

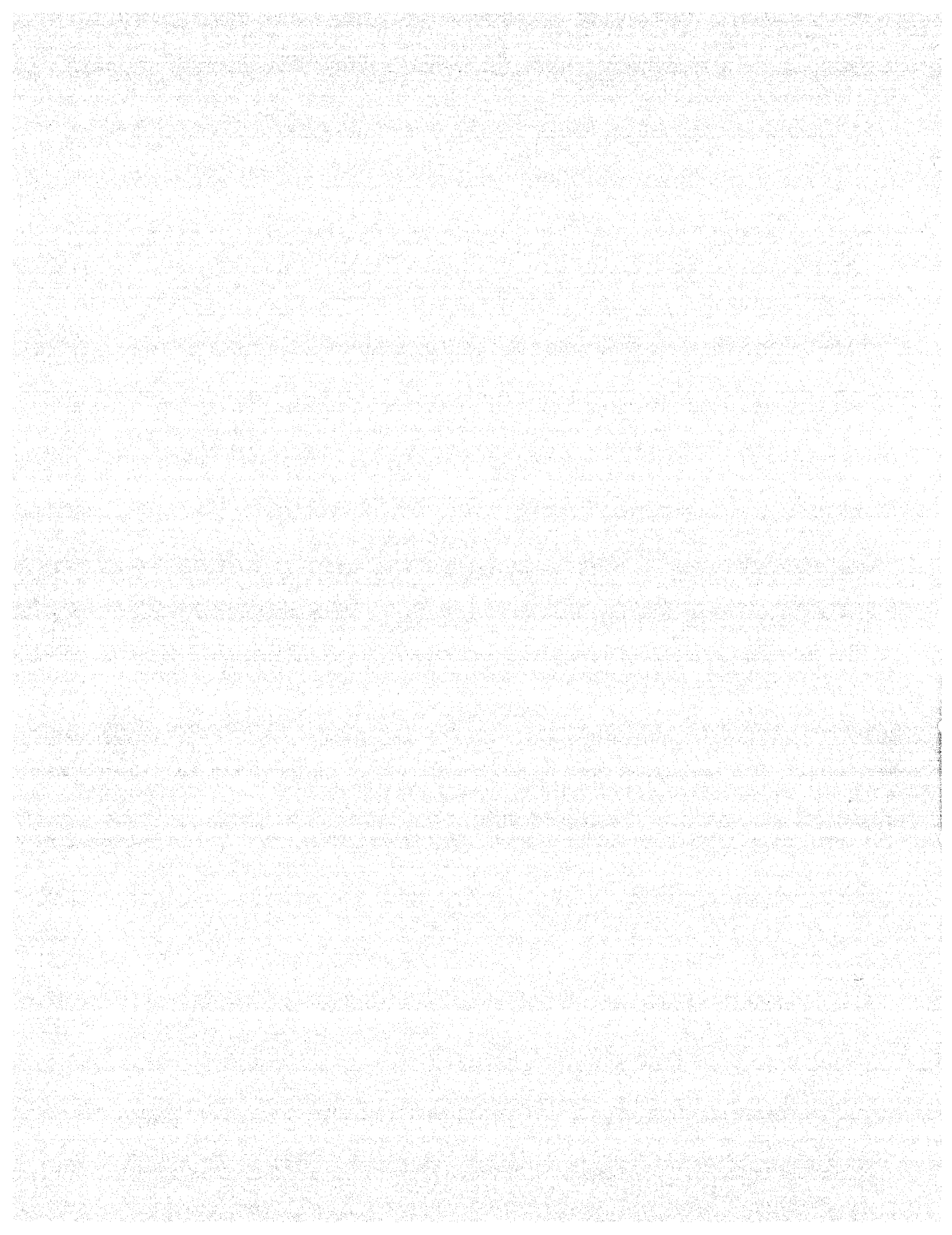
SEAMAP ANNUAL REPORT

TO THE
TECHNICAL COORDINATING COMMITTEE OF THE
GULF STATES MARINE FISHERIES COMMISSION

OCTOBER 1, 1992 - SEPTEMBER 30, 1993

SEAMAP SUBCOMMITTEE
Walter Tatum, Chairman

September 30, 1993



ANNUAL REPORT

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WALTER M. TATUM, 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 mid-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 1985-1993 (October 1 through September 30). State and Gulf States Marine Fisheries Commission (GSMFC) funding allocations for FY1985-FY1993 were handled through State-Federal cooperative agreements, administered by SERO and the Southeast Fisheries Science Center (SEFSC), National Marine Fisheries Service (NMFS).

In FY1993, SEAMAP operations continued for the twelfth consecutive year. SEAMAP resource surveys included the Fall Shrimp/Groundfish Survey, Winter Ichthyoplankton Survey, Louisiana seasonal trawl surveys, Spring Plankton Survey, Spring Reef Fish Survey, Summer Shrimp/Groundfish Survey, Fall Plankton Survey and plankton and environmental data surveys. Special projects for FY1993 consisted of the Status and Trends Benthic Surveillance Project. Other FY1993 activities included SEAMAP information services and program management.

This report is the tenth 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 FY1993 and proposed SEAMAP activities for FY1994.

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

FY1993 SEAMAP RESOURCE SURVEYS

In FY1993, collection of resource survey information continued for the twelfth 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 September 28 to November 23, 1992, from off Mobile, Alabama to the U.S.-Mexican border. Vessels sampled waters out to 60 fm, covering a total of 344 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:

- (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 221 stations in offshore waters and territorial Louisiana and Texas waters. The R/V VERRILL sampled 8 stations in Alabama territorial waters. The R/V TOMMY MUNRO sampled 15 stations in Mississippi territorial and offshore waters. The R/V PELICAN sampled 20 stations in Louisiana territorial and offshore waters. And Texas vessels sampled 80 stations within their territorial waters.

Ichthyoplankton data were collected by NMFS and Louisiana vessels, at sample sites occurring nearest to half-degree intervals of latitude/longitude. A total of 35 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. NMFS completed 30 ichthyoplankton stations and Louisiana completed 5 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 in October and December 1992 and March and July 1993 aboard the R/V PELICAN. A stratified random station selection design was maintained, varying from the transects previously surveyed. A total of 48 stations was sampled during day and night at depths up to 20 fm. The July sampling was completed as part of the SEAMAP Summer Shrimp/Groundfish Survey.

All seasonal trawls were completed with the standard SEAMAP 40-ft 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 SAC in St. Petersburg, Florida. The area sampled covered Louisiana territorial and EEZ waters from 89°30' to 91°30' W. longitude.

Winter Ichthyoplankton Survey

The Plankton Work Group has expressed some interest in conducting a winter plankton survey since there is no SEAMAP plankton information during this time period. In an effort to collect samples in the winter, a SEAMAP ichthyoplankton survey was piggybacked on a winter marine mammals cruise. The plankton survey was conducted from January 5, to February 13, 1993. The NOAA Ship OREGON II sampled offshore waters from Mobile Bay, Alabama to the Texas-Mexico border. A total of 222 bongo, 111 neuston, and 32 Tucker trawl samples were collected.

Plankton collections were generally taken only during night hours when marine mammal observations could not be made. Plankton samples were taken with standard SEAMAP bongo and neuston samplers. The bongo sampler consisted of two conical 60-cm nets with 335-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. The Tucker trawl used for discrete depth sampling has a 1 m² mouth opening and was fitted with three, 335-micron mesh nets. 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.

Hydrographic data at all stations included surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom and fore-ule color.

Right bongo and neuston samples collected by NMFS from SEAMAP stations will be transshipped to the PSIC. Left bongo samples will be archived at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC) which is located at the Gulf Coast Research Laboratory in Ocean Springs, Mississippi.

Spring Plankton Survey

For the eleventh year, plankton samples were collected during the spring in the northern Gulf of Mexico. The NOAA Ship OREGON II and Florida's R/V HERNAN CORTEZ II sampled offshore waters from the western edge of the West Florida Shelf to the Texas-Louisiana border from April 24 to June 15, 1993. A total of 236 stations was sampled. The OREGON II sampled 217 stations and the R/V HERNAN CORTEZ II sampled 19 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.

Hydrographic data at all stations included surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom and Forel-ule color.

Right bongo and neuston samples collected by NMFS and Florida from SEAMAP stations will be transshipped to the PSIC. Left bongo samples will be archived at the SIPAC. Salinity data from the Florida vessel were sent to the NMFS Mississippi Laboratories for interpretation.

Spring Reef Fish Survey

The second Spring Reef Fish Survey was started on May 17 and will continue into October 1993. Vessels from NMFS, Mississippi, Alabama and Florida sampled inshore

and offshore waters, covering approximately 190 stations, in addition to plankton and environmental sampling. Randomly selected sites from Brownsville, Texas to Key West, Florida are chosen from known hard bottom locations. The objectives of the survey are:

- (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 x 100 m² 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) survey site selection; 3) sampling protocol using a fish trap and video camera and 4) analyses of 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 PSIC.

Final analyses of video tapes are accomplished at the Pascagoula Laboratory, 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

A planning meeting of the Shrimp/Bottomfish Work Group was held in April 1993 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 bottomfish stocks across the northern Gulf of Mexico from inshore waters to 50 fm.

The overall sampling strategy during the 1993 SEAMAP summer 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 survey occurred from June 1 to July 18, 1993.

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 336 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.

Catch rates of brown shrimp east of the River were very low, with a maximum catch of 8.8 lb/hr of 46-count shrimp. White shrimp catches east of the River were all less than 1 lb/hr. The largest pink shrimp catch rate east of the River was 7.5 lb/hr of 26-count shrimp taken in 12 fm of water off Mississippi. Finfish catch rates east of the River were low, with the largest catch of 708 lb/hr with Atlantic croaker predominating.

Low catches of brown shrimp were made off Texas from June 1 to July 4. The largest catch rate occurred June 22 in waters off Port Isabel in 18 fm (46.3 lb/hr of 84-count shrimp). White shrimp catches off Texas were very low with the largest catch, 19.3 lb/hr of 15-count shrimp, taken off of Corpus Christi in 9 fm. Catch rates for pink shrimp were very low off Texas, with the largest catch, 48.9 lb/hr of 40-count shrimp, taken off the lower Laguna Madre in 13 fm. Finfish catch rates were low in Texas inshore and offshore waters. The largest catch of finfish was 1,057 lb/hr in 9 fm off Galveston Bay with Atlantic croaker predominating.

In July's samples west of the river (Louisiana) brown shrimp catches were low with the largest catch rate of 50.1 lb/hr of 129-count shrimp occurring southwest of Sabine Lake in 3 fm. White shrimp catches were extremely low, with a maximum catch rate of 20.2

lb/hr of 18-count shrimp taken in 3 fm south of Vermilion Bay. Catches of pink shrimp were all less than 3 lb/hr off the Louisiana coast. Finfish catch rates were also low with the largest catch rate of 1,217 lb/hr taken on July 17 with Atlantic croaker predominating.

Several areas of low bottom dissolved oxygen (less than 2 ppt) occurred off Louisiana between off Sabine Lake and the Mississippi River in depths of 6 to 18 fms.

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 1986-1992 and in the current year covered Gulf waters from Florida Bay to Brownsville, Texas. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS began surveying on August 29 and will continue until October 9, 1993.

The NOAA Ship OREGON II is sampling stations from Tampa Bay, Florida to Brownsville, Texas at depths from 5 to 100 fm. Chlorophyll samples were filtered at each station. Florida's R/V HERNAN CORTEZ is sampling stations from off Tampa Bay south to the Florida Straits area. Stations were located along a 30-minute latitude/longitude grid from inshore waters to the shelf edge. An Alabama vessel 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. And the R/V PELICAN is sampling stations in Louisiana territorial waters.

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. Hydrographic sampling included chlorophylls, salinity, temperature and dissolved oxygen from surface, mid-water, and bottom, water transparency and water color. 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 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 transshipment to Poland, 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 FY1993, as detailed earlier.

FY1993 SEAMAP SPECIAL PROJECTS

In addition to the regularly-scheduled surveys, SEAMAP participates in a variety of other projects. The SEAMAP provides guidance, personnel and other contributions to these studies for enhancement and protection of the marine resources in the Gulf of Mexico.

Status and Trends Benthic Surveillance Project

For the tenth year, the SEAMAP actively participated in the nationwide sampling for contaminants in coastal fishes and sediments, as part of the NOAA National Status and Trends Benthic Surveillance Project. Both SEAMAP-Gulf of Mexico and SEAMAP-South Atlantic supplied personnel from state fishery management agencies to provide guidance in locating concentrations of the target species, Atlantic croaker and spot.

Sampling methodologies in the 1993 Benthic Surveillance Project were identical to those of the previous surveys. Gulf of Mexico sites included: Charlotte Harbor (FL), Tampa Bay (FL), Apalachicola Bay (FL), St. Andrews Bay (FL), Choctawhatchee Bay (FL) and Pensacola Bay (FL). South Atlantic sites sampled in 1993 included: Cape Fear (NC), Charleston Harbor (SC), Savannah River (GA), Sapelo Sound (GA), St. Johns River (FL), St. Lucie River (FL) and Biscayne Bay (FL). The locations of sampling sites are shown in Figure 1.

Sampling began on August 2 and will continue until October 1, 1993, with the NOAA Ship FERREL serving as the primary platform. Analyses of trace metals, aromatic and chlorinated hydrocarbons, and other contaminants in fish tissues and sediments are coordinated by the NMFS Beaufort (NC) Laboratory.

A list of publications produced under NOAA's National Status and Trends Program is available from NOAA, National Status and Trends Program, N/OMA32, 11400 Rockville Pike, Rockville, MD 20852.



SAMPLE SITES

- A. Cape Fear
- B. Charleston Harbor
- C. Savannah River
- D. Sapelo Sound
- E. St. Johns River
- F. St. Lucie River
- G. Biscayne Bay
- H. Charlotte Harbor
- I. Tampa Bay
- J. Apalachicola Bay
- K. St. Andrews Bay
- L. Choctawhatchee Bay
- M. Pensacola Bay

Figure 1. Status and Trends Benthic Surveillance Project Sampling Sites

INFORMATION SERVICES

Information from the SEAMAP activities is provided to user groups through the program administration and three complementary systems: the SEAMAP Information System (SIS), SAC 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 SIS, SAC 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 SIS, 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 1982-1991 have been entered into the system and data from 1992 and 1993 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 requestors, although the highest priority is assigned to SEAMAP participants. A total of 130 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, 127 requests have been completed and work is being performed on those remaining.

Requested SEAMAP data were used for a multitude of purposes in FY1993:

- 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 1990 and 1991 SEAMAP Biological and Environmental Atlases.
- 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) 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 has been completed. Delivery of the remaining PS/2's has been completed and all of the Gulf States are now equipped with the necessary computer hardware and software.

The new 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 new system overcomes the deficiencies of the old system (i.e., the time necessary to enter and retrieve data) and provides powerful and flexible local data analysis and display capabilities. Under the new system, each SEAMAP site enters, verifies and edits their data, eliminating the mail-oriented loop necessary to enter/edit/verify data under the old system. 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 new system, outside users (e.g., Minerals Management Service, U.S. Army Corps of Engineers, etc.) may continue to 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 SIS in FY1993 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. Management agencies also received comprehensive data listings showing penaeid shrimp length frequencies, sampling parameters and environmental conditions. Representative listings are shown in Figures 2-9.

SEAMAP93 DATA, OREGON II

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WD38	7/13/93	28-36.8	91-37.3	07	20	29.5	21.6		2.2	ST	24		1	.9	28.7	0	0	1	0	1	7

SPECIES: BROWN WEIGHT: .882 NUMBER: 32 MODE: 112/ 6
 LEN(MM)/FREQ. 100/ 4 110/ 20 120/ 4 130/ 3

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WD37	7/13/93	28-36.3	91-29.3	09	19	29.4	21.8		2.9	ST	28		1	1.2	22.3	0	0	1	0	1	11

SPECIES: BROWN WEIGHT: .661 NUMBER: 23 MODE: 0/ 0
 LEN(MM)/FREQ. 110/ 3 120/ 12 130/ 5 140/ 1 150/ 1

SPECIES: WHITE WEIGHT: .551 NUMBER: 3 MODE: 0/ 0
 LEN(MM)/FREQ. 170/ 1 190/ 1 200/ 1

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WD33	7/13/93	28-38.1	91-20.0	12	15	29.9	22.7		2.4	ST	22		1	.0	4.4	0	0	0	0	25	2

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WD27	7/13/93	28-55.7	91-33.3	15	9	29.9	25.3		1.4	ST	28		1	.0	.0	0	0	0	0	0	0

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WN07	7/13/93	29-02.0	92-10.3	20	11	29.9	22.3		.9	ST	24		1	.0	.0	0	0	0	0	0	0

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WN08	7/13/93	28-59.8	92-09.5	21	12	29.3	21.9		1.4	ST	27		1	.0	.0	0	0	0	0	0	0

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WN32	7/13/93	28-51.9	91-56.6	23	14	29.2	22.8		2.2	ST	43		1	.0	.2	0	0	0	0	0	0

SPECIES: BROWN WEIGHT: .022 NUMBER: 1 MODE: 92/ 1
 LEN(MM)/FREQ. 90/ 1

PLAT	STATION	DATE	LAT	LONG	TIME	FMS	SUR	BOT	MG/M3	BDO	GEAR	MIN	FISH	TOWS	SHRIMP	FINFISH	CRK	SPT	TRT	CAT	OTHER	LBS
1	WN29	7/14/93	28-56.4	91-47.9	01	11	29.2	23.0		1.5	ST	43		1	.0	.0	0	0	0	0	0	0

Figure 2. Real-Time Data Listings, 1993 SEAMAP Summer Shrimp/Groundfish Survey

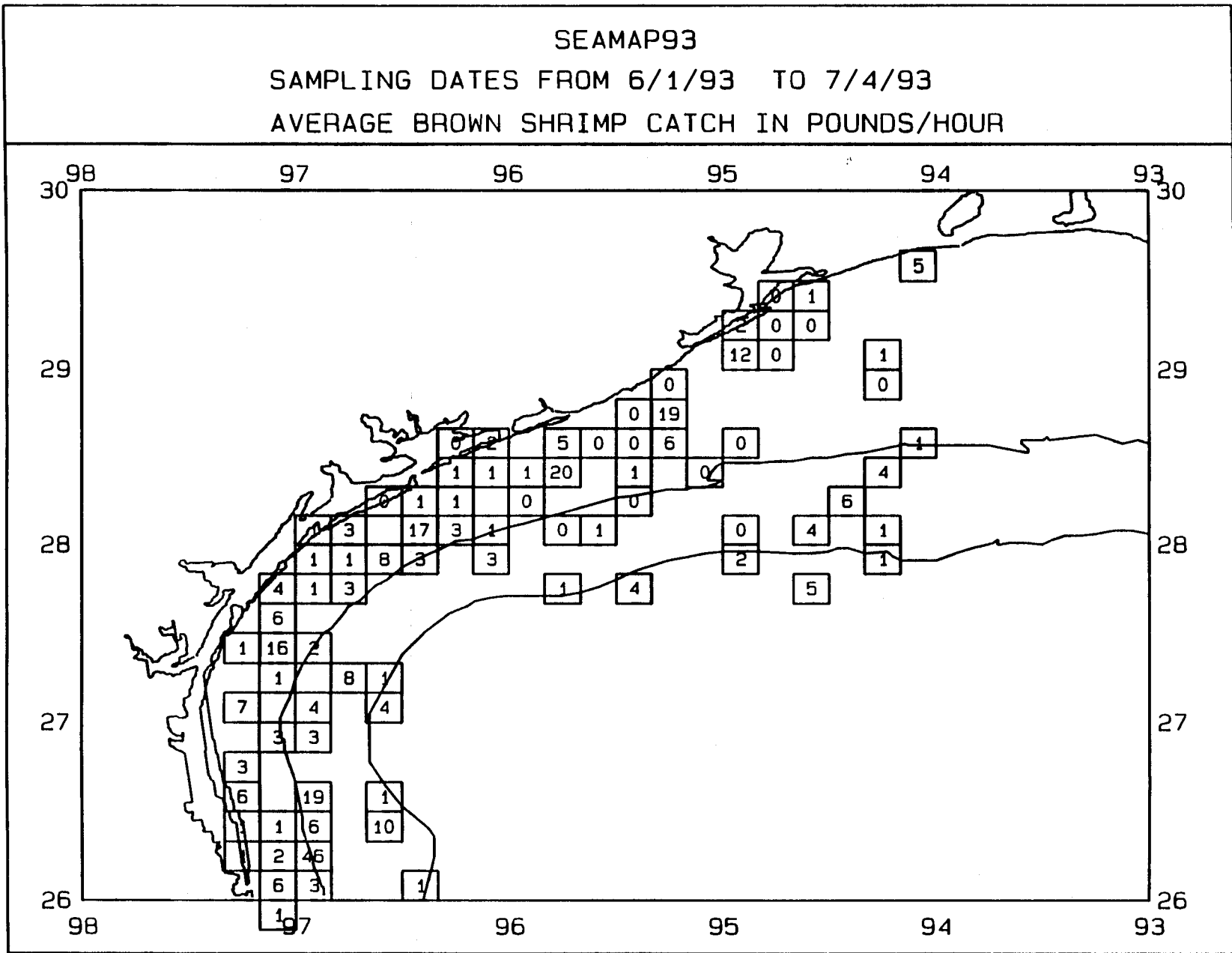


Figure 3. Real-Time Data Catch Plots, 1993

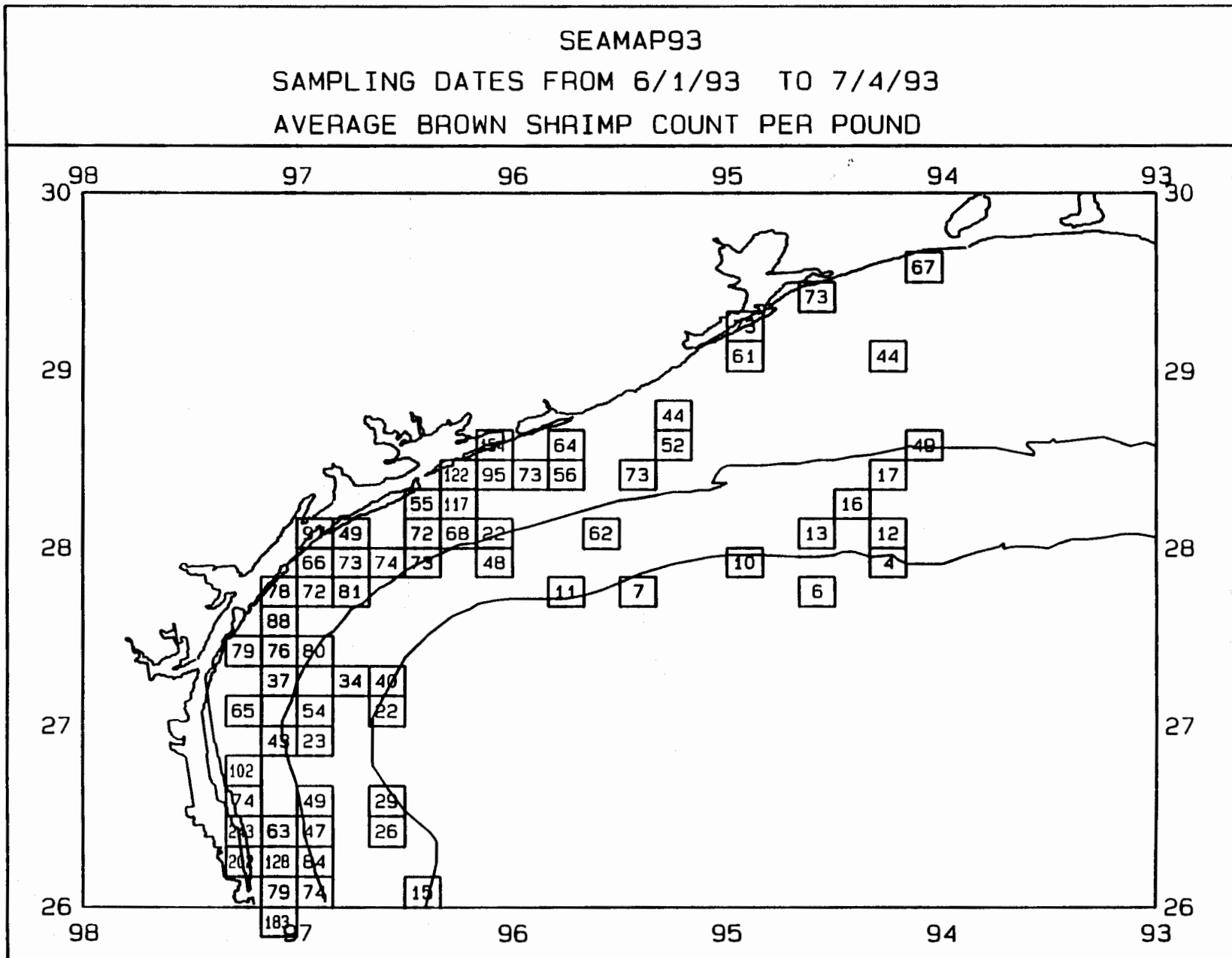


Figure 4. Real-Time Data Catch Plots, 1993

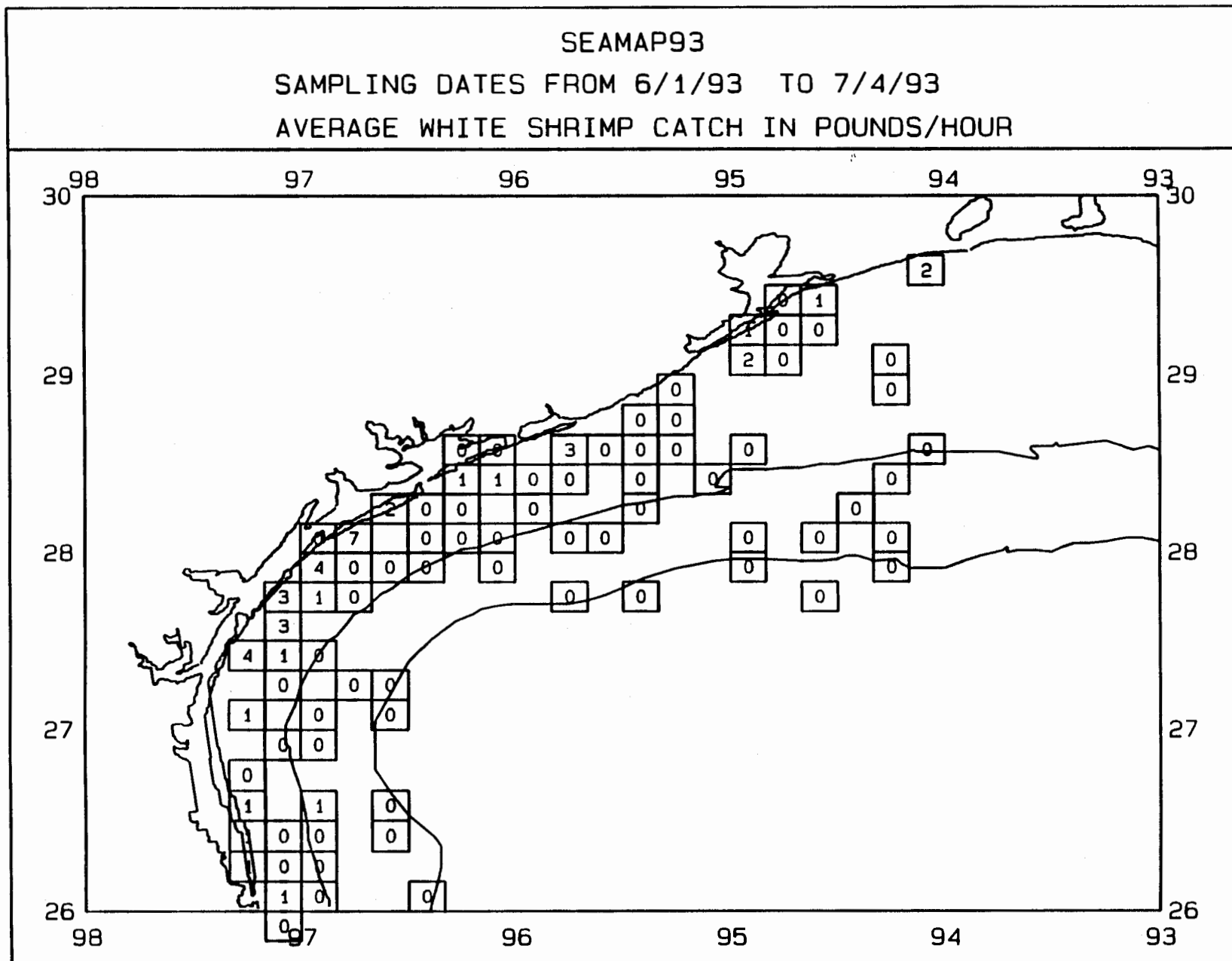
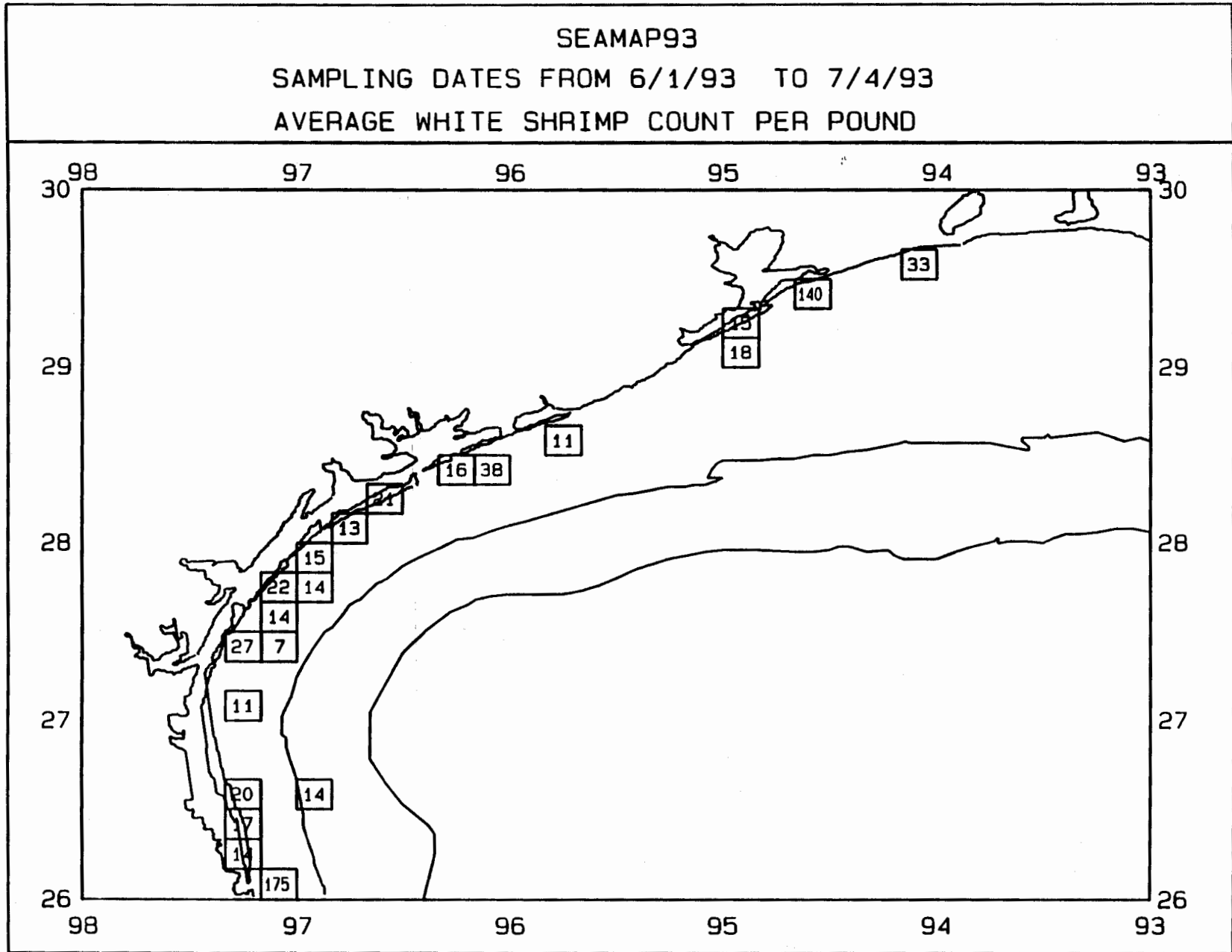


Figure 5. Real-Time Data Catch Plots, 1993



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Figure 6. Real-Time Data Catch Plots, 1993

SEAMAP93

SAMPLING DATES FROM 6/1/93 TO 7/4/93

AVERAGE PINK SHRIMP CATCH IN POUNDS/HOUR

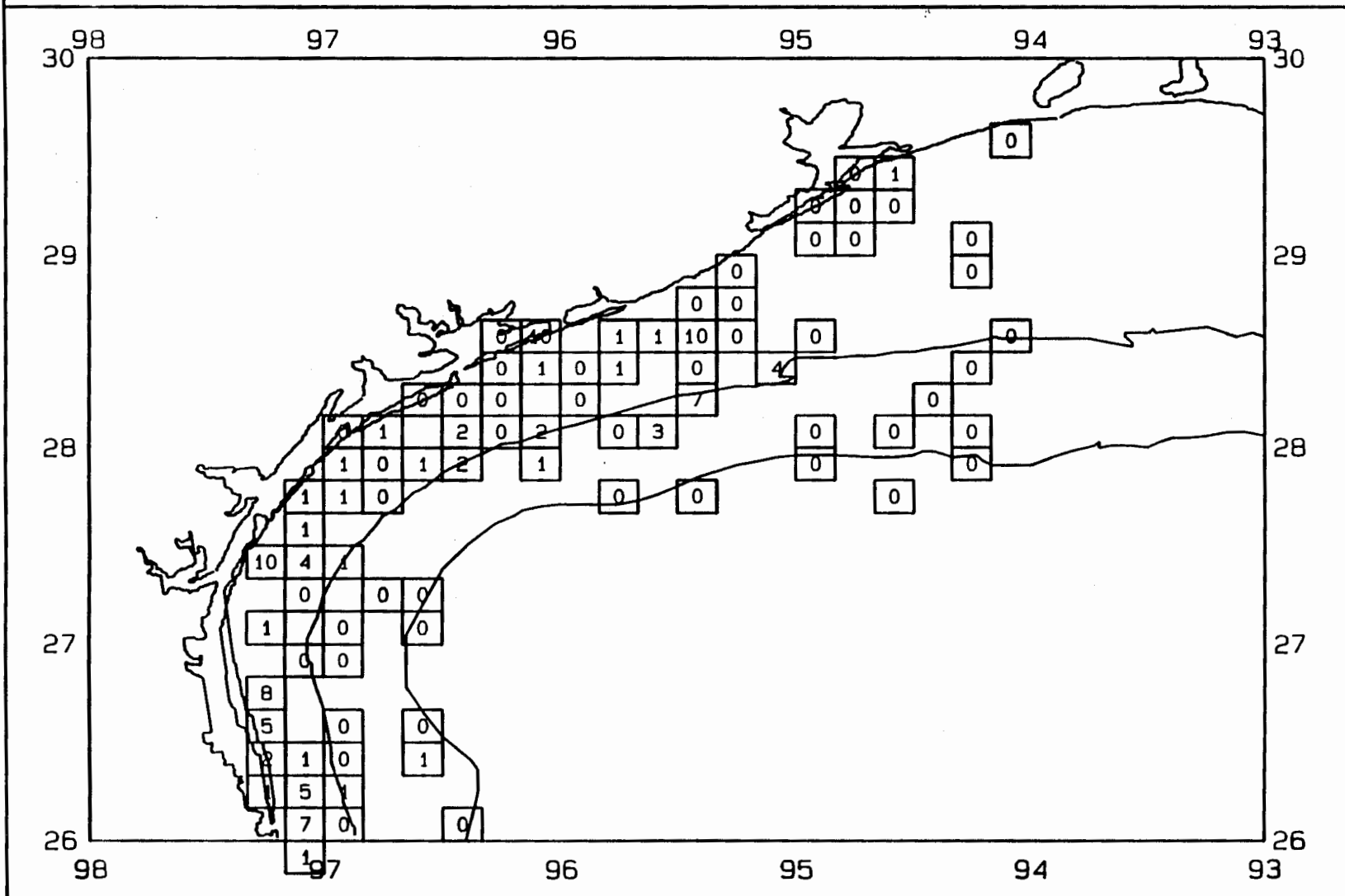


Figure 7. Real-Time Data Catch Plots, 1993

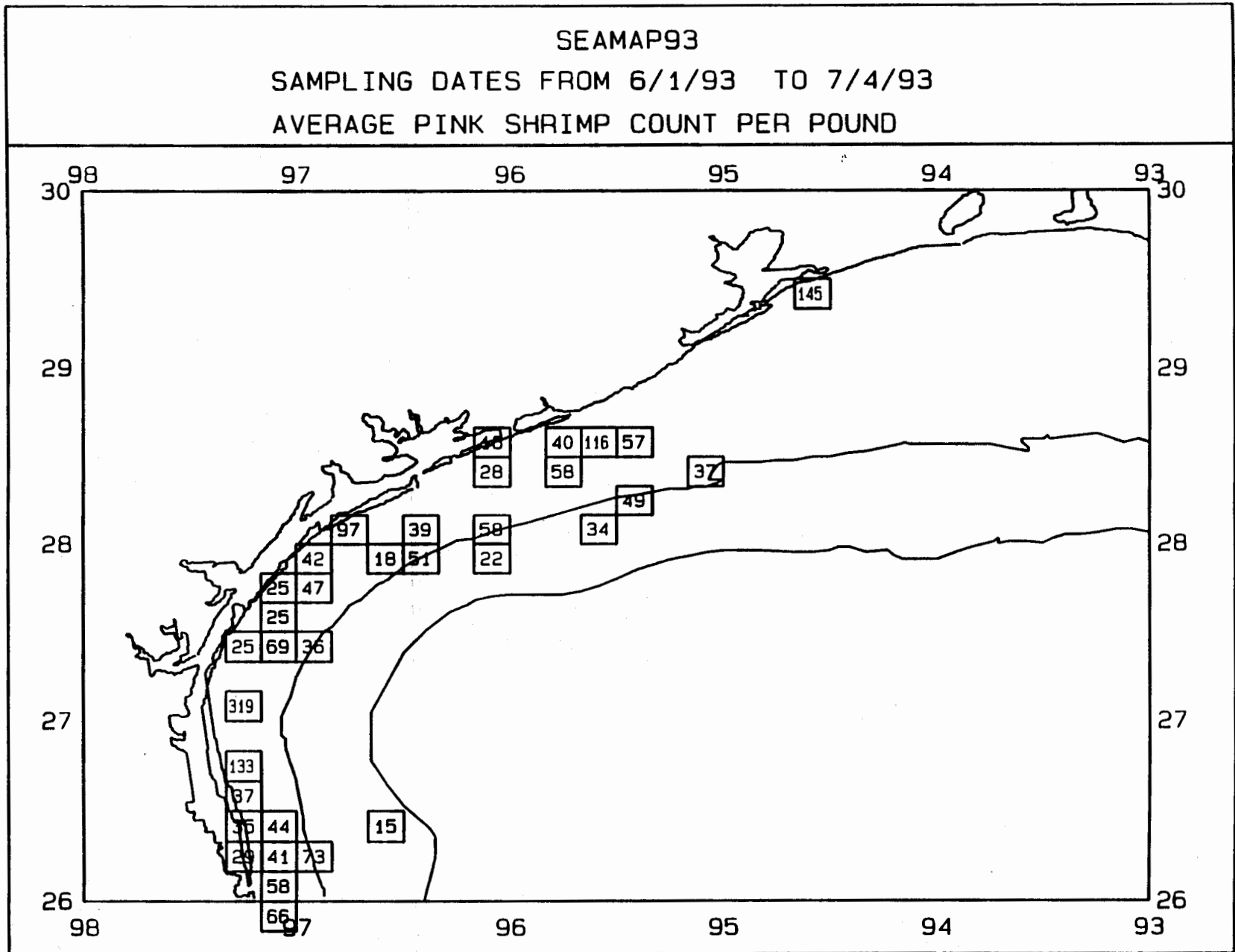


Figure 8. Real-Time Data Catch Plots, 1993

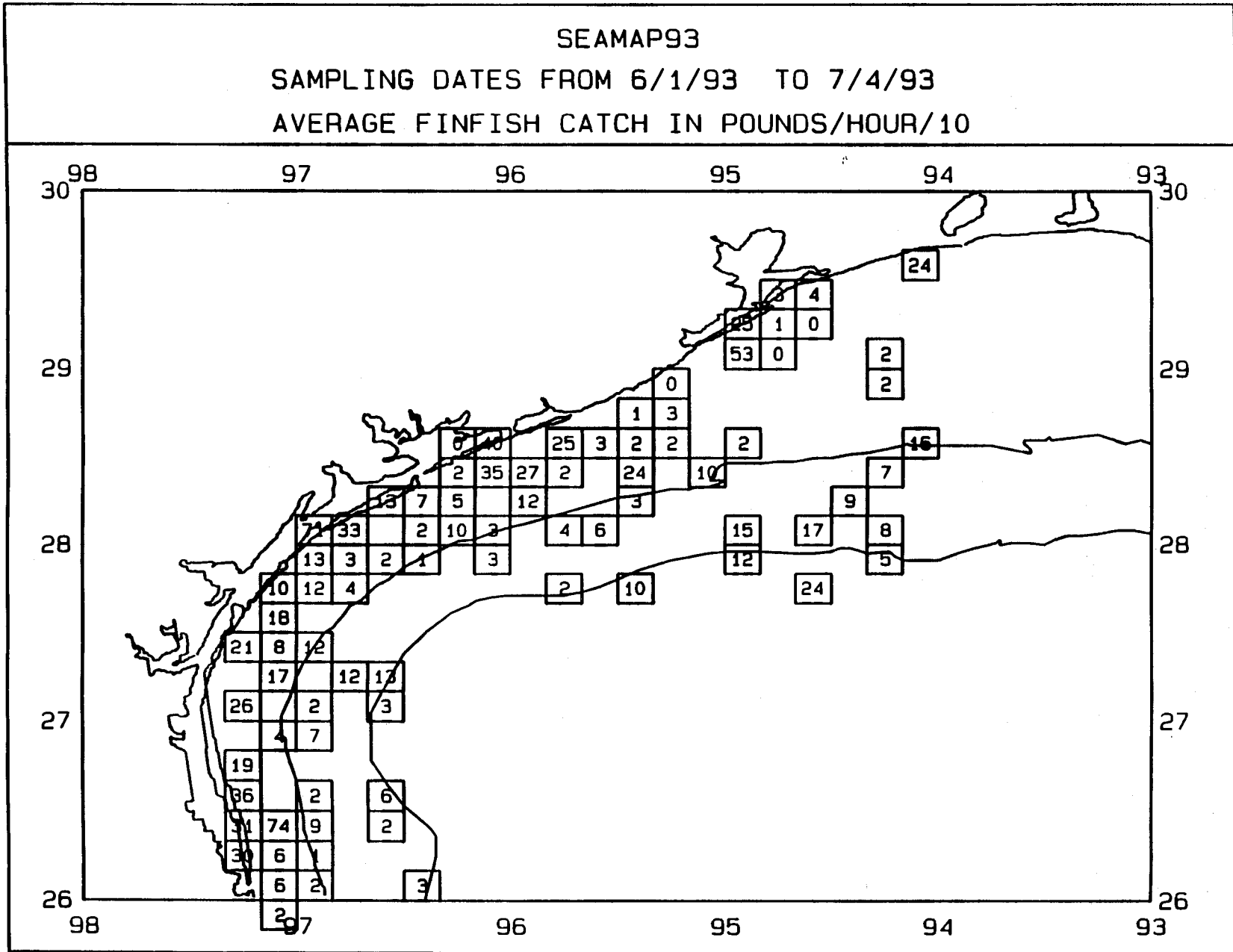


Figure 9. Real-Time Data Catch Plots, 1993

SEAMAP Archiving Center

Larval fish and fish egg samples sorted to the family level by the PSIC are returned to the SAC for archiving and loan to researchers. Data entry for most of the returned sorted samples is completed in an improved and simplified information management system. All data are now managed by a dual microcomputer/mainframe program which eliminates coding errors and facilitates faster data entry. Samples cataloged to date represent 18 orders, 125 families, 234 genera and 244 species.

The SAC is managed in conjunction with Florida Department of Environmental Protection (FDEP) in St. Petersburg, Florida and processes both specimen loans and requests for associated plankton survey environmental data. Currently, the SAC is being reorganized and lines of supervisory responsibilities are being changed due, in part, to the departure of Dr. John V. Gartner, Jr. He has done an exemplary job in organizing and running the SAC from its inception. A new collection manager and half-time assistant for the collection manager have been hired. The backlog of uncatalogued samples has been eliminated, and all new samples are being processed as they arrive.

The SAC personnel and other staff from FDEP will be participating in the fall ichthyoplankton cruise starting the week of October 11, 1993.

SEAMAP Invertebrate Plankton Archiving Center

With the determination in 1985 by the SEAMAP-Gulf Subcommittee that the retained "back-up" bongo collections also contain valuable research materials, the SIPAC was established and is managed in conjunction with Gulf Coast Research Laboratory in Ocean Springs, Mississippi.

Curation and management of SEAMAP zooplankton samples and sorting for selected invertebrates continues at the SIPAC for the seventh consecutive year. The SIPAC continues to provide both sorted and unsorted SEAMAP zooplankton samples and data on those samples to researchers and other user groups as requested.

During the FY1993, 92 unsorted SEAMAP samples were received and catalogued at SIPAC. As of September 30, 1993, a total of 4,978 unsorted fish larvae samples is held at SIPAC. In an effort to limit the space and costs of curating the growing SIPAC collection of unsorted samples, a protocol was adopted to retain only a 1/4 aliquot of samples that are more than 7 years old. To date, 1,500 samples were aliquoted including all of the 1982-1984 samples and retained in the collection. The remaining volumes of the samples have been donated to several educational organizations for use as instructional materials. Data on SEAMAP samples added to the SIPAC collection and samples aliquoted for long-term storage has been entered into the SIPAC data base.

Updated computer files on the SIPAC holdings have been and requested by and provided to NMFS-Pascagoula personnel.

During FY1993 a total of 160 SEAMAP samples have been sorted for selected invertebrate taxa by the SIPAC and the PSIC following established protocol. A total of 607 lots were obtained from these samples. As of September 30, 1993, a total of 5,415 lots of invertebrates have been sorted from 1,278 samples. All portunid crab megalopae from the sorted samples have been further identified to the lowest possible taxonomic level. A substantial data base has been established on the occurrence and distribution of blue crab and other portunid megalopae from the northern Gulf of Mexico. This data is available to researchers upon request.

During the next fiscal year, the SIPAC collection will continue to be maintained and additional samples will be sorted for invertebrates, contingent on funding. Activities will include: aliquoting of low priority samples for long-term archiving; recycling old sample jars; and maintaining data on unsorted and sorted samples. Emphasis will be placed on building a substantial data base on the occurrence and distribution of megalopae blue crabs and postlarval penaeid shrimp.

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, SAC Curator, SIPAC Curator and the NMFS-Pascagoula Laboratory Director, serving as Program Manager.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 1992 and March 1993, in conjunction with the Annual Fall and Spring Meetings of the GSMFC. All meetings included participation by the work group leaders, Coordinator, Data Manager, curators 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 1993 to discuss respective program needs and priorities for FY1994. Minutes for all the meetings are listed in Appendix I.

SEAMAP-Gulf work groups met this past year to provide recommendations to the Subcommittee for survey and data management needs. The Environmental Data Work Group met in March and September (via conference call) 1993 to address some of the problems encountered by SEAMAP personnel in sampling environmental data during the surveys. The Shrimp/Groundfish Work Group met in April 1993 to discuss the finalizations of the Summer Shrimp/Groundfish Survey. And the Reef Fish Work Group met in September 1993 (via conference call) for their first meeting to discuss the sampling protocol and methodology for the SEAMAP Reef Fish Survey. 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 FY1993. 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 FY1994 Activities

Preliminary FY1994 SEAMAP-Gulf budget allocations are shown in Table 3. Total program allocations for all three SEAMAP components, Gulf, South Atlantic and Caribbean, is \$1,340,000. At the August meeting, the SEAMAP components based their allocations on level funding (\$1.34K) for FY1994. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be \$602,827.

Proposed FY1994 activities for all Gulf participants are shown in Table 4. The approved 1994 Operations Plan for SEAMAP-Gulf is contained in Appendix II. It should be noted that the SEAMAP fiscal year begins on January 1 thus, fall activities for FY1994 will be conducted from October-December 1993.

Information Dissemination

The following documents were published and distributed in FY1993:

- *1993 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, 1992 to September 30, 1993.* 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, 1991 to September 30, 1992.* A summary of 1992 activities and proposed 1993 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.
- *Environmental and Biological Atlas of the Gulf of Mexico, 1990.* A compilation of information obtained from the 1990 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, 1991.* A compilation of information obtained from the 1991 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.

FY1993 Financial Report

Total allocations for FY1993 program administration were \$91,345. 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, 1993.

TABLE 1.

SEAMAP REPRESENTATIVES FOR FY1993

Walter M. Tatum, Chairman
Alabama Department of Conservation and Natural Resources

proxy: Stevens Heath

Richard Waller, Vice Chairman
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

proxy: Thomas McIlwain

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Joe Kimmel
Florida Department of Environmental Protection

proxy: Mark Leiby

Terry Cody
Texas Parks and Wildlife Department

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Steven Atran (non-voting)
Gulf of Mexico Fishery Management Council

TABLE 2.

SEAMAP WORK GROUP MEMBERS FOR FY1993

ADULT FINFISH WORK GROUP

Billy Fuls
Texas Parks and Wildlife Department

Joe Kimmel
Florida Department of Environmental Protection

Tom McIlwain
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

John Roussel
Louisiana Department of Wildlife and Fisheries

Robert Shipp
University of South Alabama

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Wayne Swingle
Gulf of Mexico Fishery Management Council

James Warren
Mississippi Department of Wildlife, Fisheries and Parks
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

Thomas McIlwain
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory
Red Drum Work Group

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

Walter Tatum
Alabama Department of Conservation and Natural
Resources
Chairman, SEAMAP Subcommittee

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

Richard Waller
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory
Reef Fish Work Group

ENVIRONMENTAL DATA WORK GROUP

Perry Thompson, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Charles Eleuterius
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Stevens Heath
Alabama Department of Conservation and Natural
Resources

Carmello Tomas
Florida Department of Environmental Protection

Michelle Kasprzak
Louisiana Department of Wildlife and Fisheries

Richard Waller
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Thomas Leming
National Marine Fisheries Service
Pascagoula Laboratory

PLANKTON WORK GROUP

Joanne Shultz, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Churchill Grimes
National Marine Fisheries Service
Panama City Laboratory

Mark Leiby
Florida Department of Environmental Protection

Alonzo Hamilton
National Marine Fisheries Service
Pascagoula Laboratory

Harriet Perry
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Rick Shaw
Louisiana State University

Don Hoss
National Marine Fisheries Service
Beaufort Laboratory

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

RED DRUM WORK GROUP

Thomas McIlwain, Leader
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Richard Condrey
Louisiana State University

Joseph Shepard
Louisiana Department of Wildlife and Fisheries

Phil Goodyear
National Marine Fisheries Service
Miami Laboratory

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Larry McEachron
Texas Parks and Wildlife Department

Mark Van Hoose
Alabama Department of Conservation and Natural
Resources

Mike Murphy
Florida Department of Environmental Protection

REEF FISH WORK GROUP

Richard Waller, Leader
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Billy Fuls
Texas Parks and Wildlife Department

Joe Kimmel
Florida Department of Environmental Protection

Chris Gledhill
National Marine Fisheries Service
Pascagoula Laboratory

Mark Van Hoose
Alabama Department of Conservation and Natural
Resources

Richard Kasprzak
Louisiana Department of Wildlife and Fisheries

SHRIMP/GROUNDFISH WORK GROUP

Stevens Heath, Leader
Alabama Department of Conservation and Natural Resources

Billy Fuls
Texas Parks and Wildlife Department

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Nate Sanders
National Marine Fisheries Service
Pascagoula Laboratory

Terry McBee
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

TABLE 3.
PRELIMINARY FY1994 PROGRAMMATIC BUDGET

ADCNR	\$ 80,000
FDEP	110,401
GSMFC	94,781
LDWF	142,000
MDWFP/GCRL	109,170
TPWD	66,475
TOTAL	\$602,827
NMFS	\$274,545

TABLE 4.
PROPOSED SEAMAP-GULF ACTIVITIES, FY1994

	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:				
1992 Biological and Environmental Atlas				X
1994 Marine Directory			X	
FY1993 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

APPENDICES

APPENDIX I

SEAMAP SUBCOMMITTEE MINUTES Tuesday, October 13, 1992 Mobile, Alabama

Chairman Walter Tatum called the meeting to order at 1:10 p.m. The following members and others were present:

Members

Terry Cody, TPWD, Rockport, TX
Jim Hanifen, LDWF, Baton Rouge, LA
Joe Kimmel, FDNR, St. Petersburg, FL
Joanne Shultz, NMFS, Pascagoula, MS
Walter Tatum, ADCNR, Gulf Shores, AL
Richard Waller, GCRL, Ocean Springs, MS

Staff

David Donaldson, SEAMAP Coordinator
Cheryl Noble, Staff Assistant

Others

Richard Applegate, USFWS, San Marcos, TX
Jim Duffy, ADCNR, Gulf Shores, AL
Steve Heath, ADCNR, Dauphin Island, AL
Alan Huff, FDNR, St. Petersburg, FL
James Jones, MS/AL Sea Grant, Ocean Springs, MS
John Merriner, NMFS, Beaufort, NC
Scott Nichols, NMFS, Pascagoula, MS
David Pritchard, NMFS, St. Petersburg, FL
Ken Savastano, NMFS, Stennis Space Center
Mark Van Hoose, ADCNR, Dauphin Island, AL

Adoption of Agenda

The agenda was approved with the following additions:
* Discussion of allocation of additional monies for FY1993
* Discussion of next Joint Meeting

Approval of Minutes

The minutes for the meeting held on August 12 and 13, 1992 in Savannah, Georgia were approved with minor editorial changes.

Administrative Report

D. Donaldson reported the Fall Ichthoplankton survey was conducted from Sept. 8-Oct 2, 1992. He stated NMFS, Florida, Alabama, Mississippi and Louisiana participated in the survey. He reported the goal of the survey is to assess the distribution and abundance of king mackerel and red snapper eggs in the Gulf of Mexico. He reported the Fall Shrimp/Groundfish Survey would be beginning later this week and would continue into December. He stated vessels from NMFS, Alabama, Mississippi, Louisiana and Texas would participate. He reported the 1990 Atlas is currently being processed and all data has

been received. He noted that preliminary editing should start later this month. He distributed the TCC Report which outlines the activities for FY92 of the SEAMAP-Gulf and stated he is waiting on information from South Atlantic and Caribbean components for the Joint Annual Report. He reported he received information from Anne Seiler concerning the next Joint meeting and from the costs projections, it would not be feasible to have the meeting in the Caribbean. He recommended that the meeting be held in St. Petersburg, Florida.

Trap/Video and Acoustic Survey Presentation

J. Shultz reported she presented information concerning the trap/video survey at the MEXUS-Gulf meeting held in early October. She stated reef fish habitat pose a variety of problems for fishery managers due to the biological diversity and complexity of assemblages of reefs as well as the diversity and complexity of their habitat. She outlined the reef fish assessment requirements such as distinguishing reef habitat from non-reef habitat, use of a non-destructive methodology, large enough sample size to provide statistical reliability and provide wide areal coverage. She reported that traditional sampling methods are either impractical or do not collect the necessary information. She remarked the trap/video methodology does provide the needed information such as observing enough fish at a station for statistical reliability, making stations brief enough for broad-scale surveys and is a non-destructive and non-selective methodology. She stated the first SEAMAP Gulf-wide Reef Fish Survey was conducted and NMFS, Alabama and Mississippi participated. She stated there is a manual reef fish assessment methodology for SEAMAP surveys for hard bottoms which represents state-of-the-art synthesis of efforts to sample reef fish with video technology. She stated NMFS has developed a pictorial guide to the groupers in the Western Northern Gulf which is useful in identification of groupers on video tapes. She stated the survey area covered from Brownsville, Texas to the Dry Tortugas, Florida and sites were randomly selected. She reported that NMFS sampled 146 sites during the 1992 survey. She noted that at sites off Florida, NMFS used a hydroacoustic methodology as well as the trap/video system. She mentioned the video tapes from the survey are in the process of being analyzed and played some of the best tapes for the subcommittee. She stated that fish counts from the video records could provide a relative index of reef fish abundance. She stated there are several difficulties with the trap/video technique such as in the area sampled, the volume of water is undefined or variable, inability to estimate the fraction of reef not viewed and the attractive nature of the trap. She reported NMFS also applied acoustical mapping of reef sampling sites during the survey. She stated the results suggest that a combination of trap/video and hydroacoustic techniques may provide the best fisheries-independent estimates of reef fish abundance. She outlined the general components of the hydroacoustic system (FAS) and stated the gear provides relative fish density, absolute fish density, fish size and fish abundance. She stated the objectives of the acoustic technique was to determine the vertical distribution of target species over reef sites, measure target strengths in situ and estimate density of reef fish. She reviewed the data tables of the hydroacoustic technique. She presented a table which displayed the fish density at sampling sites by FAS, the video system and actual number of fish caught in trap. She stated there is not very much consistency between techniques and there is much work to be done before the numbers can be used to estimate reef fish abundance and all the information is still very preliminary. J. Shultz stated the recommendation is to pursue a combination of the trap/video and hydroacoustic techniques for quantitative measure of fish abundance. The subcommittee expressed some deficiencies with these techniques but stated that they are the best methods available.

R. Waller mentioned that some attempts have been made to address the problems encountered due to water clarity and identification and classification of fish and although the first attempts were not successful, more tries need to be attempted. J. Kimmel reported the state of Florida is attempting to address some of these problems.

S. Heath mentioned the data sheet for the collection of reef fish information contained measurements of fork, total and standard length. He wondered if it is necessary to collect standard length

since there is a high degree of error in obtaining this measure. R. Waller stated that total length is the least accurate measurement of the fish. After some discussion, the subcommittee decided to continue to collect all three measurements to the best of one's ability. W. Tatum asked the subcommittee to test the accuracy of standard length during their state's SEAMAP cruises.

Discussion of Consistency of Environmental Data Collection

S. Heath stated that environmental data such as water color, sea state, percent cloud cover, cloud type and turbidity can be subjective and thus not accurate. He stated that this data is being entered into the SEAMAP data base and he believes this can cause problems in the future. He wanted to know if there were more accurate means of collecting this data and if it cannot be collected accurately, should it be collected at all. W. Tatum stated a major problem with the collection of environmental data is that there is not much consistency in the way it is collected and the Environmental Work Group needs to meet to discuss these problems. S. Heath stated that when the Environmental Work Group established the sampling protocols, there was not an opportunity for feedback concerning these protocols. He stated the protocol was followed by each state as closely as possible depending on the types of equipment. R. Waller stated it was envisioned that the environmental data would eventually be collected by the appropriate equipment. After some discussion, W. Tatum suggested that the Environmental Work Group and the SEAMAP subcommittee meet the day before the GSMFC Annual Spring Meeting. D. Donaldson stated he would schedule this meeting to discuss environmental data collection issues.

Discussion of Comparative Tow Survey

D. Donaldson reported that Butch Pellegrin was not able to attend this meeting and he distributed some information concerning standardization of catch for different vessels for the subcommittee's review. J. Shultz stated there was a disagreement concerning the model being used to determine the number of tows necessary to calculate a calibration factor. J. Hanifen stated the subcommittee needs to look at the NMFS and state dataset to define the assemblages which need to be examined. He stated the basic assumption the subcommittee is attempting to prove is that the gear is the same regardless of the platform being used. J. Shultz stated NMFS will continue to work on selecting a model to provide the necessary information.

Work Group Reports

Data Management

K. Savastano distributed and reviewed the SEAMAP Data Management Report (attached). Items noted included:

- * data entry, edit and verification of SEAMAP data is continuing. Four cruises from 1989 are currently being processed through version 2.0 and once complete, all 1989 data will have been processed through the latest SEAMAP version. All of the 1990 and 1991 cruises, with the exception of two 1991 surveys, have been processed. In addition to the South Carolina cruise 51-921, several 1992 cruises are currently being processed.
- * processing of the data for the 1990 SEAMAP Atlas has been completed.
- * 121 of 125 requests for data have been completed and work is being performed on the remaining requests. Two requests have been filled since the August meeting - Peter Gonzales (Texas shrimp) and Dennis Lavoie (Naval Research Laboratory).

- * An update to the SEAMAP version 2.02 software was sent to users. Several new data sheets have been developed for the SEAMAP Reef Fish Survey and sent out for review and comments. The SEAMAP On-line data base contains 89 cruises with a total of 669,406 records.

Shrimp/Groundfish

S. Heath reported the Summer Shrimp/Groundfish Survey was conducted and there were no major problems with the collection of the data. He noted that several comparative tows were conducted in conjunction with the survey. He reported the Fall Shrimp/Groundfish Survey is underway and several vessels are already collecting information.

Other Business

* W. Tatum asked for direction from the subcommittee on how to proceed if the additional \$20,000 for the SEAMAP program comes through for FY1993. He outlined the actions taken by the Gulf-SEAMAP subcommittee and Joint committee at the August meeting pertaining to additional funding. J. Hanifen moved that the Gulf chairman be directed to negotiate a proportional split among the three components for any additional money and the Gulf's portion be given to the Commission to support necessary subcommittee and work group meetings such as a Joint SEAMAP meeting, environmental and reef fish work groups meetings and publication of an additional Atlas.

W. Tatum stated that in the event that the joint meeting cannot be held in the St. Thomas, Virgin Islands, the subcommittee concurred that the meeting will be held in St. Petersburg, Florida, as agreed at during the last Joint meeting.

Election of Officers

T. Cody was chairman of the nominating committee and he stated the committee submitted Walter Tatum and Joanne Shultz as candidates for chairman and Richard Waller as vice chairman. After a secret ballot, Walter Tatum was reelected chairman and Richard Waller was reelected vice chairman.

There being no further business, the meeting was adjourned at 4:50 p.m.

**SEAMAP SUBCOMMITTEE
MINUTES
Tuesday, March 16, 1993
Palm Beach, Florida**

Chairman Walter Tatum called the meeting to order at 1:10 p.m. The following members and others were present:

Members

Terry Cody, TPWD, Rockport, TX
Jim Hanifen, LDWF, Baton Rouge, LA
Joe Kimmel, FDNR, St. Petersburg, FL
Joanne Shultz, NMFS, Pascagoula, MS
Walter Tatum, ADCNR, Gulf Shores, AL
Richard Waller, GCRL, Ocean Springs, MS

Staff

David Donaldson, SEAMAP Coordinator
Cheryl Noble, Staff Assistant

Others

Warren Stuntz, NMFS, Pascagoula, MS
Steve Heath, ADCNR, Dauphin Island, AL
Scott Nichols, NMFS, Pascagoula, MS
Tom Wagner, TPWD, Port O'Connor, TX
Harriet Perry, GCRL, Ocean Springs, MS
Jim Clugston, USFWS, Gainesville, FL

Adoption of Agenda

The agenda was approved as written.

Approval of Minutes

The minutes for the meeting held on October 13, 1992 in Mobile, Alabama were approved with minor editorial changes.

Administrative Report

D. Donaldson reported the Spring Ichthyoplankton Survey is scheduled to begin April 1993 and conclude in the end of May. Florida and NMFS will participate in this survey. The goal of the cruise is to assess the distribution and abundance of bluefin tuna eggs in the Gulf of Mexico. The second Spring Reef Fish Survey will begin in May 1993 and will continue into July. Alabama, Mississippi, Florida and NMFS will participate in this survey. The goal of the survey is to assess relative abundance of reef fish in Gulf of Mexico.

He reported the 1990 Atlas has been published and copies have been distributed to the Subcommittee. Editing on the 1991 Atlas has begun and the Subcommittee should receive a copy for review in late April or early May and the document should be ready for the printer by late May or early June. The Joint Annual Report has been completed and copies were distributed to the Subcommittee.

Update of SEAMAP Plankton Activities

J. Shultz reviewed the Polish Sorting and Identification Center (PSIC) information. She presented a progress report sent by PSIC which showed approximately 600 samples from 1990 and 1991 which have been sorted and the Pascagoula Laboratory had received shipments of sorted samples in December 1992 and January 1993 from Poland. All in all, the PSIC has provided the necessary samples and is continuing to perform satisfactorily.

She reported the Plankton Work Group is working with Ken Savastano to improve the SEAMAP Ichthyoplankton sample module in the Data Management System (DMS) and that Jack Gartner, the SEAMAP Archiving Center (SAC) curator at FMRI, has hired two full-time assistants for data entry at SAC. The assistants will begin cataloging the backlog of samples currently at SAC and should have all the backlogged samples accessioned by late April. In addition, the NMFS has purchased new vials and labels for plankton samples sent to Poland at a cost of approximately \$3,000.

J. Shultz reported that a SEAMAP winter plankton survey, in conjunction with a winter cetacean survey, was conducted by the NMFS in 1993. The survey began on January 5 and continued until February 11, 1993. During the cruise, 112 SEAMAP and 9 tucker trawl stations were sampled throughout the Gulf of Mexico.

J. Shultz noted that the PSIC is currently sending the sorted SEAMAP samples to the Pascagoula Laboratory. Although sending the samples to Pascagoula makes it easier to track the samples, it causes a higher workload on an already stressed staff. Currently, J. Shultz receives the samples and then sends them to SAC. She sends the bluefin tuna samples to Bill Richards in Miami. After some discussion, the subcommittee directed all of the players involved in this issue to discuss this topic and report to the subcommittee at the next meeting.

R. Waller wanted to know which person dealt with the ichthyoplankton field sheets. Presently, the states are not able to enter the ichthyoplankton data collected and R. Waller was curious about how the data will be entered into the system. J. Shultz stated that the NMFS-Pascagoula is currently entering that data and will enter the states' data, however, once the ichthyoplankton module for the DMS is completed, the states should enter their own data.

Discussion of Comparative Tow Survey

J. Shultz stated that the objective was to estimate sample size in order to detect significant differences of catch rates of similar nets towed by different vessels. The data set used by NMFS to estimate the number of tows needed was 30 paired tows taken by the OREGON II and the R/V PELICAN. First, single consistent model, to relate catch of two vessels, was chosen because it best reflected the data base. She presented the most frequently caught species ranked by both frequency caught and numbers caught by the two vessels. Linear regression was used to relate the catches of one vessel with the other. The data were calculated using both an arithmetic and log-transformed scale. The data were plotted and the fit of the line was examined. She presented some of the plots as examples. Sample sizes were then computed for 20 taxa at various levels of error about the slope. It was suggested that level of ± 0.2 be used for this exercise. She stated that B. Pellegrin did not have much confidence in the numbers due to the high variability and if more samples are collected, the sample sizes to detect differences could change. It was noted that one of the assumptions which this model makes is that the species are evenly distributed and that assumption is not necessarily true. R. Lukens stated the proposal calls for a proxy state vessel (probably the R/V TOMMY MUNRO) to tow with the OREGON II to arrive at a calibration figure. He asked if this methodology would answer the questions the subcommittee was asking and enable him to defend spending the funds for this project. This methodology should provide a number of tows needed to detect differences in catch rates.

* After some discussion, the subcommittee decided that some of the other comparative tow data between other state and federal vessels needed to be analyzed and presented to the subcommittee. The analysis would provide the subcommittee with more information to base decisions on and give them a better idea of how many more tows need to be completed. J. Hanifen moved that the R/V TOMMY MUNRO and the A.E. VERRILL, and the R/V TOMMY MUNRO and the OREGON II comparative tow data be analyzed, utilizing the same methodology used for the data presented to the meeting. The motion passed unanimously. D. Donaldson noted that a Shrimp/Groundfish Work Group meeting is scheduled for late April and there is a possibility of utilizing that meeting to discuss this issue. He stated he would be in contact with the subcommittee concerning that possibility.

Status of FY93 Funds

S. Nichols reported that there is really no new information concerning the status of the funds. Due to the new administration, budget deliberations and other activities have been delayed and there is no way of estimating when some information will be available. He stated that as soon as he hears something, he will contact the subcommittee.

Work Group Reports

Environmental

W. Stuntz reported that the Environmental Work Group met on March 15, 1993 to discuss some problems with the collection of environmental data. The main topics discussed were rationale for collection of some of the environmental data. The group reviewed the environmental data form and discussed the usefulness of each parameter. Some of the parameters, such as cloud type and water color, were deemed unnecessary and may be removed from the data sheet. It was decided that others, such as chlorophyll and precipitation, needed a better description in the SEAMAP Shipboard Manual of how to collect the information correctly. There was a brief discussion concerning providing the states with CTD's and the possibility of conducting an environmental data collection workshop. The workshop would provide useful information to field personnel, as well as others, in advances in collection techniques and equipment.

* R. Waller asked if the field personnel should continue to collect the environmental parameters, such as sea state, wind speed, etc., which tend to be subjective in nature. W. Stuntz noted that personnel can become proficient at collecting some of these data. W. Stuntz submitted the report for approval of the subcommittee. J. Hanifen moved to accept the environmental work group report. The motion passed unanimously.

* W. Tatum noted that the work group had not met very often because there was no indication of a need for a meeting. The reason for this is that there was no feedback from various work group leaders concerning problems encountered in the field. The work group considered expanding the environmental work group to include the other work group leaders to combat this problem. J. Kimmel made a motion to expand the environmental work group to include the other SEAMAP work group leaders. W. Stuntz pointed out that with the expansion, the environmental work group would be essentially a duplication of the data management work group. There was some discussion concerning distributing a questionnaire which would enable personnel to respond to the work group about problems with environmental data collection. J. Hanifen made a substitute motion to expand the environmental work group to include the SEAMAP Shrimp/Groundfish, Plankton and Reef Fish work group leaders. After some discussion, the motion passed unanimously.

* In an effort to set up a feedback mechanism, the subcommittee believed that it would be useful if each work group leader would present a report to the subcommittee on a yearly basis. R. Waller moved that each work group leader will present a report to the subcommittee at least every October meeting. The motion passed unanimously.

Discussion of Advances in Invertebrate Taxonomy

H. Perry reported that a field guide has been developed to provide easy identification of invertebrates. The manuals are pictorial guides which provide color photographs of the organisms. Based on distribution data from previous cruises, updated distribution maps will be also provided. She stated that she has spent several cruises gathering some base-line data to determine what actually is caught and is providing guides for the most frequently caught organisms. D. Donaldson mentioned that it might be possible for the GSMFC to provide copies to the subcommittee for their use. He stated he would look into this possibility. H. Perry noted that she might be able to provide a copy of the guide at the next SEAMAP meeting.

Discussion of Joint Meeting Location

D. Donaldson noted that the first or second week of August was a good time frame for the meeting and he will be in contact with the South Atlantic and Caribbean components to discuss the time. He stated that due to lack of additional funds, it does not look promising for conducting a meeting in St. Thomas, Virgin Islands. He mentioned that Atlanta, Georgia would be a good site for the Joint meeting since it is easy to reach the hotel and easy to move around the city. The subcommittee agreed that Atlanta would be a good location and D. Donaldson stated that he would be in contact concerning the meeting.

Other Business

J. Kimmel stated that Florida will be participating in the Spring Reef Fish Survey this year. He has already conducted one trip to the Dry Tortugas and shot some video and also counted fish while the camera was working. The results show that his counts are higher than the video.

S. Heath noted that the TED regulations have changed and he wanted to make sure the state vessels are still exempt from using a TED. S. Nichols believed the vessels were still exempt and he would look into the issue and get back to the subcommittee.

There being no further business, the meeting was adjourned at 5:00 p.m.

APPENDIX II

SEAMAP-GULF OF MEXICO

OPERATIONS PLAN

January 1, 1994 - December 31, 1994

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 mid-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, 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: 1990-1995* was produced in 1990 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* and *SEAMAP Operations 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: 1990-1995* 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 fifth SEAMAP-Gulf Annual Operations Plan describes planned activities and events for the period January 1, 1994 through December 31, 1994. 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: 1990-1995*.

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 degrees 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 surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom and water color, using the Forel-ule test.

Right bongo samples and neuston samples collected in 1994 from SEAMAP stations will be transshipped by the NMFS Pascagoula Laboratory to the Polish Sorting and Identification Center (PSIC) for sorting and identification, after which they will be returned to SEAMAP Archiving Center (SAC) at Florida Department of Environmental Protection 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 Gulf Coast Research Laboratory in Ocean Springs, Mississippi.

Spring Reef Fish Survey

The objectives of the survey are:

- (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 m² 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 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 1/2 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.

Louisiana Seasonal Day/Night Trawl Surveys

These surveys provide comparative information on the abundance and distribution of critical life stages of major Gulf species, especially shrimp, and associated environmental parameters.

Sampling will be conducted in March, July, October and December 1994. A stratified random station design with 48 planned locations will be sampled at day and night with 40-ft nets. Stations will be randomly selected. The July sampling will be conducted as part of the SEAMAP Summer Shrimp/Groundfish Survey.

All organisms are identified, weighed and measured. Plankton and environmental sampling are conducted at all stations. Processing of environmental data including bottom sediments and top and bottom chlorophylls will be done at Louisiana Department of Wildlife and Fisheries (LDWF). Plankton samples will be sorted for ichthyoplankton at the LDWF Plankton Laboratory. Specimens and data will be shipped to the SAC in St. Petersburg, Florida.

OPERATIONS

The following activities and events by participant comprise the SEAMAP-Gulf of Mexico operations schedule for the period January 1, 1994 to December 31, 1994:

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) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee
- (4) Plan and coordinate a pilot study for sampling reef fish in the Gulf of Mexico
- (5) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Louisiana Department of Wildlife and Fisheries

- (1) Seasonal trawl surveys: March, July, October and December (July in conjunction with Summer Shrimp/Groundfish Survey)
- (2) Plankton sampling in conjunction with trawl surveys
- (3) Plankton sample sorting

- (4) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee
- (5) Process sediment and chlorophyll samples
- (6) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

Mississippi Department of Wildlife, Fisheries and Parks - 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 Archiving Center operations
- (6) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee
- (7) Plan and coordinate a pilot study for sampling reef fish in the Gulf of Mexico
- (8) 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) Plankton sampling in conjunction with trawl surveys
- (5) Attend SEAMAP Subcommittee and work group meetings as scheduled and provide assistance to SEAMAP Subcommittee
- (6) Quarterly estuarine shrimp/groundfish sampling
- (7) Plan and coordinate a pilot study for sampling reef fish in the Gulf of Mexico
- (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) Plan and coordinate a pilot study for sampling reef fish in the Gulf of Mexico
- (6) Data inventory, entry, edit and transmit to mainframe all SEAMAP cruise information

National Marine Fisheries Service, Southeast Fisheries Science Center

- (1) Spring Reef Fish Survey: March-July, 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) Data Management System implementation and operations
- (8) Processing and transshipment of NMFS plankton samples to the PSIC
- (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 Data System, in accordance with procedures and protocols stated in the *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1990-1995*. User policies and procedures are also defined in this document.

The SAC 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 1990-1995*.

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

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 1994:

- (1) Spring meeting (in conjunction with the GSMFC Annual Spring Meeting): March;
- (2) Joint budget meeting (with SEAMAP-Caribbean and SEAMAP-South Atlantic): July/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: 1990-1995*.

Designated members for 1994 are:

Texas Parks and Wildlife Department:	Terry Cody
Louisiana Department of Wildlife and Fisheries:	Jim Hanifen
Gulf Coast Research Laboratory:	Richard Waller
Alabama Department of Conservation and Natural Resources:	Walter Tatum
Florida Department of Environmental Protection:	Joe Kimmel
National Marine Fisheries Service:	Joanne Shultz
Gulf of Mexico Fishery Management Council:	Steve Atran (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, at present, include:

ADULT FINFISH WORK GROUP

Billy Fuls Texas Parks and Wildlife Department	Joanne Shultz National Marine Fisheries Service Pascagoula Laboratory
Joe Kimmel Florida Department of Environmental Protection	Wayne Swingle Gulf of Mexico Fishery Management Council
Tom McIlwain Mississippi Department of Wildlife, Fisheries and Parks Gulf Coast Research Laboratory	James Warren Mississippi Department of Wildlife, Fisheries and Parks Gulf Coast Research Laboratory
John Roussel Louisiana Department of Wildlife and Fisheries	
Robert Shipp University of South Alabama	

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/Bottomfish Work Group

Warren Stuntz
National Marine Fisheries Service
Pascagoula Laboratory
Environmental Data Work Group

Thomas McIlwain
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory
Red Drum Work Group

Walter Tatum
Alabama Department of Conservation and Natural
Resources
Chairman, SEAMAP Subcommittee

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

ENVIRONMENTAL DATA WORK GROUP

Charles Eleuterius
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Thomas Leming
National Marine Fisheries Service
Pascagoula Laboratory

Ken Haddad
Florida Department of Environmental Protection

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Stevens Heath
Alabama Department of Conservation and Natural
Resources

Perry Thompson
National Marine Fisheries Service
Pascagoula Laboratory

Michelle Kasprzak
Louisiana Department of Wildlife and Fisheries

PLANKTON WORK GROUP

Joanne Shultz, Leader
National Marine Fisheries Service
Pascagoula Laboratory

Churchill Grimes
National Marine Fisheries Service
Panama City Laboratory

Mark Leiby
Florida Department of Environmental Protection

Alonzo Hamilton
National Marine Fisheries Service
Pascagoula Laboratory

Harriet Perry
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Rick Shaw
Louisiana State University

Don Hoss
National Marine Fisheries Service
Beaufort Laboratory

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

RED DRUM WORK GROUP

Thomas McIlwain, Leader
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Richard Condrey
Louisiana State University

Joseph Shepard
Louisiana Department of Wildlife and Fisheries

Phil Goodyear
National Marine Fisheries Service
Miami Laboratory

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Larry McEachron
Texas Parks and Wildlife Department

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

Mike Murphy
Florida Department of Environmental Protection

REEF FISH WORK GROUP

Billy Fuls
Texas Parks and Wildlife Department

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

Chris Gledhill
National Marine Fisheries Service
Pascagoula Laboratory

Richard Waller
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research Laboratory

Richard Kasprzak
Louisiana Department of Wildlife and Fisheries

Joe Kimmel
Florida Department of Environmental Protection

SHRIMP/GROUNDFISH WORK GROUP

Stevens Heath, Leader
Alabama Department of Conservation and Natural Resources

Billy Fuls
Texas Parks and Wildlife Department

Butch Pellegrin
National Marine Fisheries Service
Pascagoula Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Nate Sanders
National Marine Fisheries Service
Pascagoula Laboratory

Terry McBee
Mississippi Department of Wildlife, Fisheries and Parks
Gulf Coast Research 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: 1990-1995*.

SEAMAP-Gulf Coordinator

The Coordinator's primary responsibility is to assist the Subcommittee in ensuring that the SEAMAP-Gulf system functions efficiently and satisfies user requirements. The *Southeast Area Monitoring and Assessment Program (SEAMAP) Management Plan: 1990-1995*, 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: 1990-1995*.

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.

