,333 lots. The SIPAC post-graduate student resigned at the end of August and because of lack of funds, will not be replaced until next fiscal year. Therefore, SIPAC invertebrate sorting activities has been suspended.

During the next fiscal year, the SIPAC will continue to manage SEAMAP plankton collections, accession samples, and provide unsorted samples, sorted specimens and data from the collection to qualified researchers as requested. However, due to the resignation of the SIPAC post-graduate student and continual difficulties in retaining trained personnel to process samples, it is anticipated that no additional SEAMAP samples will be sorted for invertebrates in FY1997. Efforts with sorted materials will concentrate on curation and analysis of current holdings and publication of distribution patterns of selected taxa by cruise.

PROGRAM MANAGEMENT

The SEAMAP program is administered by the SEAMAP Subcommittee of the TCC through the SEAMAP Coordinator, who is under the technical direction of the Subcommittee Chairman and administrative supervision of the GSMFC's Executive Director.

Personnel associated with SEAMAP program management included the Coordinator, Data Manager, SEAMAP Archiving Center Curator, SIPAC Curator and the NMFS-Pascagoula Laboratory Director, serving as Program Monitor.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 1996 and March 1997 in conjunction with the Annual Fall and Spring Meetings of the GSMFC. All meetings included participation by various work group leaders, Coordinator, Data Manager, Program Monitor and the GSMFC Executive Director. Subcommittee members and proxies are listed in Table 1.

Representatives from the Gulf program also met with the South Atlantic and Caribbean representatives in August 1997 to discuss respective program needs and priorities for FY1998. Minutes for all the meetings are listed in Appendix A.

SEAMAP-Gulf work groups met this past year to provide recommendations to the Subcommittee for survey and data management needs. The Red Drum Work Group met on June 28, 1996 (via conference call) to discuss the potential for being unable to conduct the second year of the red drum tag/recapture project and discuss possible alternatives for collecting the necessary data. Where additional discussion was needed, the Subcommittee also deliberated plans and needs via conference calls. Work group members are listed in Table 2.

Coordination of program surveys and distribution of quick-report summaries of a Gulf-wide survey to management agencies and industry were major functions of SEAMAP management in FY1997. Other important management activities included coordinating data provision and specimen loans, preparing publications and documents and assisting in the preparation of State/Federal cooperative agreements, including amendments to permit extension of activities previously not detailed in the agreements.

Proposed FY1998 Activities

Preliminary FY1998 SEAMAP-Gulf budget allocations are shown in Table 3. Last year, total program allocations for all three SEAMAP components--Gulf, South Atlantic and Caribbean, was approximately $1.2 million. At the August meeting, the SEAMAP components based their

allocations on level funding for FY1998. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be $512,403.

Proposed FY1998 activities for all Gulf participants are shown in Table 4. The approved 1998 Operations Plan for SEAMAP-Gulf is contained in Appendix B. It should be noted that the SEAMAP fiscal year begins on January 1, thus fall activities for FY1997 will be conducted from October-December 1996.

Information Dissemination

The following documents were published and distributed in FY1997:

- *1997 SEAMAP Marine Directory.* Inventories of marine agency contacts (State, Federal and university) concerned with fishery research in the Gulf of Mexico, and summaries of information provided by these organizations: target species, types of fishery-independent sampling gear and platforms, annual sampling effort, and other materials.

- *SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee -October 1, 1996 to September 30, 1997.* A detailed summary of program accomplishments, emphasizing survey design, material collected, data dissemination, budget information, and future survey activities.

- *Annual Report of the SEAMAP Program - October 1, 1995 to September 30, 1996.* A summary of FY1996 activities and proposed FY1997 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.

- *Environmental and Biological Atlas of the Gulf of Mexico, 1994.* A compilation of information obtained from the 1994 SEAMAP surveys including catch rates of shrimp and finfish, abundance and distribution of plankton in the Gulf of Mexico and environmental data from all surveys.

- *Environmental and Biological Atlas of the Gulf of Mexico, 1995.* A compilation of information obtained from the 1995 SEAMAP surveys including catch rates of shrimp and finfish, abundance and distribution of plankton in the Gulf of Mexico and environmental data from all surveys.

- *Real-time Data Summaries, 1997.* Data summaries which show pounds/hour and counts of brown, pink and white shrimp caught and finfish catches during the SEAMAP Summer Shrimp/Groundfish survey.

FY1997 Financial Report

Total allocations for FY1997 program administration were $80,654. The GSMFC has arranged and paid for all expenses associated with personnel, meetings, travel and operating expenses to date. The remaining balance will be used to provide administration of the SEAMAP-Gulf program through December 31, 1997.

TABLE 1.

SEAMAP REPRESENTATIVES FOR FY1997

Richard Waller, Chairman
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

James Hanifen, Vice Chairman
Louisiana Department of Wildlife and Fisheries

Stevens Heath
Alabama Department of Conservation and Natural Resources

Mark Leiby
Florida Department of Environmental Protection
Florida Marine Research Institute

Terry Cody
Texas Parks and Wildlife Department

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Richard Leard (non-voting)
Gulf of Mexico Fishery Management Council

TABLE 2.

SEAMAP WORK GROUP MEMBERS FOR FY1997

ADULT FINFISH WORK GROUP

Terry Henwood, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Mark Leiby
Florida Department of Environmental Protection

John Roussel
Louisiana Department of Wildlife and Fisheries

Robert Shipp
University of South Alabama

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Richard Leard
Gulf of Mexico Fishery Management Council

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

DATA COORDINATING WORK GROUP

Kenneth Savastano, Leader
SEAMAP Data Manager
National Marine Fisheries Service
Stennis Space Center

Stevens Heath
Alabama Department of Conservation and Natural Resources
Shrimp/Groundfish Work Group

Terry Henwood
National Marine Fisheries Service
Pascagoula Laboratory
Adult Finfish Work Group

Mike Murphy
Florida Department of Environmental Protection
Red Drum Work Group

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

Perry Thompson
National Marine Fisheries Service
Pascagoula Laboratory
Environmental Data Work Group

Richard Waller
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory
Chairman, SEAMAP Subcommittee
Reef Fish Work Group

ENVIRONMENTAL DATA WORK GROUP

Perry Thompson, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Stevens Heath
Alabama Department of Conservation
and Natural Resources

Michelle Kasprzak
Louisiana Department of Wildlife and Fisheries

Thomas Leming
National Marine Fisheries Service
Pascagoula Laboratory

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Carmelo Tomas
Florida Department of Environmental Protection

Richard Waller
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

PLANKTON WORK GROUP

Joanne Lyczkowski-Shultz, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Churchill Grimes
National Marine Fisheries Service
Panama City Laboratory

Alonzo Hamilton
National Marine Fisheries Service
Pascagoula Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Don Hoss
National Marine Fisheries Service
Beaufort Laboratory

Mark Leiby
Florida Department of Environmental Protection

Harriet Perry
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Rick Shaw
Louisiana State University

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

RED DRUM WORK GROUP

Mike Murphy, Leader
Florida Department of Environmental Protection

Phil Goodyear
National Marine Fisheries Service
Miami Laboratory

Larry McEachron
Texas Parks and Wildlife Department

Joseph Shepard
Louisiana Department of Wildlife and Fisheries

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

REEF FISH WORK GROUP

Richard Waller, Leader
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Chris Gledhill
National Marine Fisheries Service
Pascagoula Laboratory

Richard Kasprzak
Louisiana Department of Wildlife and Fisheries

Mark Leiby
Florida Department of Environmental Protection

Mark Van Hoose
Alabama Department of Conservation
and Natural Resources

SHRIMP/GROUNDFISH WORK GROUP

Stevens Heath, Leader
Alabama Department of Conservation and Natural Resources

Bruce Comyns
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Nate Sanders
National Marine Fisheries Service
Pascagoula Laboratory

TABLE 3.

PRELIMINARY FY1998 PROGRAMMATIC BUDGET

Alabama Department of Conservation and Natural Resources	68,000
Florida Department of Environmental Protection	93,840
Louisiana Department of Wildlife and Fisheries	120,700
University of Southern Mississippi/Gulf Coast Research Lab	94,495
Texas Parks and Wildlife Department	54,804
Gulf States Marine Fisheries Commission	80,564
TOTAL	$512,403

TABLE 4.

PROPOSED SEAMAP-GULF ACTIVITIES, FY1998

	Fall	Winter	Spring	Summer
Resource Surveys:				
Spring Plankton Survey			X	
Shrimp/Groundfish Surveys	X			X
Louisiana Seasonal Surveys	X	X	X	X
Fall Plankton Survey	X			
Plankton & Environmental Data Surveys	X	X	X	X
Information Operations:				
1996 Biological and Environmental Atlas				X
1998 Marine Directory			X	
FY1997 Joint Annual Report		X		
Data Input and Request Processing	X	X	X	X
Specimen Archiving and Loan	X	X	X	X
Real-time Data Summaries				X
Program Administration:	X	X	X	X

APPENDIX A

MINUTES FOR FY1997 SEAMAP MEETINGS

SEAMAP Subcommittee Meeting
MINUTES
New Orleans, Louisiana
Monday, October 14, 1996

Chairman Walter Tatum called the meeting to order at 1:05 p.m. The following members and others were present:

Members:
Walter Tatum, ADCNR, Gulf Shores, AL
Jim Hanifen, LDWF, Baton Rouge, LA
Terry Cody, TPWD, Rockport, TX
Richard Waller, GCRL, Ocean Springs, MS
Joanne Shultz, NMFS, Pascagoula, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL

Others:
Scott Nichols, NMFS, Pascagoula, MS
Buck Sutter, NMFS, St. Petersburg, FL
Ken Savastano, NMFS, SSC, MS
Dalton Berry, Zapata Protein, Inc., Mandeville, LA
Terry L. Romaire, LDWF, Baton Rouge, LA
Michelle Kasprzak, LDWF, Baton Rouge, LA
David Stanley, LSU, Baton Rouge, LA

Staff:
Larry Simpson, GSMFC, Ocean Springs, MS
Dave Donaldson, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Adoption of Agenda

The agenda was adopted as submitted.

Approval of Minutes

The August 4 & 6, 1996 minutes were approved as submitted.

Administrative Report

The Fall Plankton Survey was conducted in late September through early October 1996. The survey covers Gulf waters from Florida Bay to Brownsville, Texas. Approximately 220 stations were sampled. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS participated. The purpose of the survey is to assess abundance and distribution of king mackerel and red drum eggs and larvae.

The Fall Shrimp/Groundfish Survey started in October and will continue through December 1996. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participate in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico.

SEAMAP is in the third phase of a three-phase project of conducting comparative tow surveys between NMFS and the state vessels. In the first two parts of the survey, it was determined that all of the state vessels were essentially fishing the same. The last part of the survey compared the state vessels with the Federal vessels. Earlier this October, the TOMMY MUNRO and the OREGON II did comparative tows but due to weather, only 30 stations were completed. NMFS will be working on the data and hopefully will have a report at the March meeting. This completes the comparative tow surveys and there should be enough information to answer questions that has arisen.

The Annual Report to the GSMFC TCC Committee has been completed and will be distributed at this meeting to the SEAMAP Subcommittee, the TCC and Commissioners and Proxies. The 1996 Joint Annual Report information has been sent to the South Atlantic and Caribbean components for their changes and should be published by the end of the year. The General Session Proceedings should be published and distributed later this year.

Funds were received to publish two Atlases this year but they will not be published because key personnel from NMFS Pascagoula Laboratory retired. A no-cost extension has been submitted and the Atlases should be published by March 1997.

Since April, there has been approximately 400 visitors to the GSMFC SEAMAP homepage and D. Donaldson reminded the Subcommittee to contact him to establish links to SEAMAP and their homepages. There will be a presentation on the GSMFC homepage at the Commission business meeting.

Update on SEAMAP Chlorophyll Sampling Proposal to EPA

J. Hanifen said that per the Subcommittee's direction, the Louisiana Department of Wildlife and Fisheries will submit a proposal to the EPA Gulf of Mexico Program to conduct an intercalibration study of several methods for the collection of chlorophyll samples. The final proposal should be completed within the next two weeks. The EPA GOMP is not actively soliciting proposals so there is no way of knowing if or when it will get funded. He said NASA was soliciting proposals for ground truth information and Terry Romaire and Michelle Kasprzak from his staff prepared a proposal in one week and submitted it to NASA. He said they should know in January 1997 if the proposal was funded.

R. Waller stated that there is a possibility that the state of Mississippi may purchase a CTD Flourometer and other equipment for the TOMMY MUNRO. If these purchases are made Mississippi will be able to participate in these studies.

Discussion of Inkind Reporting for SEAMAP

* At the last SEAMAP Joint Annual meeting, the SEAMAP-SA reported that they do inkind reporting and suggested the SEAMAP-Gulf do this also. The SEAMAP-Gulf at its last meeting asked D. Donaldson to investigate what formula the SEAMAP-SA uses to do this reporting. D. Donaldson distributed a sample of the Inkind Report form the SA uses. Before the Gulf component received dedicated funding for SEAMAP they did do inkind reporting but stopped after they had dedicated funding. After discussion, the Subcommittee decided there were too many disadvantages in submitting this form. **Mark Leiby moved to not proceed with this type reporting and to write a letter to the SEAMAP-SA component explaining why and to caution them on the Gulf's behalf for doing this**. J. Hanifen seconded and it passed unanimously.

Status Report of the SEAMAP Archiving Center

Mark Leiby submitted the following report:

Since February 1, 1996, personnel have cataloged an additional 6,067 lots of ichthyoplankton from 12 different cruises. Collection years include 1985, 1986 and 1993. Due to a loss of personnel in December, a backlog of samples has accumulated, with an additional 33 cruises, from 1985, 1986, 1993 and 1994 in line to be catalogued. New personnel are working expeditiously to rectify the situation.

Three loan and data requests have been processed and updating from loaned material is being done by NMFS personnel at the Pascagoula Lab. On February 12 the ichthyoplankton collection closed in order to move into new housing.

As of March 9 the collection is in its new expanded location and there will now be sufficient room to house all collection years. Due to ongoing construction in the building where the Icthyoplankton Collection is housed, much of the collection is still inaccessible, but are working to rectify this situation.

The SEAMAP data files are still undergoing editing resulting from the conversion to the SEAMAP Data Management System (DMS), as well as by the use of SEAMAP investigators.

R. Waller said that the GCRL has a new person in their archiving center, a post doctorate fellow from Poland and he is very enthusiastic and is doing an excellent job.

Presentation of the Effects of Hypoxia on Stratification of Fishes on Oil Rigs

David Stanley from the Coastal Fisheries Institute, Louisiana State University, Baton Rouge, LA gave a slide presentation on a project sponsored by the Coastal Marine Initiative by the Minerals Management Service. A summary of this presentation is attached (Attachment I).

Data Coordinating Work Group

W. Tatum distributed a letter from A. Kemmerer (Attachment II) in response to the Subcommittee's letter expressing concern over funding for SEAMAP's data management functions.

The Subcommittee was satisfied with the positive response and NMFS's commitment to the SEAMAP program.

K. Savastano distributed the SEAMAP Data Management Report (Attachment III) and reviewed each item. He said that since the joint meeting, processing of the 1993 SEAMAP Atlas has been completed and the 1994 SEAMAP Atlas is approximately 45% complete; funding has been obtained to continue the ORACLE development; 180 SEAMAP requests have been received to date and 179 have been completed; the SEAMAP on-line data base now contains 332 cruises with a total of 2,230,802 records.

Red Drum Work Group

D. Donaldson gave a brief update on the aerial survey and tag recapture portion for red drum. He said NMFS was not able to secure a contract with a purse seiner to do the mark/recapture this year but he understands that funding will be available to do it next year. The aerial survey was completed and like the stock assessment it indicated very little change in populations. L. Simpson informed the Subcommittee that funding from the Gulf Disaster Fund may be allocated to do the red drum survey.

Election of Officers

* T. Cody, on behalf of the Subcommittee thanked Walter Tatum for his excellent job in being the SEAMAP Subcommittee chairman for all of these years. The nominating committee nominated Richard Waller for Chairman and Jim Hanifen for Vice Chairman. T. Cody moved to accept these nominations by acclamation. M. Leiby seconded and it passed unanimously.

Other Business

T. Cody informed the Subcommittee that the southern division of the American Fisheries Society will hold a meeting in San Antonio in February 1997. He said with the Subcommittee's approval he would like to submit an abstract on the SEAMAP Program. The Subcommittee agreed that he should do this and D. Donaldson and R. Peuser will help him with a presentation and/or poster if the abstract is accepted.

R. Waller reiterated that SEAMAP should have a traveling display to be used at meetings such as the American Fisheries Society. It could be used for presentations and should have slides, overheads, videos, etc. from boat work and could be housed at the Commission office. All agreed that this would be a worthwhile project to pursue.

T. Cody said he also has information on the red tide, public outreach and tarpon study in Texas if anyone is interested.

R. Waller said just for FYI that when he was in D.C. working on SK proposals, in reference to red tide, there were several proposals submitted that involved developing electronic probes to be able to field test quickly the presence of toxins from various types of blooms in both animals and

in the water column. He said he assumed this would be used for rapid identification so certain areas could be closed if necessary particularly for shellfish beds.

J. Shultz asked that in reference to the SEAMAP fall plankton survey, if Louisiana will plan to do the cruise earlier in the season, preferably the third week of September. The reason being they can do the federal sampling in Louisiana at the same time. She also asked if Florida could start the first week of October and that would improve the coordination of the timing of the survey.

There being no further business, the meeting adjourned at 3:50 p.m.

ATTACHMENT I

David Stanley from the Coastal Fisheries Institute at the Louisiana State University gave a slide presentation on research he has done around gas/oil platforms for the last five years. This project has been funded over the years by the Louisiana Department of Wildlife and Fisheries, offshore oil companies, and most recently the Minerals Management Service.

He showed a slide of the distribution of oil and gas platforms in the northern Gulf of Mexico. He said he views this as the largest artificial reef program in the world although it wasn't designed as that. The slide represents approximately 4,000 platforms. While the effects of the discharges are generally well known, it hasn't been established what the impacts of the physical presence of the platforms themselves are. He said this was a goal of their research. He then showed a slide of their various research stations. The initial research took place in western Louisiana at about 50 miles offshore. The current MMS project is around three platforms which happen to be right in the middle of an hypoxic area. Another goal of the project is to determine or profile the species composition and the number of fishes at these sites and how it changes with depth. One of the reasons little is known about the assemblage of fishes around these platforms is the difficulty in sampling.

Traditionally, visual surveys are used when sampling artificial reefs. While that works fairly well in coral reef situations it doesn't work well in the northern Gulf. Visual surveys are of limited value because of the nephloid layer and deeper depths in the Gulf of Mexico. Also, earlier surveys showed the presence of scuba divers reduced fish density by 50% around a petroleum platform, so visual surveys by divers bias results. It also decreases the mean size.

Dual beam hydroacoustics were used for this project. They used the same technique as used in the northwest to sample fishes associated with hydroelectric facilities. The northwest was having the same problems as the Gulf in that traditional fishery sampling methods can not be used around those structures. The hydroacoustics is basically a fishery sonar system. By the amount of energy that is reflected, you can determine how large the object is, where in the water column the object is, and how many objects are there. It detects mainly fish, not trash so it works well for sampling around the platforms. The system is not affected by visibility so sampling can be done 24 hours a day and it's unobtrusive, the fish can't detect it. Sampling can not be done within the confines of the platform itself because of the structural cross members and turbulence but the system is set up immediately adjacent to the platform. They work from the platform, not vessels and usually sample five days at a time.

Transducers are set up on each side of the platform and with a downward orientation you can see from about 5-10 meters to the bottom. With this set up they miss the fish in the upper water column so they suspend the transducers at a depth of approximately 20 meters then look up towards the surface, thus getting total coverage throughout the water column. They can't sample simultaneously upward and downward because they don't have enough transducers and don't foresee obtaining more in the near future. Because the sonar gear can not identify the species of fish a ROV

is used to do visual surveys. It is used throughout the water column and they sample at the same strata as the acoustic gear. The ROV doesn't seem to have the same voidance as the divers do. They also collect environmental data while doing the surveys and found that hypoxia caused the compression of fishes in the upper water column.

He stated that in summary they feel that the acoustics coupled with the visual surveys is the best available assessment technique around petroleum platforms. Using the two techniques together gives a total view.

SEAMAP Subcommittee Meeting
MINUTES
Biloxi, MS
Monday, March 17, 1997

Chairman Richard Waller called the meeting to order at 1:16 p.m. The following members and others were present:

Members:
Jim Hanifen, LDWF, Baton Rouge, LA
Terry Cody, TPWD, Rockport, TX
Richard Waller, GCRL, Ocean Springs, MS
Joanne Shultz, NMFS, Pascagoula, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL

Others:
Walter Tatum, Foley, AL
Scott Nichols, NMFS, Pascagoula, MS
Buck Sutter, NMFS, St. Petersburg, FL
Ken Savastano, NMFS, SSC, MS
Kaye Williams, Pascagoula, MS
Joe Smith, NMFS, Beaufort, NC
Butch Pellegrin, NMFS, Pascagoula, MS
Perry Thompson, NMFS, Pascagoula, MS

Staff:
Larry Simpson, GSMFC, Ocean Springs, MS
Dave Donaldson, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Adoption of Agenda

Agenda Item 9b will be discussed under Item 7. With this change, the agenda was adopted as submitted.

Approval of Minutes

* Under "Update on SEAMAP Chlorophyll Sampling Proposal to EPA," the Louisiana Department of Wildlife and Fisheries will submit a proposal should be changed to the Gulf States Marine Fisheries Commission will submit a proposal. **With that change, J. Hanifen moved to approve the October 14, 1996 minutes as submitted.** Terry Cody seconded and it passed unanimously.

Administrative Report

The Spring Plankton Survey will be conducted in April/May of this year. The survey will cover Gulf waters from Florida Bay to Brownsville, Texas. This is the Bluefin Tuna cruise and

vessels from Florida and NMFS will participate. The purpose of the survey is to assess abundance of Bluefin Tuna eggs and larvae in the Gulf of Mexico.

The Summer Shrimp/Groundfish Survey is scheduled for June/July of this year. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participate in the survey. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico.

The 1997 Marine Directory has been published and distributed to participants and will be distributed to the TCC and Commissioners and Proxies at this meeting. The proceedings of the general session *The Uses of Fishery-Independent Data* has been published and distributed. The draft 1994 Atlas has been distributed for comments and the final copy should be sent to the printer by the end of this month. Work is continuing on the 1995 Atlas and the funds will be obligated to publish this atlas at the end of the month. Hopefully, both Atlases will be distributed by the middle of this year.

To date there has been approximately 750 visitors to the GSMFC SEAMAP home page and D. Donaldson reminded the Subcommittee to set up links to their home pages. The format of the home page has been changed and D. Donaldson is working to get the real time data plots online for this year. When the real time information is mailed, he will note in the memo that the data plots are online for those people who has access to the Internet.

D. Donaldson asked the Subcommittee to review the information he distributed from the Polish Sorting and Identification Center. He said they are receiving information from the Center and things seem to be going well.

In mid-February T. Cody and D. Donaldson gave a presentation at the southern division AFS meeting in San Antonio, Texas. The presentation consisted of slides, printed material and a general overview of SEAMAP. Unfortunately, they were placed in a category of Biological Pollution and Other Topics so they didn't reach a very large audience. They felt this was a good learning experience and would know more what to expect for future meetings. The Subcommittee asked D. Donaldson to go forward on working on a traveling exhibit to be used for these type sessions. The exhibit should include slides, pictures, posters, printed material and anything else pertaining to SEAMAP.

Discussion of SEAMAP Atlas Format and Content

D. Donaldson stated that because of the changes/losses of NMFS personnel, the last two atlases have been delayed. He said that he, P. Thompson and N. Sanders discussed exploring the possibility of streamlining the atlas--possibly having it on a PC-Based level so it will be easier to process. K. Savastano suggested that before this is approved, to have a cost estimate of what it will take to streamline in terms of man hours, contractor time, operational time, etc. D. Donaldson also suggested possibly removing the twelve temperature plots in the atlas because the information is difficult to obtain and to plot and it really doesn't provide that much usefulness and it is not a SEAMAP activity. J. Hanifen disagreed stating that with the hypoxic area off Louisiana, this information can be very useful in the future.

* **After discussion, M. Leiby moved to form an ad hoc committee to explore streamlining the atlases and to examine removing/not removing the temperature plots.** J. Shultz seconded it and it passed unanimously. The committee will consist of P. Thompson, N. Sanders, R. Minkler, D. Hanisko and D. Donaldson. The committee will report at the joint meeting on the streamlining ideas and arguments to stop including the temperature plots and the Subcommittee will vote on the recommendations then.

Discussion of Possible SEAMAP Data Management System Presentation

The Subcommittee discussed having someone go to each state to give a presentation on how to use the SEAMAP Data Management System. J. Shultz said the idea evolved when she was asked for location information on left bongo samples and she thought the person should be able to obtain this information on his own. She suggested having a presentation at one of the GSMFC annual meetings, possibly a general session, that would be beneficial to the Subcommittee and others attending the meeting. K. Savastano said a new version of the SEAMAP data management system is currently in progress and will be out this month, but he feels a general session would not be useful because there is no outside access to the Miami computer due to confidential data. To gain access to the Miami computer, you must be a participant on the system and be approved for confidential data. He said they are currently working on a public access system at Stennis that will be available through Internet.

The Subcommittee also discussed the possibility of having a workshop at the joint meeting but decided that not only Subcommittee members need this training but others in their offices and it will be too expensive to have everyone go to Charleston. They would also need to have enough hardware to have a workshop. It was then suggested to wait until the new version was out and everyone had it loaded on their machines before actually having a work shop. The Subcommittee decided that the best place to have a user training work shop would be at Stennis because they would have the hardware capability and it wouldn't cost too much in travel. The Subcommittee also asked K. Savastano if he could possibly have a condensed instruction sheet with the new version along with the user manual. D. Donaldson said the Subcommittee will have to prioritize upcoming meetings because if they do have the work shop, they may not be able to afford work group meetings. The Subcommittee will invite the South Atlantic if they do have the training work shop.

Update on SEAMAP Chlorophyll Sampling Proposals/Environmental Data Work Group Report

J. Hanifen said that the proposal submitted to NASA was not funded and the peer reviews were not very favorable. D. Donaldson said they have not received a response from EPA yet but he has tried contacting R. Herring to see where it stands. The Subcommittee discussed the importance of all participants using the same method for sampling chlorophyll then Perry Thompson, submitted the following Environmental Work Group Report:

> At this time due to manpower constraints and funding, the Mississippi Laboratories cannot continue the spectrophotometric analyze of all the chlorophyll samples (chlorophyll a) that are collected by the SEAMAP participants. We are collecting and will continue to collect chlorophyll with the CTD mounted fluorometer. Also, other environmental data such as temperature, depth, salinity, turbidity and dissolved oxygen will still be collected with the

CTD. We can collect environmental samples or biological samples for an agency, pending priority requirements during a cruise. We do have room aboard our research vessel for those who want to collect environmental or biological samples.

The Mississippi Laboratories will offer their laboratory equipment to SEAMAP participants who would like to analyze their own samples. The CTD data profiles (1992 to 1996) are presently being sent to the Naval Oceanographic Office at the Stennis Space Center to be edited and will be available in the near future to the SEAMAP participants upon request. The spectrophotometric chlorophyll data are in the SEAMAP data files.

The Mississippi Laboratories will commit to analyzing 150 chlorophyll samples/year for the years 1996, 1997 and 1998 to determine the relationship between the CTD fluorometer data and the spectrophotometric data (if that is what the Subcommittee wants). An Environmental Data Work Group meeting needs to be called to determine the allocation of the 150 samples to be collected, i.e., season, location, number of replicates per area, etc. Also, it needs to be decided on who will analyze these data. The last time the Environmental Work Group met was in March of 1995.

* The Subcommittee discussed the issue further and agreed the fluorometer method is probably the best method available but the issue needs to be resolved. **J. Hanifen moved to charge the Environmental Data Work Group to meet as soon as possible to specifically address the question of chlorophyll methods, including priorities for the 1997 data collections, analysis of NMFS historical profile data, processing of the 1996 data, processing of salinity samples and resolving any other associated environmental data questions. The Work Group needs to make a recommendation to the Subcommittee at least with regards to the 1997 data, prior to the Summer Shrimp/Groundfish cruise and have a complete report in August at the Joint Subcommittee meeting.** J. Shultz seconded and it passed unanimously.

Presentation of Comparative Tow Results

B. Pellegrin gave a presentation of the Comparative Tow Results. The presentation is attached (Attachment 1). He stated that there were no significant differences in the RV Tommy Munro, Verrill, Pelican or Oregon II. A summary of the results is as follows:

* Nineteen of twenty-four species indicated no significant differences between vessels.

* Overall, NOAA Ship Oregon II caught greater numbers of eleven species and RV Tommy Munro, thirteen.

* Overall ratio of numbers caught by NOAA Ship Oregon II:RV Tommy Munro was 1.01:1.00.

* Of the five species indicating significant differences, NOAA Ship Oregon II caught significantly greater numbers of three species and RV Tommy Munro, two.

* Of the species indicating significant differences, there didn't appear to be a pattern of either vessel's net sampling a niche significantly more efficiently.

* Observed significant differences may have been due to non-random encounters of species aggregations.

Work Group Reports

Data Coordinating Work Group

K. Savastano distributed the SEAMAP Data Management Report (Attachment II) and reviewed each item. He said that since the October meeting, data processing of the 1996 data and the 1982-87 Gulf data is in progress, the processing of the 1994 SEAMAP Atlas has been completed and processing of the 1995 Atlas is approximately 60% complete, 13 data requests have been filled, version 3.22 is expected to be completed at the end of March, and the SEAMAP on-line data base now contains 352 cruises with a total of 2,447,860 records. He also stated that a decision needs to be made on the chlorophyll and salinity data so they can finish processing the 1995 atlas.

Other Business

T. Cody updated the Subcommittee on the red tide off of Texas last year. He stated that at this point it seems spawning and large red and black drum hasn't been negatively impacted by the red tide.

J. Hanifen suggested the Subcommittee may want to do an in depth review, a complete reevaluation of the SEAMAP because of the changes in technology and funding problems. It was decided to have this as an agenda item at the joint meeting for the whole committee to discuss.

M. Leiby said Florida has approximately 1,000 samples that were taken by SEAMAP protocol that needs to be identified and sorted. He asked if it would be possible to send these samples, maybe in stages, to Poland. J. Shultz stated that Poland is asking for more funding if they continue to send more samples but she and M. Leiby will try to resolve this.

B. Sutter stated the final reports are due April 30, 1997 for the period of February 1, 1994 through January 31, 1997.

There being no further business, the meeting adjourned at 4:40 p.m.

SEAMAP Subcommittee Meeting
MINUTES
Charleston, SC
Sunday, August 3, 1997

Chairman Richard Waller called the meeting to order at 8:32 a.m. The following members and others were present:

Members:
Richard Waller, USM/IMS/GCRL, Ocean Springs, MS
Mark Leiby, FDEP/FMRI, St. Petersburg, FL
Joanne Shultz, NMFS, Pascagoula, MS
Richard Leard, GMFMC, Tampa, FL
Steve Heath, ADCNR/MRD, Dauphin Island, AL
Terry Cody, TPWD, Rockport, TX
Jim Hanifen, LDWF, Baton Rouge, LA

Others:
Walter Tatum, Foley, AL
Scott Nichols, NMFS, Pascagoula, MS

Staff:
Dave Donaldson, GSMFC, Ocean Springs, MS
Cheryl Noble, GSMFC, Ocean Springs, MS

Adoption of Agenda

Agenda Item 8c does not have to be discussed and K. Savastano will not be here to give the Data Management Report (7a). With these changes, the agenda was adopted as submitted.

Approval of Minutes (3/17/97)

* Under the update of Chlorophyll sampling, spectrophotometric analyze needs to be changed to analysis, and the underscore in this sentence needs to be deleted. **J. Hanifen moved to accept the minutes as amended.** J. Shultz seconded it and it passed unanimously.

Administrative Report

The Summer Shrimp/Groundfish Survey was conducted in June/July of this year. Vessels from NMFS, Louisiana, Mississippi, Alabama and Texas participated sampling 315 stations. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. From this survey, there were 7 weekly mailings of real-time data that were distributed to approximately 280 interested individuals and organizations. This information (plots) was also available via Internet and there were approximately 5-10 hits a week.

He also stated that in reference to receiving the real-time data from the states, that NMFS, Mississippi Laboratories, has a very basic data-entry system for this real-time data information. He

asked that if the software was provided, will the states consider entering their information using the new software and sending the information via E-mail to D. Hanisko at NMFS. After discussion, the Subcommittee was concerned with possible problems in doing this but they asked D. Donaldson to send them the software ASAP so they can try this to see if it works before next year's mailings begin.

The Reef Fish Survey began in July and is continuing to date. Vessels from NMFS, Alabama and Texas participate in this survey and the purpose of the survey is to assess relative abundance and compute population estimates of reef fish using a video/trap technique. J. Shultz stated that due to funding problems, NMFS was on the verge of bringing the cruise back from south Florida, but the NOAA Corps Office of Operations contributed funding to continue the survey so they will have a complete 1997 Reef Fish Survey.

The 1994 Atlas was completed and has been received from the printer and the 1995 Atlas was completed and is at the printer. To save postage, both Atlases will be distributed together. Work is currently being done on the 1996 Atlas and hopefully it will be completed by the end of the year. After the 1996 atlas is completed, the atlases will be only one year behind which has been a goal of the Subcommittee.

D. Donaldson said the GSMFC now has a new Internet provider and prior to this change, the SEAMAP home page had approximately 800 hits. The SEAMAP home page has had approximately 80 hits with the new provider and the address has changed: SEAMAP - www.gsmfc.org/seamap.html; GSMFC - www.gsmfc.org. He also reminded everyone to establish links to SEAMAP from their home pages and to contact him to establish links to their home page.

D. Donaldson said that earlier in the year, there was a request to use SEAMAP Bluefin tuna larvae for stock identification and the Subcommittee agreed that this would be an acceptable activity but decided that some of the larvae should be saved for future reference and use.

R. Waller stated that Admiral Toban, the chief oceanographer for the Navy, went out on the R/V TOMMY MUNRO with them and he asked about SEAMAP and was very impressed with the program and the equipment on the TOMMY MUNRO. He asked D. Donaldson to send Admiral Toban information on SEAMAP. The Subcommittee will discuss, under other business, drafting a letter or proposal to Admiral Toban asking for possible funding for the data management program or intercalibration of the environmental sensing equipment and justify this by stating the Navy uses this information. Even though the data management portion is long-term, a short term infusion of funds will help to catch up.

Status of FY 1998

The House and Senate mark for SEAMAP funding in 1998 is level funding which is $1.2 million.

Activities and Budget Needs for FY 1998

a. Florida - the Lab is discussing changing overhead rates again and if they do, Florida will have no money left for sea days. They are now at a minimum on sea days and with the

lack of personnel, M. Leiby spends a high per cent of his time doing data entry. Also, there is another reorganization at the Lab and he has been charged with justifying their collections including the SEAMAP ichthyoplankton collection. Florida will try to continue at level funding - $93,480.

b. Alabama - will attempt to continue all surveys at level funding - $68,000.

c. Mississippi - the university is also charging more in overhead (45%) but in the past the money was directed back to the Lab. If the money stays in Hattiesburg, there is no way Mississippi can do any surveys and if this happens, they will not submit a proposal. If the university does not charge the higher rate, they should be able to continue all surveys at level funding - $94,495.

d. Louisiana - will attempt to continue all surveys at level funding. Historically, the university has not charged any indirect costs to SEAMAP but the financial office is charging all new projects approximately 31% in indirect costs. Since this is an established project, SEAMAP should not have to pay. Also, ship expenses have increased. If we are charged indirect costs and if ship time increases too much, we'll only be able to do the summer and fall surveys. Level funding is $120,700.

e. Texas - they are in the process of completing all activities from last year. Texas is interested in doing more standard trap/video drops and will try to piggyback on as many trips possible. T. Cody asked if there is any equipment available for Texas to use on some of their other boats. He said Texas' artificial reef program is going well and they may be able to tie into that for these surveys. They will try to continue operating on level funding - $54,804.

f. GSMFC - will try to continue on level funding but this will allow only one work group meeting. The work group meetings are important and is a major concern to everyone. If the next meeting is in the Caribbean, GSMFC will need an extra $2,000 because that higher cost has not been budgeted for next year. Level funding is $80,564.

Work Group Reports

1. Data Management Activities - K. Savastano was not present at the meeting but he will send the Data Management Report (Attachment I) and it will be distributed to the SEAMAP Subcommittee.

2. SEAMAP Atlas Recommendations - The Data Coordinating Work Group met (via conference call) on Wednesday, April 23, 1997. The main purpose of the call was to discuss recommendations regarding streamlining the SEAMAP Atlas. An ad hoc work group met and developed several recommendations for the group to consider. During the discussions, it was noted that the main purpose of the SEAMAP Atlas is to provide a general summary of the SEAMAP data collected during a specific year. The group reviewed and discussed the suggestions and request the Subcommittee to consider the

following recommendations and then ask for TCC approval. K. Savastano will also submit a report (Attachment II) from the Data Coordinating Work Group stating the changes/modifications were reviewed and accepted by the Work Group.

Recommendation 1 - Combine the 20-ft and 40-ft data for the species composition and the A & B Tables into one species composition and A & B Table.

Discussion by ad hoc work group: The rationale for this action is that the Atlas is a summary document and there may not be a need for this much detail as well as the information for the figures is not separated. The work Group suggested that a statement be added in the text of the Atlas and/or in the Table Heading pointing out that this is summarized data and original data (separated by trawl types) is available to users for their further investigation, if desired. This action will not incur additional cost to implement.

Discussion by the Subcommittee: the Subcommittee agreed that these changes can be made and it should cut the page numbers significantly, but in the text describing the Tables, it must be explained fully that in certain statistical zones it is a combination of 20 and 40 ft trawl data and if more specific information is needed, contact the data manager. Also, a foot note or description in the text needs to be included on how the data was standardized. The table headings must also be modified to reflect the changes.

Recommendation 2: For the A Tables, condense the depth stratum from 0-5, 6-10, 11-20, 21-30, 31-40, and over 40 to 0-20, 21-40, and over 40.

Discussion by ad hoc work group: Again, the rationale is that the document is a summary of the data and there may not be a need for this much detail. This action will incur additional costs to implement because the Atlas software will have to be reprogrammed.

Discussion by the Subcommittee: The Subcommittee does not want to change the stratums because the difference in organisms is quite significant from 0-20 fm. The Subcommittee suggests using the same strata but to rearrange the columns. Have only 3 columns for each strata with the mean number on top and the SEM on bottom in parenthesis. An example of the change is attached (ATTACHMENT III). The software will have to be modified to print in that format. D. Donaldson will ask D. Hanisko to investigate to see if these changes can be made and he will report to the Subcommittee.

Recommendation 3: Add 20 and 50 fm contours to the plots.

Discussion by ad hoc work group: the rationale for this recommendation is that the contours will provide users reference points for where the catches occurred and enable them to better utilize the document. This action will not incur additional cost to implement.

Discussion by Subcommittee: the Subcommittee agreed to make this change with no further discussion.

Recommendation 4: Change the plots to reflect contours lines/concentric circles, etc. instead of the actual numbers.

Discussion by ad hoc work group: The information will still be in number/hr and pounds/hr but presented in a more user-friendly format. It will enable users to quickly assess the catch rates throughout the sample area and thus make the Atlas more useful. Some examples have been generated and distributed. This action will incur additional costs to implement since different software will need to be used/developed to create these plots.

Discussion by Subcommittee: D. Donaldson informed the Subcommittee that after investigating this change, the software could not be modified to allow this so the Subcommittee does not need to discuss it.

Recommendation 5: Include only Texas through Alabama for the scope of the plots.

Discussion by ad hoc work group: Since there is no trawl sampling in Florida waters, it will be useful to narrow the geographic scope of the plot. This will allow for a more focused area to be presented and provide more resolution of the area sampled. This action will not incur additional costs to implement.

Discussion by Subcommittee: The Subcommittee agreed to make this change with no further discussion.

Recommendation 6: Remove the sea surface temperature plots.

Discussion by ad hoc work group: Currently, this information is either downloaded from the Internet or received via fax, and NMFS personnel spend a large amount of time modifying the information for inclusion in the Atlas. The amount of effort devoted to this activity does not appear to be a wise use of resources. Also, the information for the sea surface temperature plots is not SEAMAP data. The group is exploring different methods for getting this information; however, the current method is not a good use of personnel and the group recommends removing the plots. This action will not incur additional costs to implement.

Discussion by Subcommittee: the Subcommittee agreed to remove the plots but a statement must be added in the text indicating the information was formerly provided and then state the alternative sources to obtain the information.

The Subcommittee accepted the recommendations but would like to see a draft of the changes in the text and tables before final approval.

b. Environmental Data

1. J. Shultz read the Environmental work group report prepared by P. Thompson (Attachment IV).

2. Recommendations regarding chlorophyll sampling - J. Hanifen informed the Subcommittee that since the EWG conference call, another question has come up on the fluorometric/spectrophometric issue. It seems some of the fluorometric values that have been entered into the data set are being entered as chlorophyl but they are not corrected chlorophyl data, they are total fluorescence. The 95 Atlas

has a new column in the Environmental data that is fluorescence. In order to go from flourescence to chlorophyl the instrument has to be calibrated at least once a day in order to develop a calibration curve to be able to go from flourescence to chlorophyl. Also, before going to a different body of water, the curve has to be developed again. There has been people requesting this data and we do not think they are aware of this situation. Gear codes are on the station sheets but if the individuals do not ask for that information specifically, they do not know because it's not flagged in the data set. The Subcommittee agreed that all documents need to be changed indicating the data is fluorescence, not just chlorophyll data and the data set should be corrected also. NMFS and Louisiana are still working on the comparison data and J. Hanifen will give a report at the October meeting. At that point the Subcommittee will decide how to handle this situation. It was also suggested that this could be another justification to Admiral Toban asking for funding to standardize equipment and to develop an intercalibration curve to be able to convert historical data to the extent possible.

Preparation of Cooperative Agreements

D. Donaldson distributed the 1998 Operations Plan and the NMFS Portion of the Cooperative Agreement and asked to please review and send any comments to him before August 18, 1997.

Other Business

R. Waller and D. Donaldson will develop a draft letter to Admiral Toban asking for possible funding. The letter will be distributed to the Subcommittee for review before mailing to Admiral Toban.

J. Shultz informed the Subcommittee that the PSC is short on funds.

There being no further business, the meeting adjourned at 12:05 p.m.

APPENDIX B

1998 SEAMAP OPERATIONS PLAN

SEAMAP-GULF OF MEXICO

OPERATIONS PLAN

January 1, 1998 - December 31, 1998

INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/University program for collection, management and dissemination of fishery-independent data and information in the southeastern United States. The program presently consists of three operational components, SEAMAP-Gulf of Mexico, which began in 1981, SEAMAP-South Atlantic, implemented in 1983, and SEAMAP-Caribbean, formed in 1988.

Each SEAMAP component operates independently, planning and conducting surveys and information dissemination in accordance with administrative policies and guidelines of the National Marine Fisheries Service's Southeast Regional Office.

Organizations directly involved in planning and managing the Gulf's program are the marine fishery management agencies of Florida, Alabama, Mississippi, Louisiana, and Texas, the National Marine Fisheries Service (NMFS), the Gulf of Mexico Fishery Management Council (GMFMC) and the Gulf States Marine Fisheries Commission (GSMFC) which administers the Gulf program. Sea Grant Directors are also asked to attend and participate in SEAMAP-Gulf Subcommittee meetings.

A five year *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000* has been developed for the SEAMAP outlining goals and objectives; management structure and responsibilities; data collection activities along with management and dissemination of the data; and financial and personnel resources necessary for successful operation of the program. This Management Plan, along with the *1981 SEAMAP Strategic Plan*, *SEAMAP Operations Plan: 1985-1990 and SEAMAP Management Plan: 1985-1990* should be considered as charter documents defining and guiding operations of the Gulf program. An external review of SEAMAP-Gulf and South Atlantic was performed in 1987, and endorsement of specific recommendations was adopted by consensus of the joint SEAMAP-Gulf Subcommittee and SEAMAP-South Atlantic Committee. These recommendations, as implemented, will guide activities and operations of SEAMAP-Gulf, as well as the South Atlantic and Caribbean components.

Five major goals were outlined in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000* and remain as key missions:

(1) Collect long-term standardized fishery-independent data on the condition of regional living marine resources and their environment;

(2) Cooperatively plan and evaluate SEAMAP-sponsored activities;

(3) Identify and describe existing non-SEAMAP data bases and activities that are of value in fishery-independent assessments of regional living marine resources;

(4) Operate the SEAMAP Information System for efficient management and timely availability of fishery-independent data and information; and

(5) Coordinate and document SEAMAP activities, and disseminate programmatic information.

Each of these goals is implemented by several objectives requiring specific tasks and events, e.g. a Summer Shrimp/Groundfish Survey. By intent, some specific tasks may fulfill more than one objective. Each of the participants in the Gulf program receives a portion of the annual Congressional allocation to perform tasks associated with the goals. Participants also contribute significant in-kind support for activities.

The SEAMAP-Gulf and South Atlantic committees, meeting jointly in January 1988, accepted the Program Review recommendation to develop separate annual operations plans. This eighth SEAMAP-Gulf Annual Operations Plan describes planned activities and events for the period January 1, 1998 through December 31, 1998. Detailed information on Gulf program objectives, activities, administrative procedures, data management protocols, information dissemination and funding requirements are found in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000.*

SURVEYS

Spring and Fall Plankton Surveys

The objectives of the spring and fall plankton surveys are to provide data on the distribution and abundance of eggs and larvae of commercial and recreational species such as bluefin tuna, mackerels, carangids, sciaenids and clupeids. Station locations are in a systematic grid across the northern Gulf in increments of 30 minutes latitude/longitude. Frontal satellite-determined boundary locations are also sampled during the spring survey.

Plankton samples will be taken with standard SEAMAP bongo and neuston samplers. The bongo sampler consists of two conical 61-cm nets with 333 micron mesh. Tows are oblique, surface to 5 m above the bottom (or 200 m maximum) and back to surface. Wire angle will be maintained at 45°. Neuston samples will be taken with 947 micron mesh nets on 1 x 2 meter frames towed at the surface for ten minutes. All plankton samples are to be initially preserved in 10% buffered formalin and after 48 hours transferred to 95% ethyl alcohol for final preservation. Hydrographic data at all stations will include at a minimum chlorophylls, salinity, temperature and dissolved oxygen, and water color, using the Forel-ule test.

Right bongo samples and neuston samples collected in 1998 from SEAMAP stations will be transshipped by the NMFS Pascagoula Laboratory to the Polish Sorting and Identification Center for sorting and identification, after which they will be returned to the SEAMAP Archiving Center at Florida Marine Research Institute in St. Petersburg, Florida. Left bongo and neuston samples from previous surveys are currently archived at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC) housed at the USM/IMS Gulf Coast Research Laboratory in Ocean Springs, Mississippi.

Reef Fish Survey

The objectives of the survey are to:

(1) assess relative abundance and compute population estimates of reef fish using a trap/video technique;

(2) determine habitat using an echo sounder and video camera;

(3) determine if bioacoustics assessment methodology can be applied to reef fish communities;

(4) collect environmental data at each station; and

(5) collect ichthyoplankton samples at selected reef sites.

The primary purpose of this survey is to assess the relative abundance and compute population estimates of reef fish. Stations are randomly-selected 100 m^2 sites which are designated as "reef areas". Data is collected using the trap/video

methodology where a fish trap containing a video camera is deployed onto the selected reef site. Trap soak time is one hour. In addition, hydrographic and plankton data will be collected.

Summer Shrimp/Groundfish Survey

Objectives of this survey are to:

(1) monitor size distribution of penaeid shrimp during or prior to migration of brown shrimp from bays to the open Gulf;

(2) aid in evaluating the "Texas Closure" management measure of the GMFMC's Shrimp Fishery Management Plan;

(3) provide information on shrimp and groundfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm;

(4) obtain length frequency measurements for major finfish, shrimp and other important invertebrate species to determine population size structures; and

(5) collect ichthyoplankton samples to determine abundance and distribution of eggs and larvae of commercial and recreationally important species.

The sampling strategy will include sites chosen randomly in three areas (east of the Mississippi River, west of the River to the Texas-Louisiana border and off Texas) stratified by depth and statistical area. Trawls will be towed perpendicular to the depth contours and cover a specified depth stratum at each station. Plankton samples will be taken along a ½ degree grid system. Louisiana will take plankton samples at each trawl station.

Fall Shrimp/Groundfish Survey

Objectives of this survey will be to:

(1) sample the northern Gulf of Mexico to determine abundance and distribution of white shrimp and other demersal organisms from inshore waters to 60 fm;

(2) obtain length frequency measurements for major finfish, shrimp and other important invertebrate species to determine population size structures;

(3) collect environmental data to investigate potential relationships between abundance and distribution of organisms and environmental parameters; and

(4) collect plankton samples to determine relative abundance and distribution of eggs and larvae of commercial and recreationally important species.

Trawl sample stations and plankton sampling will be conducted as described for the Summer Shrimp/Groundfish Survey.

OPERATIONS

The following activities and events by participant comprise the SEAMAP-Gulf of Mexico operations schedule for the period January 1, 1998 to December 31, 1998:

Texas Parks and Wildlife Department

(1) Summer Shrimp/Groundfish Survey: June-July, nearshore and offshore Texas waters

(2) Fall Shrimp/Groundfish Survey: November, nearshore and offshore Texas waters

(3) Reef Fish Survey: sampling in Texas waters

(4) Adult Finfish Survey: March-May, nearshore Texas waters

(5) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(6) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Louisiana Department of Wildlife and Fisheries

(1) Plankton sampling in conjunction with trawl surveys

(2) Plankton sample sorting and identification

(3) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(4) Process sediment and chlorophyll samples

(5) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

University of Southern Mississippi/Institute of Marine Sciences/Gulf Coast Research Laboratory

(1) Summer Shrimp/Groundfish Survey: June and July, Gulf waters

(2) Fall Plankton Survey: September, nearshore and offshore Gulf waters

(3) Fall Shrimp/Groundfish Survey: November, Gulf waters

(4) Plankton sampling in conjunction with trawl surveys

(5) SEAMAP Invertebrate Plankton Archiving Center operations

(6) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(7) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Alabama Department of Conservation and Natural Resources

(1) Summer Shrimp/Groundfish Survey: June and July, nearshore Gulf waters

(2) Fall Plankton Survey: September, nearshore Gulf waters

(3) Fall Shrimp/Groundfish Survey: November, nearshore Gulf waters

(4) Reef Fish Survey: sampling in nearshore Alabama waters

(5) Plankton sampling in conjunction with trawl surveys

(6) Quarterly estuarine shrimp/groundfish sampling

(7) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(8) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Florida Department of Environmental Protection

(1) Spring Plankton Survey: May, nearshore/offshore Gulf waters off Florida

(2) Fall Plankton Survey: September, nearshore/offshore Gulf waters

(3) SEAMAP Archiving Center operations

(4) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(5) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

National Marine Fisheries Service, Southeast Fisheries Science Center

(1) Reef Fish Survey: July-August, offshore Gulf waters

(2) Spring Plankton Survey: April-May, offshore Gulf waters

(3) Summer Shrimp/Groundfish Survey: June-July, offshore Gulf waters

(4) Fall Plankton Survey: September-October, offshore Gulf waters

(5) Fall Shrimp/Groundfish Survey: October-November, offshore Gulf waters

(6) Plankton sampling in conjunction with trawl surveys

(7) SEAMAP Information System implementation and operations

(8) Processing and transshipment of SEAMAP plankton samples to the Polish Sorting and Identification Center

(9) Environmental sample processing

(10) Real-time data processing

(11) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

Gulf of Mexico Fishery Management Council

(1) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(2) Annual review of fisheries-independent data needs

Gulf States Marine Fisheries Commission

(1) Coordination of meetings for Subcommittee and work groups

(2) Provision of SEAMAP-Gulf Coordinator, clerical and office support

(3) Publication and distribution of SEAMAP Environmental and Biological Atlas, SEAMAP Marine Directory, SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee, Real-time data summaries, minutes of Subcommittee meetings and co-production of the SEAMAP Joint Annual Report

(4) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee

(5) Annual Operations Plan development

INFORMATION DISSEMINATION

Data produced from SEAMAP-Gulf of Mexico surveys and studies will be entered into the SEAMAP Information System, in accordance with procedures and protocols stated in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000*. User policies and procedures are also defined in this document.

The SEAMAP Archiving Center and SIPAC have the responsibility of maintaining SEAMAP specimens and samples, processing specimen requests and insuring that archiving and loans are carried out in accordance with guidelines and policies established by the SEAMAP Subcommittee. Specific duties and responsibilities of the curators are found in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan 1996-2000*.

Documents to be produced in the period covered by this Annual Operations Plan are:

(1) SEAMAP Annual Report, in conjunction with South Atlantic and Caribbean;

(2) SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee;

(3) SEAMAP Marine Directory;

(4) Minutes of Subcommittee meetings;

(5) SEAMAP Environmental and Biological Atlas;

(6) Annual Operations Plan;

(7) Real-time Data Summaries of the Summer Shrimp/Groundfish Survey; and

(8) Other pertinent documents deemed appropriate by the Subcommittee

ADMINISTRATION

Program administration is achieved through coordination by the SEAMAP-Gulf Subcommittee and work groups, the SEAMAP Coordinator, and the Gulf States Marine Fisheries Commission. General responsibilities are described below.

SEAMAP-Gulf of Mexico Subcommittee

The Subcommittee will convene for three regularly-scheduled meetings during 1998:

(1) Spring meeting (in conjunction with the GSMFC Annual Spring Meeting): March;

(2) Joint meeting (with SEAMAP-Caribbean & SEAMAP-South Atlantic): August; and

(3) Fall meeting (in conjunction with the GSMFC Annual Fall Meeting): October.

Other meetings may be called at the discretion of the Chairman. Specific responsibilities of the Subcommittee and procedures of governance are described in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000*. Designated members for 1998 are:

Texas Parks and Wildlife Department:	Terry Cody
Louisiana Department of Wildlife and Fisheries:	James Hanifen
University of Southern Mississippi Institute of Marine Science Gulf Coast Research Laboratory:	Richard Waller
Alabama Department of Conservation & Natural Resources:	Stevens Heath
Florida Department of Environmental Protection:	Mark Leiby
National Marine Fisheries Service:	Joanne Lyczkowski-Shultz
Gulf of Mexico Fishery Management Council:	Richard Leard (non-voting)

Work Groups

SEAMAP work groups are formed to assist in planning, coordinating and evaluating program activities. Members of work groups are invited to serve by the Subcommittee and do not have to be members of the Subcommittee. SEAMAP-Gulf work groups and membership for 1998 are:

ADULT FINFISH WORK GROUP

Terry Henwood
National Marine Fisheries Service
Pascagoula Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Mark Leiby
Florida Department of Environmental Protection

John Roussel
Louisiana Department of Wildlife and Fisheries

Robert Shipp
University of South Alabama

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Richard Leard
Gulf of Mexico Fishery Management Council

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

DATA COORDINATING WORK GROUP

Kenneth Savastano, Leader
SEAMAP Data Manager
National Marine Fisheries Service
Stennis Space Center

Stevens Heath
Alabama Department of Conservation and Natural Resources
Shrimp/Groundfish Work Group

Terry Henwood
National Marine Fisheries Service
Pascagoula Laboratory
Adult Finfish Work Group

Mike Murphy
Florida Department of Environmental Protection
Red Drum Work Group

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

Perry Thompson
National Marine Fisheries Service
Pascagoula Laboratory
Environmental Data Work Group

Richard Waller
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory
Chairman, SEAMAP Subcommittee/
Reef Fish Work Group

ENVIRONMENTAL DATA WORK GROUP

Perry Thompson. Leader
National Marine Fisheries Service
Pascagoula Laboratory

Stevens Heath
Alabama Department of Conservation and Natural Resources

Michelle Kasprzak
Louisiana Department of Wildlife and Fisheries

Thomas Leming
National Marine Fisheries Service
Pascagoula Laboratory

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Carmelo Tomas
Florida Department of Environmental Protection

Richard Waller
Gulf Coast Research Laboratory
University of Southern Mississippi
Institute of Marine Sciences

PLANKTON WORK GROUP

Joanne Lyczkowski-Shultz, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Churchill Grimes
National Marine Fisheries Service
Panama City Laboratory

Alonzo Hamilton
National Marine Fisheries Service
Pascagoula Laboratory

James Hanifen
Louisiana Department of Wildlife and Fisheries

Don Hoss
National Marine Fisheries Service
Beaufort Laboratory

Mark Leiby
Florida Department of Environmental Protection

Harriet Perry
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Rick Shaw
Louisiana State University

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

RED DRUM WORK GROUP

Mike Murphy, Leader
Florida Department of Environmental Protection

Phil Goodyear
National Marine Fisheries Service
Miami Laboratory

James Warren
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Joseph Shepard
Louisiana Department of Wildlife and Fisheries

Joanne Lyczkowski-Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Larry McEachron
Texas Parks and Wildlife Department

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

REEF FISH WORK GROUP
Richard Waller, Leader
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Chris Gledhill
National Marine Fisheries Service
Pascagoula Laboratory

Richard Kasprzak
Louisiana Department of Wildlife and Fisheries

Mark Leiby
Florida Department of Environmental Protection

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

SHRIMP/GROUNDFISH WORK GROUP
Stevens Heath, Leader
Alabama Department of Conservation and Natural Resources

Billy Fuls
Texas Parks and Wildlife Department

James Hanifen
Louisiana Department of Wildlife and Fisheries

Bruce Comyns
University of Southern Mississippi
Institute of Marine Sciences
Gulf Coast Research Laboratory

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Nate Sanders
National Marine Fisheries Service
Pascagoula Laboratory

SEAMAP work groups will meet as determined by work group leaders. Specific responsibilities of the work groups are described in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000*.

SEAMAP-Gulf Coordinator

The Coordinator's primary responsibility is to assist the Subcommittee in ensuring that the SEAMAP-Gulf component functions efficiently and satisfies user requirements. The *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000,* schedule of events, survey plans, and GSMFC directives constitute the basic documents by which the Coordinator monitors program status, coordinates Subcommittee meetings and operations, anticipates potential problems, and initiates corrective action. Specific responsibilities of the Coordinator are described in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1996-2000*.

Gulf States Marine Fisheries Commission

Planning and funds disbursement for authorized SEAMAP-Gulf administrative activities (travel meetings, publications, information dissemination, etc.) are administered by the Gulf States Marine Fisheries Commission under a NMFS/GSMFC Cooperative Agreement, and in accordance with this Annual Operations Plan, GSMFC policies, and Department of Commerce/National Oceanic and Atmospheric Administration policies and procedures.