SEAMAP
ANNUAL REPORT

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

OCTOBER 1, 1994 - SEPTEMBER 30, 1995

SEAMAP SUBCOMMITTEE
Walter Tatum, Chairman

September 30, 1995

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Walter M. Tatum, Chairman

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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 1985-1995 (October 1 through September 30). State and Gulf States Marine Fisheries Commission (GSMFC) funding allocations for FY1985-FY1995 were handled through State/Federal cooperative agreements, administered by SERO and the Southeast Fisheries Science Center (SEFSC), National Marine Fisheries Service (NMFS).

In FY1995, SEAMAP operations continued for the fourteenth 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 FY1995 activities included SEAMAP information services and program management.

This report is the twelfth 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 FY1995 and proposed SEAMAP activities for FY1996.

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

FY1995 SEAMAP RESOURCE SURVEYS

In FY1995, collection of resource survey information continued for the fourteenth 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 14 to November 20, 1994, from off Mobile, Alabama to the U.S.-Mexican border. Vessels sampled waters out to 60 fm, covering a total of 373 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 242 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 23 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.

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 52 stations was sampled with bongo and/or neuston nets, as encountered along cruise tracks. NMFS completed 48 ichthyoplankton stations and Louisiana completed 4 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.

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 four segments: September and November/December 1994 and March and June 1995. 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 from 89°30' W. to 91°30' W. longitude.

Spring Plankton Survey

For the thirteenth year, plankton samples were collected during the spring in the northern Gulf of Mexico. The NOAA Ship CHAPMAN 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 14 to June 10, 1995. A total of 142 stations was sampled. The CHAPMAN sampled 127 stations and the R/V SUNCOASTER sampled 15 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) was collected at all stations.

Right bongo and neuston samples collected from SEAMAP stations will be transshipped to the PSIC. 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 fourth Reef Fish Survey began on June 6 and will continue into late fall 1995. Vessels from NMFS, Texas, Mississippi, and Alabama sample inshore and offshore waters, in addition to plankton and environmental sampling. To date, approximately 190 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:

(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) 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 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 1995, 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 1995 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 1 to July 19, 1995. 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 323 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 12.1 lb/hr of 70-count shrimp. White shrimp catches east of the River were all less than 4.0 lb/hr. The largest pink shrimp catch rate east of the River was 27.0 lb/hr of 39-count shrimp taken in 15 fm of water off the Mobile Bay. Finfish catch rates east of the River were low, with the largest catch of 668 lb/hr with longspine porgy predominating.

In July's samples west of the river (Louisiana) brown shrimp catches were moderate with the largest catch rate of 36.1 lb/hr of 12-count shrimp occurring off Vermilion Bay in 14 fm. White shrimp catches were low, with a maximum catch rate of 19.0 lb/hr of 18-count shrimp taken in 15 fm east of Vermilion Bay. Catches of pink shrimp were very low off the Louisiana coast with a maximum catch rate of 6.6 lb/hr of 24-count shrimp. Finfish catch rates were also low with the largest catch rate of 1,116 lb/hr taken on July 18 with catfish predominating.

High catches of brown shrimp were made off Texas from June 1 to July 9. The largest catch rate occurred June 24 in waters off Brownsville, Texas in 18 fm (142.2 lb/hr of 68-count shrimp). White shrimp catches off Texas were low with the largest catch, 27.4 lb/hr of 18-count

shrimp, taken off Sabine in 5 fm. Catch rates for pink shrimp were also low off Texas, though the largest catch was 42.6 lb/hr of 47-count shrimp off the lower Laguna Madre in 8 fm. Finfish catch rates were moderate in Texas inshore and offshore waters. The largest catch of finfish was 802 lb/hr in 5 fm off Sabine with 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 1986-1994 and in the current year covered Gulf waters from Florida Bay to Brownsville, Texas. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS surveyed from September 6 to September 29, 1995. Stations were located along a 30-minute latitude/longitude grid from inshore waters to the shelf edge.

The NOAA Ship CHAPMAN sampled 110 stations from Tampa Bay, Florida to Brownsville, Texas at depths from 5 to 100 fm. The R/V VERRILL sampled 9 stations at the mouth and outside Mobile Bay. The R/V TOMMY MUNRO sampled 49 stations south of Mississippi Sound along a 30-minute grid. The R/V PELICAN sampled 7 stations in Louisiana territorial waters. And Florida's R/V SUNCOASTER sampled 25 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, 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 SEAMAP Archiving Center.

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 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 FY1995, 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 (SIS), 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 SIS, 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 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 1982-1994 have been entered into the system and data from 1995 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 162 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, 158 requests have been completed and work is being performed on those remaining.

Requested SEAMAP data were used for a multitude of purposes in FY1995:

- 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 1993 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) modular implementation plan which includes costs and schedule.

Work was completed during FY1990 on the new distributed SEAMAP DMS. New modules including those for data entry, edit, upload, data query and download have been completed. 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 (Minerals Management Service, U.S. Army Corps of Engineers, universities, 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 SIS in FY1995 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 1-8.

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR BDO	GEAR TYPE	MIN FISH	TOWS	SHRIMP	FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS
1	TN01	6/25/95	26-26.5	97-13.2	05	5	28.5	28.2		3.8	ST	10	1	1.1	7.9	0	0	0	0	67	7

SPECIES:PINK WEIGHT: 1.102 NUMBER: 32 MODE:118/ 3
LEN(MM)/FREQ. 90/ 2 100/ 3 110/ 11 120/ 7 130/ 6 140/ 2 150/ 1

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR BDO	GEAR TYPE	MIN FISH	TOWS	SHRIMP	FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS
1	TD16	6/25/95	26-57.4	97-03.3	11	20	28.2	21.5		4.2	ST	40	1	.7	19.4	0	0	0	0	67	14

SPECIES:BROWN WEIGHT: .661 NUMBER: 20 MODE:111/ 3
LEN(MM)/FREQ. 90/ 4 100/ 2 110/ 7 120/ 4 130/ 3

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR BDO	GEAR TYPE	MIN FISH	TOWS	SHRIMP	FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS
1	TN22	6/25/95	26-51.6	96-38.6	21	45	28.9	19.2		4.2	ST	59	1	6.4	119.0	0	0	0	0	93	19

SPECIES:BROWN WEIGHT: 6.393 NUMBER: 60 MODE:160/ 5
LEN(MM)/FREQ. 110/ 1 120/ 3 130/ 3 140/ 2 150/ 2 160/ 13 170/ 8 180/ 11 190/ 6

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR BDO	GEAR TYPE	MIN FISH	TOWS	SHRIMP	FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS
1	TN15	6/26/95	26-46.2	97-02.1	00	19	28.9	21.2		4.4	ST	28	1	17.0	15.0	0	0	0	0	116	17

SPECIES:BROWN WEIGHT: 16.975 NUMBER: 481 MODE: 0/ 0
LEN(MM)/FREQ. 80/ 4 90/ 12 100/ 38 110/ 28 120/ 38 130/ 24 140/ 32 150/ 18 160/ 5

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR BDO	GEAR TYPE	MIN FISH	TOWS	SHRIMP	FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS
1	TN13	6/26/95	26-57.4	97-08.1	02	17	28.5	21.8		5.0	ST	52	1	22.7	15.0	0	0	1	0	116	23

SPECIES:BROWN WEIGHT: 22.707 NUMBER: 1030 MODE: 0/ 0
LEN(MM)/FREQ. 80/ 3 90/ 23 100/ 32 110/ 34 120/ 52 130/ 20 140/ 17 150/ 13 160/ 6

PLAT	STATION	DATE	LAT	LONG	TIME	DEP FMS	TEMPS,C SUR	TEMPS,C BOT	CHLOR MG/M3	GEAR BDO	GEAR TYPE	MIN FISH	TOWS	SHRIMP	FINFISH	LBS CRK	LBS SPT	LBS TRT	LBS CAT	LBS OTHER	LBS
1	TN16	6/26/95	27-06.6	97-02.6	04	20	28.3	21.7		5.5	ST	36	1	20.1	18.3	0	0	4	0	116	20

SPECIES:BROWN WEIGHT: 20.062 NUMBER: 772 MODE: 0/ 0
LEN(MM)/FREQ. 70/ 1 80/ 4 90/ 9 100/ 37 110/ 45 120/ 41 130/ 30 140/ 10 150/ 15

Figure 1. Real-Time Data Listings, 1995 SEAMAP Summer Shrimp/Groundfish Survey

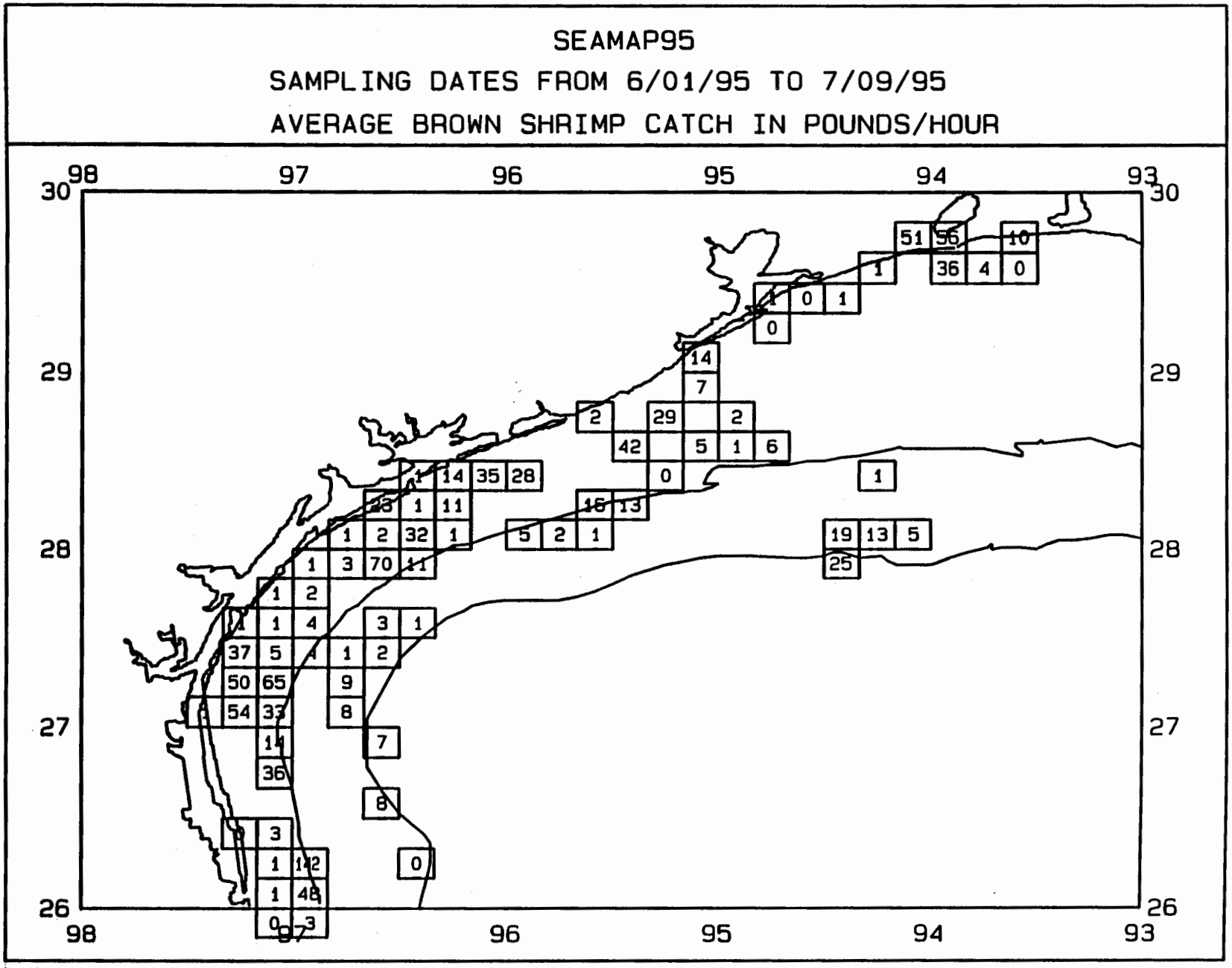

Figure 2. Real-Time Data Catch Plots, 1995

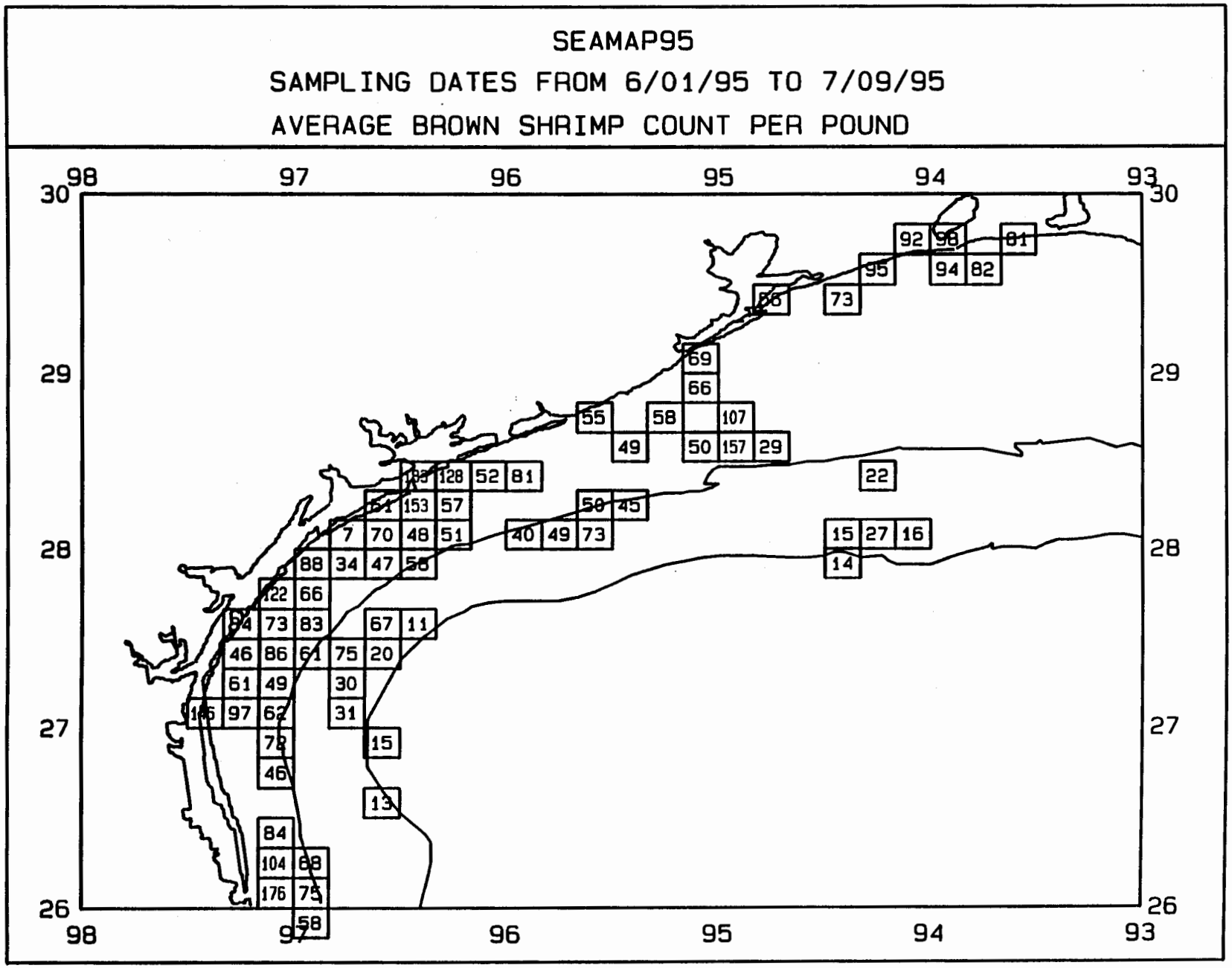

Figure 3. Real-Time Data Catch Plots, 1995

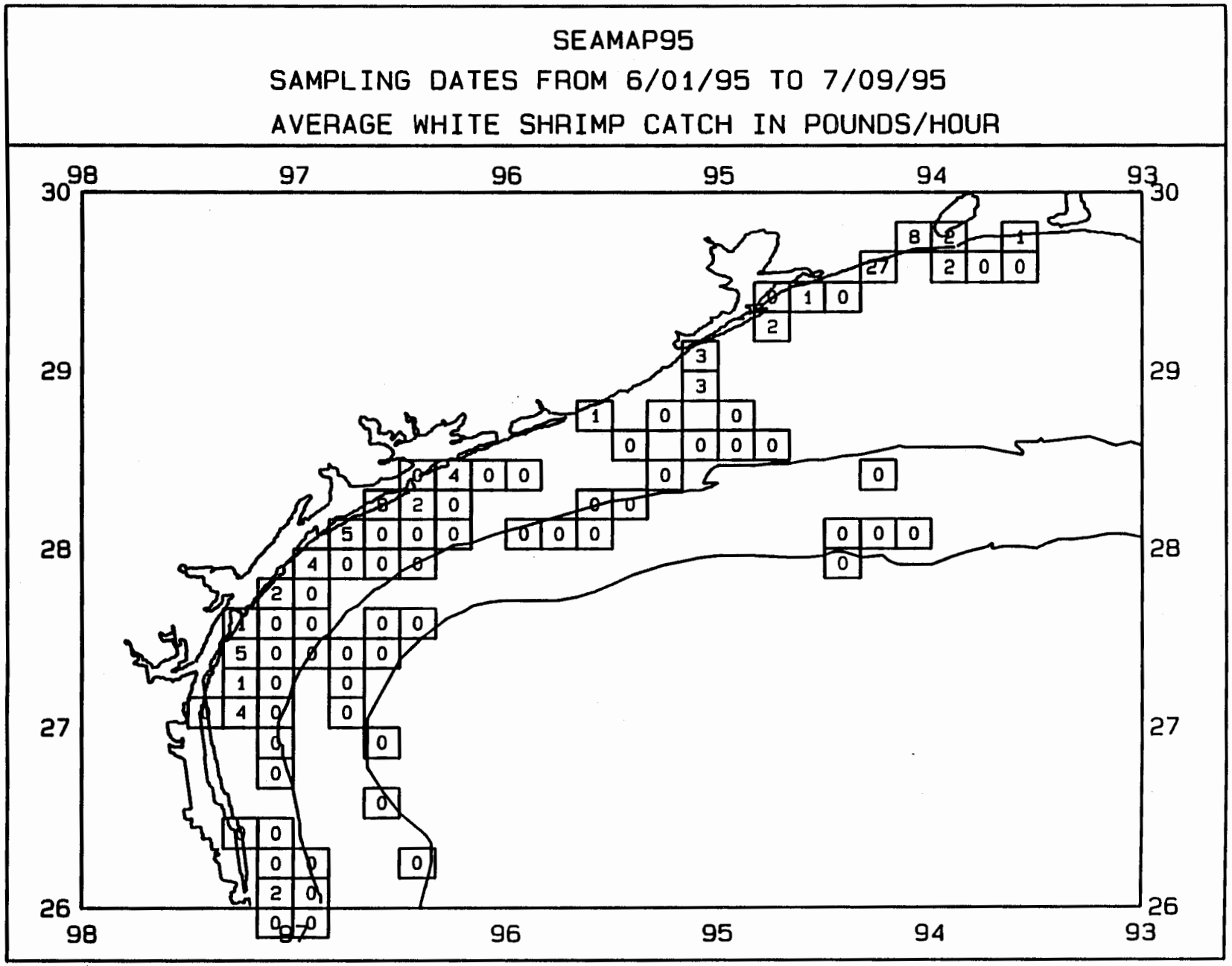

Figure 4. Real-Time Data Catch Plots, 1995

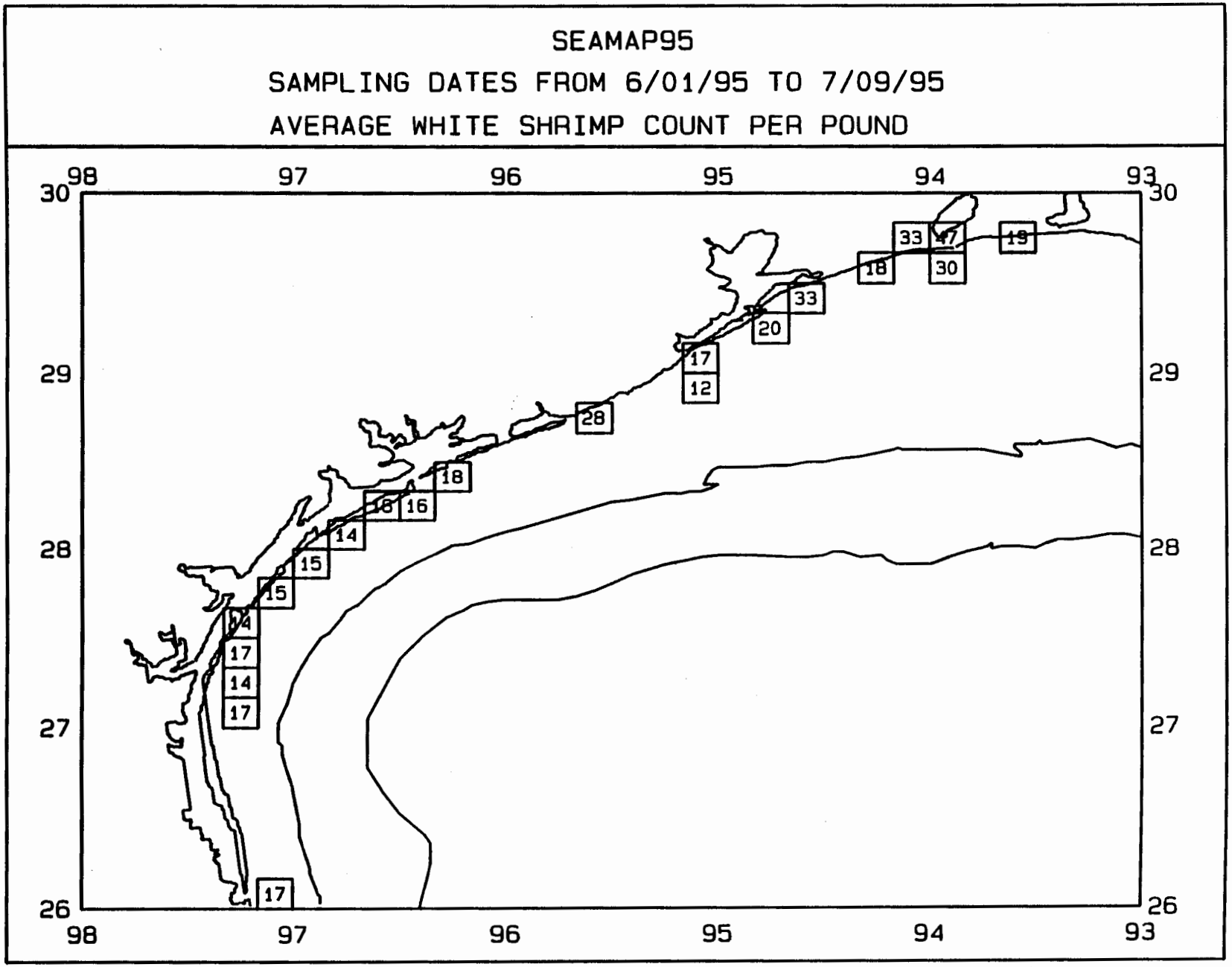

Figure 5. Real-Time Data Catch Plots, 1995

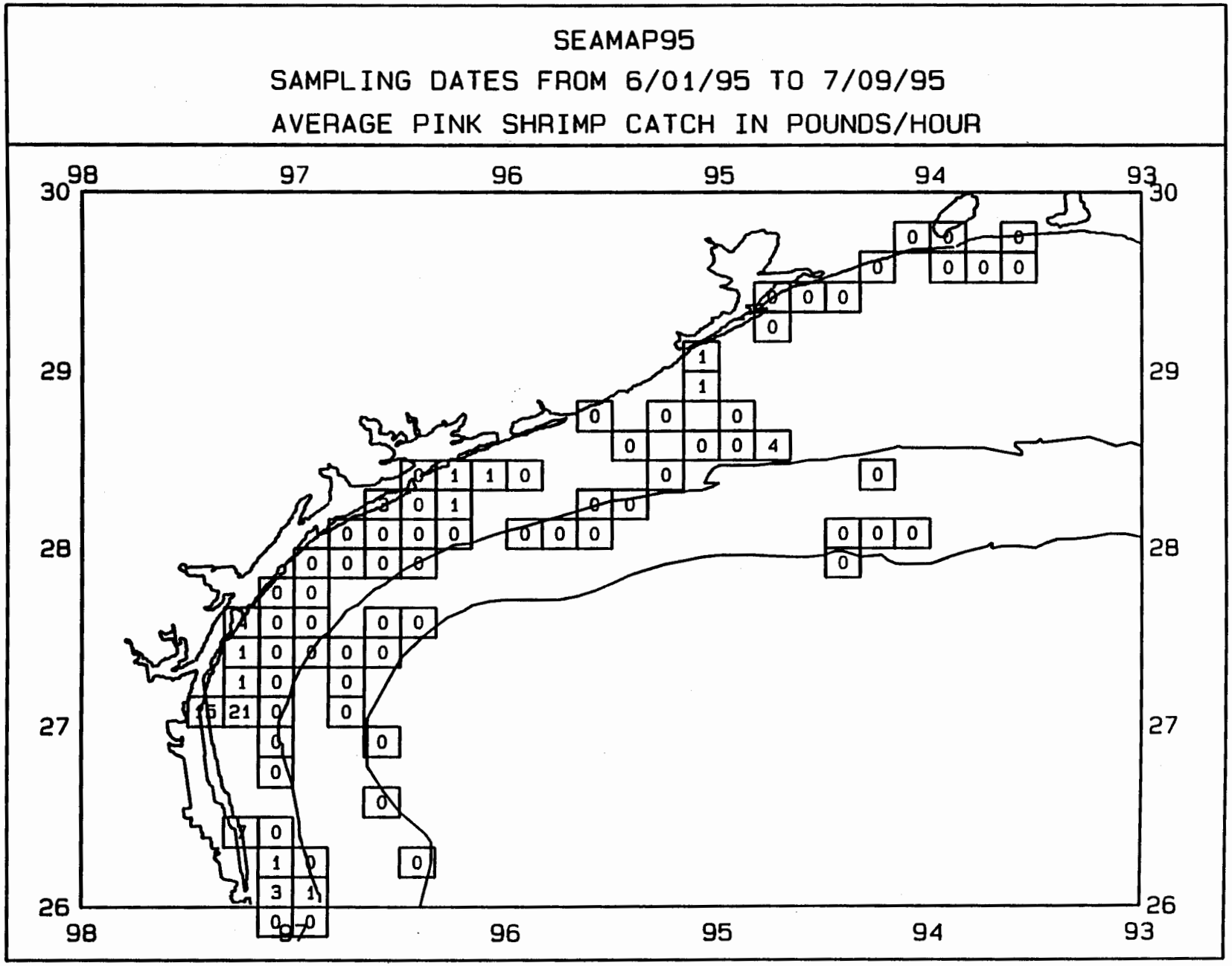

Figure 6. Real-Time Data Catch Plots, 1995

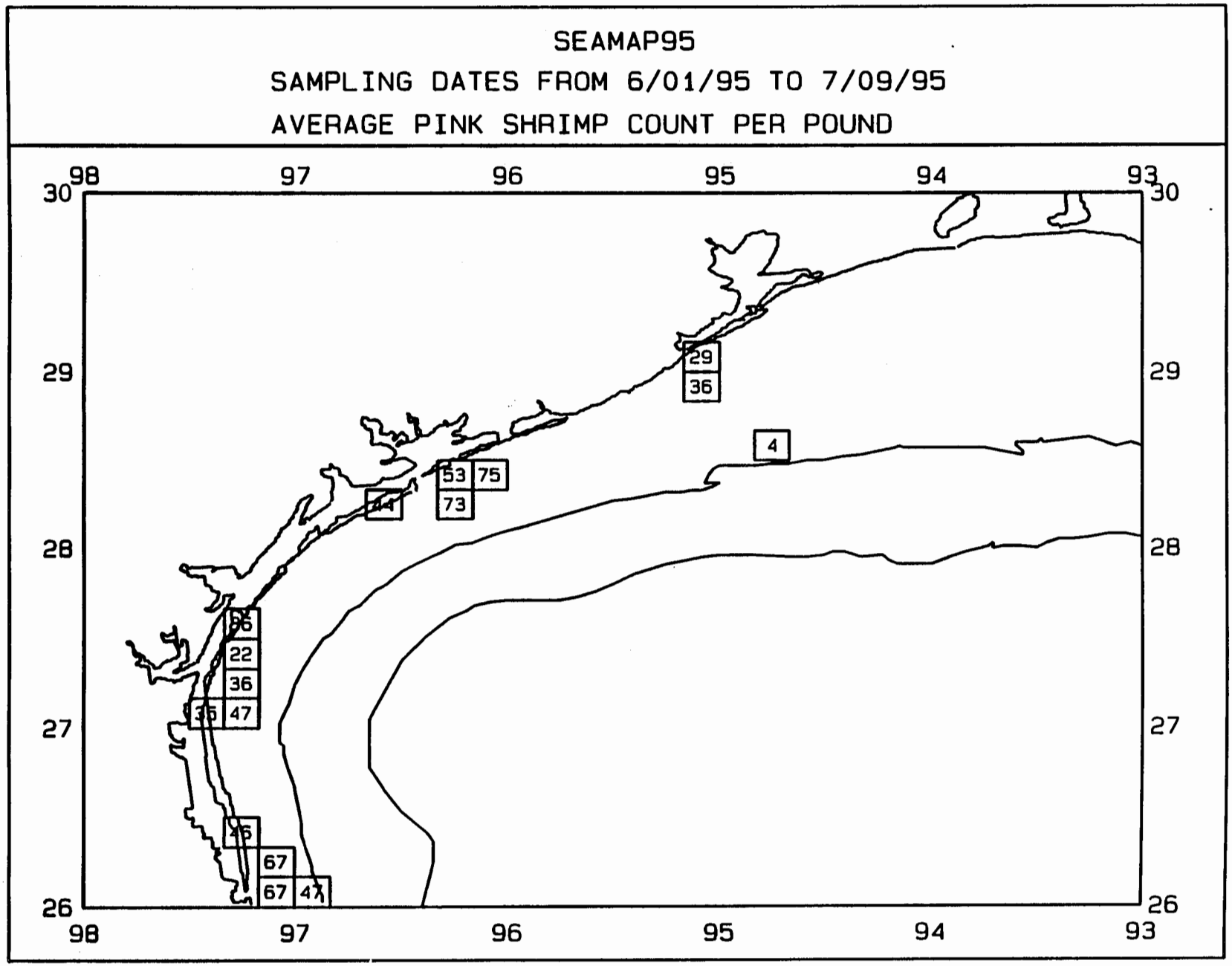

Figure 7. Real-Time Data Catch Plots, 1995

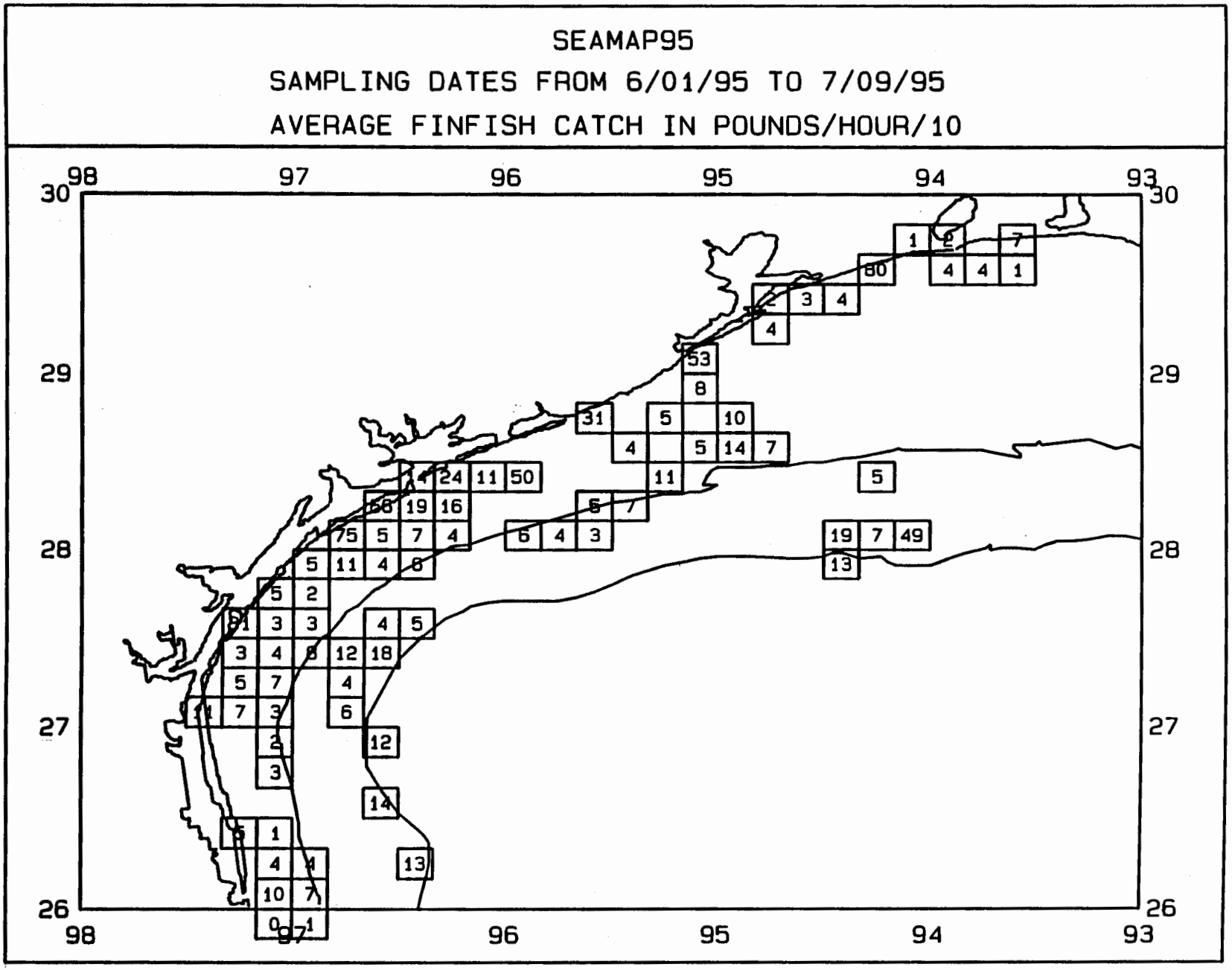

Figure 8. Real-Time Data Catch Plots, 1995

SEAMAP Archiving Center

Larval fish and fish egg samples sorted to the lowest taxa level possible by the PSIC are returned to the SEAMAP Archiving Center for archiving and loan to researchers. For FY1995, approximately 12,600 vials have been returned from the PSIC. Data entry for most of the returned sorted samples is 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. Seven such requests have been accommodated in the present fiscal year. Currently, the FDEP is in the process of renovating the existing building which houses the SEAMAP Archiving Center, allowing for expansion of the climate-controlled storage area. The SEAMAP Archiving Center personnel, in conjunction with other staff from FDEP, will be participating in the fall ichthyoplankton cruise. The cruise was conducted September 23-28, 1995.

SEAMAP Invertebrate Plankton Archiving Center

The SEAMAP Invertebrate Plankton Archiving Center (SIPAC) is in its eleventh year of operation. Ken Stuck of GCRL serves as SIPAC curator, and is assisted by one technician. The mission of the SIPAC is 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. The SIPAC provides unsorted plankton samples and data or specimens of larval invertebrates to qualified researchers upon request. SIPAC personnel also participate in SEAMAP cruises.

During FY1995, a total of 225 SEAMAP plankton samples were received and logged into the SIPAC database. The samples were obtained from various OREGON II, CHAPMAN, HERNAN CORTEZ II, SUNCOASTER, R/V BELLOWS, and TOMMY MUNRO cruises. A total of 428 neuston samples in the SIPAC collection that were collected during 1986 and 1987 have been transferred to the NMFS-Pascagoula for shipment to the PSIC. The number of samples currently cataloged in the SIPAC collections is 5,627. Samples currently on loan include 146 samples, from OREGON II cruises 187, 194, 199, CHAPMAN cruises 904, HERNAN CORTEZ II cruises 901 and 911, and SUNCOASTER cruise 921 to S. Turner, NMFS-Miami; and 7 samples from TOMMY MUNRO cruise 923 to B. Comyns, GCRL.

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 1/4 their original volume and placed into 100ml vials. When possible, the remaining 3/4 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 the NMFS-Pascagoula for reuse. To date, approximately 1,200 samples collected from 1982 - 1985 have been aliquoted and prepared for long-term storage. However, because of the recent transfer of a large number of neuston samples from the SIPAC collections to the NMFS-Pascagoula, and the relatively low number of new samples deposited in the collection over the last year, sufficient storage space is currently available and sample aliquoting has been temporally suspended.

During FY1995, 33 SEAMAP plankton samples collected during OREGON II cruises 185 and 190, 38 samples collected from Louisiana inshore waters, and 30 samples collected during cruise 902 by the HERNAN CORTEZ, were sorted for selected invertebrates following previously established protocols. A total of 436 lots of specimens were obtained from those samples. To date, the total number of SEAMAP samples sorted for invertebrates is 1,458 and the total number of lots obtained is 6,233.

During the next fiscal year, the SIPAC will continue to manage SEAMAP plankton collections and generate specimens and data on selected invertebrate species. A general inventory of sample holdings and verification of computer records will be conducted. Mary Tussey, the technician working for the SIPAC for the last 5 years resigned in July. Although maintenance and cataloging of unsorted samples continues, invertebrate sample sorting has been suspended until a suitable replacement is found. In addition, attempts are being made to find a graduate student to work with the collection of invertebrate specimens as part of a master's or doctoral thesis. The current level of SEAMAP funding and support of the SIPAC should be sufficient to support these activities during the next fiscal year.

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 Manager.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 1994 and March 1995, in conjunction with the Annual Fall and Spring Meetings of the GSMFC. All meetings included participation by various work group leaders, Coordinator, Data Manager, and the GSMFC Executive Director. In addition, to prepare for the discussion of the new SEAMAP Strategic and Management Plan, a subgroup consisting of the three components' chairmen and coordinators and the SEAMAP technical monitor met in Gulf Shores, Alabama on June 15, 1995. The group discussed what types of report(s) should be developed by the SEAMAP, the timeframe which the plan will cover, the review and approval process of the report(s) and possible future activities of the program. 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 1995 to discuss respective program needs and priorities for FY1996. 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 Environmental Work Group met March 7, 1995 to discuss the method for collection of chlorophyll and standardization and calibration of environmental gear, and to review the environmental section of the SEAMAP Operations Manual. The Red Drum Work Group met on April 6, 1995 (via conference call) to address the election of a new work group leader and discuss the method for sampling red drum in offshore waters. From this call, the group recommended that the $233,000 earmarked for red drum work be used for an aerial survey to determine the location of the stock biomass in the Gulf. The aerial survey is part of a three-year study where the first year consists of the aerial work, the second year consists of a tagging study and offshore age structure work and the third year is composed of a recapture study, offshore age structure work and aerial survey. In the event that full funding for the project is not appropriated, a study will be conducted next year to determine the age/analysis of the offshore red drum stocks. Funding for this activity will be authorized by the National Marine Fisheries Service. The Reef Fish Work Group sponsored a workshop concerning sampling artificial, vertically-distributed habitat (oil and gas structures) in the Gulf of Mexico at the Louisiana Department of Wildlife and Fisheries' Lyles St. Amant Marine

Laboratory on Grand Terre Island. The workshop was conducted on April 26-27, 1995 and consisted of presentations from invited speakers regarding their work as it pertained to sampling of oil and gas structures and group discussions to formulate some recommendations concerning this type of sampling. 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 FY1995. 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 FY1996 Activities

Preliminary FY1996 SEAMAP-Gulf budget allocations are shown in Table 3. Last year, total program allocations for all three SEAMAP components--Gulf, South Atlantic and Caribbean, is approximately $1.32 million. At the August meeting, the SEAMAP components based their allocations on a 15% cut in funding ($1.1K) for FY1996. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be $512,403.

Proposed FY1996 activities for all Gulf participants are shown in Table 4. The approved 1996 Operations Plan for SEAMAP-Gulf is contained in Appendix B. It should be noted that the SEAMAP fiscal year begins on January, thus fall activities for FY1996 will be conducted from October-December 1995.

Information Dissemination

The following documents were published and distributed in FY1995:

- *1995 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, 1994 to September 30, 1995*. 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, 1993 to September 30, 1994*. A summary of FY1994 activities and proposed FY1995 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.

- *Environmental and Biological Atlas of the Gulf of Mexico, 1993.* A compilation of information obtained from the 1993 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.

- *Proceedings from the SEAMAP Reef Fish Workshop.* A compilation of the presentations from invited speakers regarding their work as it pertains to sampling of oil and gas structures and recommendations formulated by the group concerning this type of sampling.

- *Real-time Data Summaries, 1995.* 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.

FY1995 Financial Report

Total allocations for FY1995 program administration were $94,781. 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, 1995.

TABLE 1.

SEAMAP REPRESENTATIVES FOR FY1995

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

proxy: Stevens Heath

Richard Waller, Vice Chairman
Mississippi Department of Marine Resources
Gulf Coast Research Laboratory

Jim Hanifen
Louisiana Department of Wildlife and Fisheries

Mark Leiby
Florida Department of Environmental Protection

Terry Cody
Texas Parks and Wildlife Department

Joanne Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Wayne Swingle (non-voting)
Gulf of Mexico Fishery Management Council

TABLE 2.

SEAMAP WORK GROUP MEMBERS FOR FY1995

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 Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Wayne Swingle
Gulf of Mexico Fishery Management Council

James Warren
Mississippi Department of Marine Resources
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 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 Marine Resources
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 Marine Resources
Gulf Coast Research Laboratory

Scott Dinnel
University of Southern Mississippi

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 Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Carmello Tomas
Florida Department of Environmental Protection

Richard Waller
Mississippi Department of Marine Resources
Gulf Coast Research Laboratory

PLANKTON WORK GROUP

Joanne 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
Mississippi Department of Marine Resources
Gulf Coast Research Laboratory

Rick Shaw
Louisiana State University

Ken Stuck, Curator
SEAMAP Invertebrate Plankton Archiving Center
Mississippi Department of Marine Resources
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 Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Mark Van Hoose
Alabama Department of Conservation and Natural Resources

James Warren
Mississippi Department of Marine Resources
Gulf Coast Research Laboratory

REEF FISH WORK GROUP

Richard Waller, Leader
Mississippi Department of Marine Resources
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
Mississippi Department of Marine Resources
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 FY1996 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
Mississippi Dept. of Marine Resources/Gulf Coast Research Lab	95,495
Texas Parks and Wildlife Department	54,804
Gulf States Marine Fisheries Commission	80,654
TOTAL	$512,403

TABLE 4.

PROPOSED SEAMAP-GULF ACTIVITIES, FY1996

	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:				
1994 Biological and Environmental Atlas				X
1996 Marine Directory			X	
FY1995 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 FY1995 SEAMAP MEETINGS

SEAMAP SUBCOMMITTEE
MINUTES
Tuesday, October 18, 1994
Clarion Hotel, New Orleans, Louisiana

Chairman Walter Tatum called the meeting to order at 1:40 p.m. The following members and others were present:

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

Others
Steve Heath, ADCNR/MRD, Dauphin Island, AL
Terry Henwood, NMFS, Pascagoula, MS
Ken Savastano, NMFS, SSC, MS
Harriet Perry, GCRL, Ocean Springs, MS
Tom McIlwain, NMFS, Pascagoula, MS
Bob Cooke, USFW-Federal Aid, Atlanta, GA
Ken Edds, LDWF, Baton Rouge, LA
Jill Wisniwski, LDWF, Baton Rouge, LA
Marc Fugler, LDWF, Baton Rouge, LA
Ralph Allemad, LDWF, Baton Rouge, LA
Albert King, GMFMC, Gulf Shores, AL
Jan Harper, Commissioner, TX

Staff
Dave Donaldson, SEAMAP Coordinator
Cheryl Noble, Staff Assistant

Adoption of Agenda

The Reef Fish Work Group Report was moved after the Adult Finfish Work Group Report. The agenda was adopted with the change.

Approval of Minutes

The August 9 & 11, 1994 minutes were approved with minor editorial changes.

Administrative Report

D. Donaldson reported that the Fall Plankton survey took place from September 8 to October 4, 1994. Vessels from Florida, Alabama, Mississippi, Louisiana and NMFS surveyed Gulf waters from Florida Bay to Brownsville, Texas. Approximately 180 stations were sampled. The purpose of the survey is to assess abundance and distribution of king mackerel and red drum eggs and larvae in the Gulf of Mexico.

The Fall Shrimp/Groundfish Survey will be conducted from October to December 1994. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. Vessels from NMFS, Alabama, Mississippi, Louisiana and Texas will sample waters out to 60 fm from Mobile Bay, Alabama to the U.S./Mexican border.

The TCC Report, which covers FY94 activities and proposed FY95 activities was distributed to the Subcommittee members. The NMFS and GSMFC are working on a draft copy of the 1992 Atlas. The draft copy will be sent out for review by the Subcommittee and it will be published within the contract period. Work will start soon on the 1993 Atlas and will be ready at the first of the year for editing. D. Donaldson said that this will put the SEAMAP in a position to publish two Atlases in 1995. The publication of atlases will then be a year behind and that's the best that can be expected. He said he is still waiting on information from the South Atlantic and Caribbean components before he finalizes the Joint Annual Report.

* D. Donaldson informed the group that he attended the ASMFC Trawl Data Workshop concerning trawl data surveys conducted throughout the Atlantic. He said he and Ron Lukens discussed conducting a similar workshop for the Gulf of Mexico region. He asked the Subcommittee their feelings about this. After a lengthy discussion, Richard Waller moved that the SEAMAP Subcommittee sponsor a symposium regarding trawl data surveys and associated uses of the data in the Gulf of Mexico. This could be done as a general session at the GSMFC's 1995 Annual Fall Meeting. Jim Hanifen seconded the motion and it passed unanimously. Joanne Shultz offered to help Dave Donaldson in planning the general session.

D. Donaldson said that in 1995, Larry Simpson is going to focus on getting additional money for SEAMAP in the 1996 budget and hopefully, he'll be as successful next year as he was this year.

Comparative Tow Survey

Joanne Shultz distributed a report on the comparative towing between the TOMMY MUNRO and the PELICAN during the past summer (Attachment I). The report states that upon reviewing the results of the tows, there appears to be no appreciable difference in the fishing powers of the PELICAN and TOMMY MUNRO. J. Shultz, R. Waller and D. Donaldson will schedule the comparative tow surveys between the TOMMY MUNRO and OREGON II for the final year of the three year project. Everyone agreed that the comparative tow survey has been a good activity.

Work Group Reports

Adult Finfish - Terry Henwood, Work Group Leader, said the work group had a conference call on developing sampling protocol for a SEAMAP shark survey. The group decided he should contact various shark experts for recommendations on developing the protocol. The experts recommended using nylon longline gear which can be purchased for approximately $10,000 and is transferrable between boats. He suggested buying the gear during the first year of the survey and transfer it between the various state vessels.

* T. Henwood received a memo from Dick Stone who is the head of the National Marine Fisheries Management Plan for Sharks in the NMFS Washington Office. In the memo, D. Stone states he has access to money to be used for shark research and indicated his office would possibly be interested in funding the Work Group at some level. D. Stone then informed him that NMFS is planning a meeting regarding an integrated shark research program to aid in the development of a sampling protocol for sharks. The meeting is still in the planning stages but they hope to have it sometime in January 1995. T. Henwood asked the Subcommittee if the Work Group should attend the meeting then have a work group meeting afterwards to discuss information obtained at the meeting. J. Shultz moved that the SEAMAP Adult Finfish Work Group attend the upcoming NMFS meeting dealing with integrated shark research. R. Waller seconded the motion and it passed unanimously. The Subcommittee asked T. Henwood to give a report on the meeting at the next SEAMAP Subcommittee meeting in March 1995.

Reef Fish Work Group - Richard Waller, Reef Fish Work Group Leader, stated that in reference to the charge of developing a protocol for sampling vertical habitat, they have come to the conclusion that ROVs, portable video gear or divers is the best ways to sample. NMFS submitted a proposal to MARFIN on developing such a protocol but it was not funded.

* J. Hanifen said that after reviewing his budget for next year, he should have some money to have a workshop on sampling vertical reefs. He stated there are a lot of ways to sample the reefs and the workshop could

be used to decide how to sample and to determine what type of equipment is available for sampling vertical reefs. After some discussion, J. Hanifen moved that Louisiana sponsor a planning workshop for the Reef Fish Work Group to examine methods of conducting a reef fish fishery-independent survey including the availability of equipment, feasibility of its use, and funding requirements for surveys of man-made, vertically-distributed hard bottom habitats in the Gulf of Mexico. J. Shultz seconded the motion and it passed unanimously.

R. Waller stated that he is still having problems with the reef fish survey. The mapping part is working very well but the quality of the videos is quite bad. He said the nephloid layer is the main reason for the poor video quality. It costs $15,000 to do the survey and he asked if this is a good use of SEAMAP money because they are only getting five tapes which may or may not be usable. He said Mississippi waited until later in the year to sample to see if the water would be clearer but it didn't seem to make a difference. In 1992, twelve out of seventeen tapes were readable but since then most of the tapes have not been usable. W. Tatum said that Alabama has had extraordinary results using a monitor and an umbilical cord to the television camera and suggested Mississippi try using this technique. R. Waller said that this technique would not be feasible since Mississippi works in much deeper water and it would be very difficult to keep the vessel on site.

R. Waller suggested mapping 24 hours a day and not video at all. W. Tatum said to put that on the agenda for the next Work Group meeting and give the Subcommittee a recommendation on this issue.

Data Coordinating Work Group

Ken Savastano, Work Group Leader, submitted a Data Management Report (Attachment II) to the Subcommittee. The major accomplishments since August 1994 are:

- Status reports from SEAMAP years 1982-1994 are in Attachments 1-9 of the Data Management Report. All cruise data have been reformatted to SEAMAP versions 3.0 or 3.1. Data processing of 1994 Gulf and South Atlantic and 1993/1994 Caribbean data is in progress.

- Processing of the 1992 SEAMAP Atlas is complete and processing of the 1993 SEAMAP Atlas is approximately 20% complete.

- One hundred and forty-five SEAMAP requests have been received and one hundred and forty-four requests have been filled.

- The SEAMAP on-line data base now contains 240 cruises with a total of 1,630,216 records which is approximately 63 megabytes of data.

Environmental Data Work Group

Perry Thompson, the Work Group Leader, was unable to attend the meeting so J. Shultz gave his report. She stated the Work Group has very little to report since the March 1994 meeting. She said the work group requests funds for a meeting prior to March 1995 to review sampling procedures and to discuss calibration of environmental equipment and chlorophyll sampling. The work group is trying to put more effort into comparing the CTD fluorometer readings versus the water filtered for chlorophyll samples. The purpose of the analysis is to see if a correlation exists between the two methods of collecting chlorophyll. If a correlation exists, then the Work Group would make a recommendation to the Subcommittee to either continue with the present procedures or stop collecting the filtered chlorophyll samples and rely on the CTD fluorometer readings. The Subcommittee agreed the Work Group should have a meeting to discuss these issues and J. Hanifen suggested adding high salinities and oxygen readings to the agenda also.

Plankton Work Group

Joanne Shultz, Work Group Leader, said that work is continuing and they are summarizing the late summer/fall plankton data and hope to have a draft technical report by the spring of 1995 to present to the

Subcommittee. She reviewed a letter (Attachment III) to the director of the Polish Sorting and Identification Center (PSIC) that listed the samples sent to the PSIC. She pointed out that a greater number of samples were generated during the Bluefin Tuna survey this year because of joint collections with Japanese research vessels. Extra funds were available to cover these sortings. She said samples are now being processed in just under a year and they are now getting the data, samples and larvae back from the PSIC.

Shrimp/Groundfish Work Group

Steven Heath, Work Group Leader, said that they continued their work with all the states participating. The Work Group had a conference call and they decided that unless something changes significantly in the procedure for the shrimp/groundfish sampling, another conference call in January will be sufficient to discuss the stations they will be sampling.

Election of Officers

* Jim Hanifen, the Nominating Committee Chairman, said he assembled a subcommittee to discuss nominations and after much discussion decided on a slate of officers. They nominated Walter Tatum for Chairman and Richard Waller for Vice Chairman and did not make any other nominations. J. Hanifen then moved nominations be closed and the nominees be elected by the Subcommittee. J. Shultz seconded the motion and it passed unanimously.

There being no further business the meeting adjourned at 4:35 p.m.

SEAMAP SUBCOMMITTEE MINUTES
Tuesday, March 14, 1995
Orlando, Florida

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

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

Others:
Perry Thompson, NMFS, Pascagoula, MS
Buck Sutter, NMFS, St. Petersburg, FL
Joseph Smith, NMFS, Beaufort, NC
John Merriner, NMFS, Beaufort, NC
Steve Branstetter, GSAFDF, Tampa, FL

Staff:
Larry Simpson, Executive Director
David Donaldson, SEAMAP-Gulf Coordinator
Cheryl Noble, Staff Assistant

Adoption of Agenda

An update on the Red Drum Assessment will be presented under Other Business. With that change, the agenda was adopted as submitted.

Approval of Minutes

The minutes from the October 18, 1994 meeting and the November 7, 1994 conference call were approved as submitted.

Administrative Report:

Dave Donaldson reported that the Spring Plankton survey will take place March through May 1995. The purpose of the survey is to assess abundance and distribution of blue fin tuna eggs and larvae in the Gulf of Mexico. Vessels from NMFS and Florida will survey Gulf waters from Florida Bay to Brownsville, Texas.

The Reef Fish Survey is going into its fourth year and the purpose of this survey is to assess the relative abundance and compute population estimates of reef fish. Vessels from NMFS, Texas, Mississippi, Alabama and Florida samples inshore and offshore waters, 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 Summer Shrimp/Groundfish Survey will be conducted from March through July, 1995. The purpose of this survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. Vessels from NMFS, Alabama, Mississippi, Louisiana and Texas will sample waters out to 50 fm from Mobile Bay, Alabama to the U.S./Mexican border.

D. Donaldson distributed the 1995 Marine Directory. The directory is an inventory of marine agency contacts (State, Federal and university) concerned with fishery research in the Gulf of Mexico. It also summarizes

survey activities. The directory will be distributed to the GSMFC Commissioners and Proxies and the Technical Coordinating Committee. The 1992 Atlas and the 1994 Joint Annual Report have been completed and distributed.

D. Donaldson informed the Subcommittee that L. Simpson will be focusing on getting additional funds for SEAMAP during FY1996. He stated that a briefing packet has been developed with information on conducting a shark survey and for sampling oil and gas structures.

D. Donaldson stated that the NMFS Laboratory at Stennis Space Center (SSC) will not be closed. P. Thompson stated that NMFS, in order to save money, will start phasing out term employees and they will probably contract any work that has to be done. W. Tatum asked that if the SSC did close what would happen to the SEAMAP database. P. Thompson said it would probably be moved to the Pascagoula facility.

D. Donaldson said that the ASMFC has secured money to hire a full time SEAMAP Coordinator and the first duty of this person will be to coordinate the development of a Strategic Plan for SEAMAP. W. Tatum said that he has not had any contact with the South Atlantic or the Caribbean Chairmen since the last meeting and was wondering why he wasn't informed that they planned to proceed with writing the plan. D. Donaldson said he told D. Stephan that this is a joint program and all three components should be involved in writing the plan. D. Stephan is no longer the Coordinator for the South Atlantic and this may be why the Gulf component was overlooked. The Subcommittee felt that the South Atlantic Subcommittee should have kept the other two components appraised on the situation. W. Tatum stated that a letter will be written either from him as chairman or from the Commission to Jack Dunnigan stating the Gulf and the Caribbean components should be involved in writing the plan and they do not appreciate not being contacted. W. Tatum stressed that a lot of foresight needs to go into the new plan since most of the crisis that are being faced in the Gulf right now were not addressed in the 1990-1995 plan, so all components must be involved in the writing of the new plan. John Merriner informed the group that the ASMFC is in an upheaval due to restructuring their operation to accommodate the administration of the new Atlantic Coastal Fisheries Cooperative Management Act. He stated that maybe there was a misunderstanding or oversight on ASMFC's failure to inform the other SEAMAP components about the hiring of a new Coordinator to do the Strategic Plan but it probably was not deliberate. W. Tatum thanked him for this information and said they would tone down the letter to J. Dunnigan.

Funding Issues

D. Donaldson said L. Simpson is working on getting additional money, hopefully $600,000 to do a shark survey and a reef fish survey to sample oil and gas structures. The question of the allocation of this money came up. The question of will the money be just for the Gulf or the whole SEAMAP program was discussed. It depends on how the money is earmarked in Congress, so the Subcommittee agreed that the proposals should be developed so the Gulf will be prepared if the funding becomes available.

Work Group Reports

Adult Finfish

D. Donaldson said that there was an integrated shark survey meeting in Washington, DC on developing some type of shark sampling protocol. T. Henwood said he has not been contacted on the outcome of this meeting. To the best of their knowledge, there is $50,000 available for the NMFS Pascagoula Laboratory to do pilot work on a shark survey. R. Waller said T. Henwood sent him a memo inquiring about the availability of boats, personnel, etc. to do work. They discussed the possibility of using small boats which would cost approximately $300/day as compared to $3,000/day for the larger boats and they will probably use surface long-lines. Everyone agreed that eventually shark data will be a high priority for NMFS and the Work Group should develop a sampling protocol. It was decided that D. Donaldson will set up a conference call of the Adult Finfish Work Group to discuss this issue.

Environmental Work Group

P. Thompson reported the Environmental Work Group met on March 7 and that all the members of the Work Group attended. The main focus of the meeting was chlorophyll sampling techniques. Presently, there are

two independent techniques for collecting chlorophyll or providing measurements of chlorophyll at the SEAMAP environmental stations. Those being the standardized laboratory extraction technique and the fluorometric technique.

He stated the extraction technique is very costly in terms of personnel and if the samples are not analyzed before a six month period, degradation of the samples occurs. This technique also can have a high margin of error. With the CTD fluorometer, the information automatically goes into the computer system so there is less error and no degradation of the samples occurs. Rob Ford at the Pascagoula Laboratory analyzed both techniques to determine if a correlation exists between chlorophyll samples taken by the CTD and those using the extraction technique. It appears that basically the two methods are the same but the extraction technique has a greater variation due to the fact that sometimes the sample is not taken at the same place the CTD is dropped. He said that sometimes the person taking the chlorophyll sample does so before the boat has stopped. The sample may be taken some 50-100 yards away from the actual CTD drop so that may be why there is some variation between the two techniques.

- The first recommendation from the Work Group to the Subcommittee is that NMFS discontinue the extraction procedure for chlorophyll sampling at each of the SEAMAP stations. Instead, use a CTD flourometer to obtain the chlorophyll data. For calibration purposes, NMFS will continue with the extraction technique once a day at noon over the range of the expected concentrations. Since most of the states don't have CTDs or fluorometers, they will continue with the extraction technique and then NMFS would analyze those samples.

- The next recommendation to the Subcommittee is to ask all participants to send their chlorophyll samples to the NMFS Pascagoula Laboratory at the end of each cruise as soon as possible. The Work Group discussed chlorophyll and salinity sampling procedures, and decided that when the CTD is put over there will be a Niskin bottle attached to it. When that Niskin bottle is tripped, the exact depth and value is recorded plus the flourometer reading is recorded. Also, NMFS is exploring the possibility of changing the lab extraction technique from acetone-based to methanol-based. This method is quicker and more accurate. On some cruises, the methanol method could be used on board if there is a fluorometer available.

- The Work Group asked the SEAMAP coordinator to investigate and present to the Work Group or Subcommittee, a listing of who uses the SEAMAP environmental data. There has to be some way to let more people know about the availability of SEAMAP data. P. Thompson said the Atlas is a good source and maybe put some information into the marine directory. SEAMAP could also send out press releases, newsletters or advertise on Internet.

- The next recommendation is to revise the SEAMAP Environmental Data work sheet. This sheet has been used for 13 years and is outdated. The Work Group agreed to meet with the Data Manager to discuss changes.

- On the subject of standardization/calibration of environmental gear, the Work Group recommends that all SEAMAP participants who do not have a CTD to consider purchasing one. P. Thompson said they realize it is expensive but funding for this is something they feel the Subcommittee should address. If possible, the states could borrow one from another source.

J. Hanifen said to change the technique for chlorophyll sampling may cause some drastic change to the long term database so he feels uncomfortable with making this change without very careful thought. R. Waller stated that he didn't think anyone was aware of the degradation problem so if the samples are no good the extraction method isn't working anyway. J. Hanifen offered to help NMFS analyze the samples. J. Hanifen stated also that when using CTDs you have a high cost for disposal. W. Tatum said you can flag in the database the year and cruise in which this technique started but it sounds like we may have to change or have nothing at all.

* After a lengthy discussion, R. Waller moved to accept the Environmental Data Work Group recommendations. J. Hanifen said that the more information we have to develop a calibration between the two methods the more comfortable he'd feel. Terry Cody offered a substitute motion to accept the Work Group recommendations and in addition, NMFS will conduct a study where several samples (throughout the day) will be

collected to compare and correlate the two chlorophyll collection methods. The substitute motion was seconded and passed unanimously.

Data Management Report

K. Savastano submitted a Data Management Report (Attachment I) to the Subcommittee. The major accomplishments since October 1994 are as follows:

- Status reports from SEAMAP years 1982-1994 are in Attachments 1-10 of the Data Management Report. All cruise data have been reformatted to SEAMAP versions 3.0 or 3.1. Data processing of 1994 Gulf data and 1993/1994 Caribbean data is in progress. Reprocessing of some of the 1982-1988 Gulf data is also being performed.

- Processing of the 1993 SEAMAP Atlas will continue upon completion of the conversion of the Atlas software from the UNISYS A-10 system to the Silicon Graphics, Inc. (SGI) system.

- One hundred and fifty SEAMAP requests have been received and one hundred and forty-eight requests have been filled.

- The capability of accessing the SGI using INTERNET has been added. There is a continuing software effort in modifying the SEAMAP Data Management system to run on a SGI mainframe/unix operating system in Miami (NMFS IT-95 system). He recommends that any state who has an option should get on internet.

- The SEAMAP on-line data base now contains 253 cruises with a total of 1,760,276 records which is approximately 68 megabytes of data.

K. Savastano then informed the Subcommittee that they will be losing a data entry/key punch/editing type person and does not think that she'll be replace. He gave all information to the program manager informing him how losing this person would negatively impact the SEAMAP. If this person is not replaced, re-entering the old data will cease. The high priority will be on new cruise data. It was suggested that maybe each state could re-enter their own data. He also pointed out that the Virgin Islands,the Caribbean leg of the SEAMAP system is coming in now.

Reef Fish Work Group

R. Waller said that he, D. Donaldson, J. Hanifen and R. Kasprzak met to plan the Reef Fish Workshop. The purpose of the workshop is to develop a sampling protocol for reef fish on vertical man-made habitats. He stated they have invited a very impressive list of people to give presentations on work they have done around oil and gas platforms, and so far only three people has declined. The tentative dates for the work shop are April 26-27 at the Louisiana Department of Wildlife's Lyles St. Amant Marine Laboratory in Grand Terre, Louisiana. On the first day of the work shop the invited speakers will give a 20-30 minute presentation with a question/answer session. On the second day, the work group will meet and discuss the presentations, then try to develop a proper protocol. He said Louisiana is paying for the overnight accommodations at the dormitory so please let them know as soon as possible if you will be attending. Also, they asked the presenters to submit their presentation by hard copy or diskette and a proceedings on the workshop will be published.

He also told the Subcommittee that the Work Group has been reading tapes from 1994 and they have had a lot of discussion on the techniques to use when reading these tapes. They are trying to decide if they should use the minimum count versus the maximum count in reading the tapes.

Other Business

Red Drum

J. Shultz informed the group that Scott Nichols said that $230,000 is available for red drum work and the Red Drum Work Group should decide the best way to use the money. W. Tatum stated he heard the money was

available with a preference on age analysis. D. Donaldson said the money was earmarked in Congress for red drum work for an aerial survey and hopefully money will be available in subsequent years to duplicate the S. Nichols, et al. 1987 study but there is no guarantee. W. Tatum said he believes the money will only be available for this year so we should get as much information as possible with the $230,000. The administration of the money is not clear so B. Sutter will investigate and then contact W. Tatum and the Subcommittee will have a conference call to decide how to direct the Red Drum Work Group to proceed.

J. Merriner informed the Subcommittee of an upcoming AFS meeting with a Gulf of Mexico focus. He felt this would be a perfect opportunity to inform participants about SEAMAP and the data that is available. He said to receive more information on the meeting, contact Tom McIlwain or Herb Kumpf.

There being no further business, the meeting was adjourned at 5:20 p.m.

SEAMAP-Gulf Subcommittee Meeting
MINUTES
August 6, 1995

Chairman Walter Tatum called the meeting to order at 2:10 p.m. The following members and others were present.

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

Others:
Buck Sutter, NMFS, St. Petersburg, FL
Scott Nichols, NMFS, Pascagoula, MS

Staff:
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 minutes from the March 14, 1995 SEAMAP-Gulf Subcommittee were approved as submitted.

Administrative Report

D. Donaldson reported that the Reef Fish Survey is continuing to date. The purpose of this survey is to assess the relative abundance and compute population estimates of reef fish. Vessels from NMFS, Texas, Mississippi, Alabama and Florida, and personnel from Louisiana participates in this survey.

The Summer Shrimp/Groundfish Survey was completed July 19, 1995. The purpose of the survey is to determine abundance and distribution of demersal organisms in the Gulf of Mexico. A total of 323 stations were sampled by NMFS, Louisiana, Mississippi, and Alabama.

The Shrimp/Groundfish Data Summaries were conducted from June 13 to July 19, 1995. Approximately 280 interested persons received six weekly near-real-time catch data summaries which show pounds/hour and counts of brown, pink and white shrimp caught and finfish catches during the summer survey.

Work is continuing on the 1993 Atlas. D. Donaldson said they missed a window prior to the Summer Shrimp/Groundfish cruise but the atlas should be published later this year.

Copies of last year's Joint Annual Report will be distributed to the other coordinators at this meeting for their comments and it will be published later this year.

SEAMAP-Gulf will sponsor a general session at the Fall GSMFC Annual Meeting. The session is scheduled for Tuesday, October 17, 1995 from 1:00 p.m. to 5:00 p.m. The purpose of the session is to facilitate discussion concerning how fishery-independent data is used in the assessment and management of various species in the Gulf of Mexico. Presentations include:

* Overview of fishery-independent data use for management and red snapper assessment by Scott Nichols.
* How fishery-independent data is used for the assessment of blue fin tuna by Steve Turner.
* Determining the Texas Closure using fishery-independent data by Terry Cody.
* Uses of fishery-independent data for determination of Alabama's shrimp season by Mark Van Hoose.
* Ichthyoplankton data summaries from the SEAMAP summer shrimp/groundfish surveys by Joanne Shultz.
* The variety of uses of fishery-independent data for management of Louisiana's fisheries by Joseph Shepard.

The presenters were asked to provide a copy of their presentation on disk. A proceedings will be published on the general session. W. Tatum will give opening and closing remarks at the session and he asked that each subcommittee member attend the session if possible.

D. Donaldson also stated that the Commission has received RecFIN/ComFIN money for administrative purposes. This will free some SEAMAP money, making it possible to conduct work group meetings. He said that after the meeting he will send a letter to the Subcommittee and work group leaders asking if there is a need for any work group meetings. The deadline for the meetings will be December of this year.

Discussion of Strategic Plan Development

Other than a few minor changes, the group agreed that Robin Peuser did an excellent job on rewriting the Operations Plan. D. Donaldson said that each component was asked to develop a list of priority items they would like to do in the future. W. Tatum stated that each component needs to invision what fishery management problems will occur in the next five years. After discussion on each state's priority list, it was decided that W. Tatum and D. Donaldson will consolidate the following suggestions from the five Gulf States and send to R. Peuser to be incorporated into the 5 year plan:

Texas - continuation of reef fish work; collection of data for stock assessment of recreationally-important species; and maintenance of SEAMAP data management system
Louisiana - reinstate the coastwide 1-to-5 fathom inshore summer and fall shrimp/groundfish surveys with minor modifications; implement a program to impacts of annual hypoxia on distribution of fishes; and reef fish assessment--replicate the NMFS 1995 survey nearer shore off Louisiana and at LDWF artificial reef sites
Mississippi- oil rig sampling, shark survey; and winter plankton survey
Alabama - intensifying sampling for all reef fish species; developing a sampling methodology for pompano; and winter sampling for mullet larvae
Florida - Mark Leiby will discuss this with Alan Huff and then he will inform D. Donaldson.

* The Subcommittee then discussed the 3-year red drum study that is scheduled to start this year. The study will be a repeat of the Nichols, et al. that was done in 1987. After discussion, R. Waller moved that in the event the second year funding for replication of the Nichols et al. study is not available, the Subcommittee will charge the Red Drum Work Group with developing an age structure study. The Subcommittee was informed by Dr. Nichols that there would be 250K available through NMFS for this study and if the Work Group feels that more money is necessary, the work group should be instructed to develop a plan to submit to MARFIN or some other funding source to supplement that 250K to conduct an offshore age structure study. J. Hanifen seconded. After discussion, the motion passed unanimously.

Update of Comparative Tow Survey

D. Donaldson informed the Subcommittee that the OREGON II and the TOMMY MUNRO are scheduled to do comparative tows October 3 - 7. They expect to have a report before the March meeting for the Subcommittee to review. Also, this is the final year for the three-year period.

Status of FY1996 Budget

S. Nichols informed the group that status quo, 15% and 50% reductions are all realistic possibilities for planning the budget. There was a discussion concerning submitting for under status quo because it is easier to amend for more money if it's available than having a proposal requesting more money than is available. After discussion, each state decided to plan for a 15% across the board cut and try to continue their current work. If the final figure is more than a 15% cut, the Subcommittee recommends that each component prioritize all ongoing activities and then determine which activity will be the least impacted--least impacted in terms of maintaining the continuity of a long term database. The breakdown is as follows:

ALABAMA	$ 68,000.00
FLORIDA	93,840.00
LOUISIANA	120,700.00
MISSISSIPPI	94,495.00
TEXAS	54,804.00
GSMFC	80,564.00
TOTAL	$512,403.00

Work Group Reports

A. Reef Fish Work Group

R. Waller informed the Subcommittee that the Reef Fish Work Group sponsored a workshop on sampling vertical habitats at the Lyles St. Amant Marine Laboratory in Grand Terre, LA. A number of speakers gave presentations and answered questions on work they had done. Each speaker was asked to submit a hard copy and a disk of their presentation for a proceedings to be published on the workshop. A list of the speakers and their topics are attached (ATTACHMENT I). After the presentations, the Work Group met to discuss development of a sampling methodology of vertical habitats in the Gulf of Mexico. The Work Group recommends that the SEAMAP Subcommittee accept the following recommendations and further ask that they be used by the NMFS during its pilot study for the development of a sampling methodology in the Gulf of Mexico. The following recommendations were generated:

Separate the study into three zones--coastal zone, which is out to 22 meters in depth; offshore zone, which is 23 to 80 meters in depth; and a blue water zone from 80 meters. The NMFS should conduct a pilot hydro-acoustic video study incorporating these sampling methods:

* mobile shipboard acoustic passes on all sides of rig;
* mobile ROV acoustic passes;
* ROV visual at set depth strata;
* four-camera array for static visuals at set depth strata;
* standard water parameters as well as current speed and direction, transmissivity, and PAR;
* plankton sampling including standard sampling and possible "light trap" samples;
* laser measurements of target species;
* collect hard parts for aging studies; and
* examine historical data bases for baseline information.

* After a brief discussion on the recommendations, J. Hanifen moved to accept the recommendations, Terry Cody seconded and the motion passed unanimously. It was also decided to send the recommendations via letter to Scott Nichols and Brad Brown at NMFS.

Data Coordinating

K. Savastano distributed and reviewed the Data Management report (Attachment II). He said they just implemented the system on the SGI and the new version has Internet capability. He asked that everyone send in their disclosure forms. He also suggested having a one day work shop on using the Internet. The 1994 data processing is complete and they have started processing the 1995 data. The summer SEAMAP real-time data was completed. There has been 162 SEAMAP requests and 158 requests have been completed.

Preparation of Cooperative Agreements

D. Donaldson distributed last year's Operation Plan and NMFS's portion of the Cooperative Agreement and informed the group of the few changes that were made. He then asked that everyone review the documents and send in any changes to him. He will then revise and send final copies to everyone.

There being no further business, the meeting was adjourned at 5:15 p.m.

APPENDIX B

1996 SEAMAP OPERATIONS PLAN

SEAMAP-GULF OF MEXICO

OPERATIONS PLAN

January 1, 1996 - December 31, 1996

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, 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: 1995-2000* is currently being 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: 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 (SIS) 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 seventh SEAMAP-Gulf Annual Operations Plan describes planned activities and events for the period January 1, 1996 through December 31, 1996. 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 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 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 1996 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 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.

Louisiana Seasonal Day/Night Trawl Surveys

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

Sampling will be conducted in March, July, October and December 1996. A stratified random station design with a total of 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 surface and bottom chlorophylls will be done at Louisiana Department of Wildlife and Fisheries (LDWF). Plankton samples will be sorted and identified for ichthyoplankton at the LDWF Plankton Laboratory. Specimens and data will be shipped to the SAC.

OPERATIONS

The following activities and events by participant comprise the SEAMAP-Gulf of Mexico operations schedule for the period January 1, 1996 to December 31, 1996:

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 throughout the year in Texas waters

(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

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 and identification

(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

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) Reef Fish Survey: June/July, Gulf waters

(5) Plankton sampling in conjunction with trawl surveys

(6) SEAMAP Invertebrate Plankton Archiving Center operations

(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

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 throughout the year nearshore Gulf 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) Reef Fish Survey: sampling throughout the year Gulf waters off Florida

(4) SEAMAP Archiving Center operations

(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

National Marine Fisheries Service, Southeast Fisheries Science Center

(1) 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) SIS implementation and operations

(8) Processing and transhipment of SEAMAP 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 SIS, 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 Survey.

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 1996:

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

(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: 1990-1995*. Designated members for 1996 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 & Natural Resources:	Walter Tatum
Florida Department of Environmental Protection:	Mark Leiby
National Marine Fisheries Service:	Joanne Shultz
Gulf of Mexico Fishery Management Council:	Wayne Swingle (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 1996 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 Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Wayne Swingle
Gulf of Mexico Fishery Management Council

James Warren
Mississippi Department of Marine Resources
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 Shultz
National Marine Fisheries Service
Pascagoula Laboratory
Plankton Work Group

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

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

Richard Waller
Mississippi Department of Marine Resources
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 Marine Resources
Gulf Coast Research Laboratory

Scott Dinnel
University of Southern Mississippi

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 Shultz
National Marine Fisheries Service
Pascagoula Laboratory

Carmelo Tomas
Florida Department of Environmental Protection

Richard Waller
Gulf Coast Research Laboratory

PLANKTON WORK GROUP

Joanne 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

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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 component 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.