

ANNUAL REPORT

TO THE

TECHNICAL COORDINATING COMMITTEE

GULF STATES MARINE FISHERIES COMMISSION

OCTOBER 1, 2023 TO SEPTEMBER 30, 2024

SEAMAP Subcommittee

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TABLE OF CONTENTS

INTRODUCTION	1
FY2024 SEAMAP RESOURCE SURVEYS.....	1
Fall Shrimp/Groundfish Survey.....	1
Spring Plankton Survey	2
Bottom Longline Survey.....	3
Reef Fish Survey.....	3
Summer Shrimp/Groundfish Survey.....	3
Fall Plankton Survey	4
INFORMATION SERVICES.....	4
SEAMAP Information System	4
Real-time Data	5
PROGRAM MANAGEMENT.....	5
Planning	5
Information Dissemination	6
Proposed 2025 Activities	6
FY2024 Financial Report.....	6
TABLE 1. SEAMAP REPRESENTATIVES FOR FY2024.....	7
TABLE 2. SEAMAP WORK GROUP MEMBERS FOR FY2024	8
TABLE 3. PRELIMINARY 2025 PROGRAMMATIC BUDGET	11
TABLE 4. PROPOSED SEAMAP-GULF ACTIVITIES, 2025	11

INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) is a State/Federal/University program for the 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 NOAA Fisheries' Southeast Regional Office (SERO).

Federal programmatic funding for SEAMAP activities and administration was appropriated in Federal Fiscal Years 1985-2024 (October 1 through September 30). State and Gulf States Marine Fisheries Commission (GSMFC) funding allocations for FY1985-FY2024 were handled through State/Federal cooperative agreements, administered by SERO and the Southeast Fisheries Science Center (SEFSC), NOAA Fisheries.

In FY2024, SEAMAP operations continued for the forty-third consecutive year. SEAMAP resource surveys included the Fall Shrimp/Groundfish Survey, Spring Plankton Survey, Summer Shrimp/Groundfish Survey, Reef Fish Survey, Bottom Longline Survey, Fall Plankton Survey, and plankton and environmental data surveys. Other FY2024 activities included SEAMAP information services and program management.

This report is the forty-first 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 FY2024 and proposed SEAMAP activities for FY2025.

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

FY2024 SEAMAP RESOURCE SURVEYS

The surveys conducted during the year address distinct regional needs and priorities and provide information concerning the marine resources in the Gulf of Mexico. Other activities included SEAMAP information services and program management.

Fall Shrimp/Groundfish Survey

The Fall Shrimp/Groundfish Survey was conducted from October 3 to November 20, 2023 from off southwest Florida to the U.S.-Mexican border. NOAA Fisheries, Florida, Alabama,

Mississippi, and Louisiana sampled two hundred seventy-eight trawl stations during the survey. Vessels sampled waters out to 60 fm with trawls in addition to environmental sampling. The objectives of the survey were to:

- (1) sample the northern Gulf of Mexico to determine abundance and distribution of demersal organisms from inshore waters to 60 fm;
- (2) obtain length-frequency measurements for major finfish and shrimp species to determine population size structures; and
- (3) collect environmental data to investigate potential relationships between abundance and distribution of organisms and environmental parameters.

Spring Plankton Survey

The SEAMAP Spring Plankton Survey was conducted by NOAA Fisheries from April 23 – May 25, 2024. Ninety-seven stations were sampled during the survey. The objectives of the survey were to assess, using neuston and bongo nets, the occurrence, abundance and geographical distribution of the early life stages of spring spawning fish, especially Atlantic Bluefin Tuna, from mid-continental shelf to offshore Gulf of Mexico waters in support of annual stock assessments and collect environmental data at all ichthyoplankton stations.

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. A mechanical flowmeter is mounted off-center in the mouth of each bongo net to record the volume of water filtered. Volume filtered ranges from approximately 20 to 600 m³ but is typically 30 to 40 m³ at the shallowest stations and 300 to 400 m³ at the deepest stations. A single or double 2x1 m pipe frame neuston net fitted with 0.947 mm mesh netting is towed at the surface with the frame half-submerged for 10 minutes. Samples are taken upon arrival on station, regardless of time of day. At each station, either a bongo and/or neuston tow are made depending on the specific survey. Preservation protocol called for the right bongo samples to be preserved in 10% formalin and then transferred to fresh 95% ethanol after 36 hours. The original standard SEAMAP method of initial preservation in 10% formalin for 48 hours was changed to 36 hours in order to improve long term storage for genetic analysis. The left bongo and neuston samples are initially preserved in 95% ethanol and then transferred to fresh 95% ethanol after 24 hours. In addition, hydrographic data (surface chlorophylls, salinity, temperature and dissolved oxygen from surface, midwater and near bottom, and Forel-ule color) were collected at all stations.

Right bongo and neuston samples collected from SEAMAP stations were transshipped to the Polish Sorting and Identification Center. Left bongo samples were archived at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC).

Bottom Longline Survey

The SEAMAP Bottom Longline Survey is a nearshore survey that complements an existing long-term fisheries independent longline survey being conducted by NOAA Fisheries, by targeting shark and finfish species within the shallow waters of the Gulf of Mexico. The objectives of the survey are to collect information on shark and finfish abundances and distribution with a 1-mile longline and to collect environmental data.

The Bottom Longline Survey samples during three seasons Spring (April-May), Summer (June-July), and Fall (August-September). Sampling is conducted in waters defined by the 3-10m depth contour across the entire U.S. Gulf of Mexico. NMFS Statistical Zones are used as guides to ensure effective distribution of sampling effort. Stations are proportionally allocated and randomly distributed within the 3-10m depth contour in each statistical zone based on the proportion of those depths present. Since the 3-10m depth strata is smaller in some statistical zones relative to other statistical zones, each statistical zone is allocated at least two stations during each season in order to ensure adequate sampling coverage. Florida, Alabama, Mississippi, Louisiana, and Texas collected data at 260 stations during the survey this year from April 4 to September 30, 2024.

Reef Fish Survey

The objectives of the survey are to assess the relative abundance of reef fish on the continental shelf edge-banks of the northern Gulf of Mexico, reef fish associated with oil and gas platforms, and reef fish associated with artificial reefs; map areas using a side scan sonar system; collect water samples for eDNA analysis; and collect environmental data. Stations are sampled with camera arrays baited with Atlantic Mackerel and squid prior to deployment. Each camera array is allowed to soak at the bottom for a minimum of thirty-five minutes to assure that twenty minutes of continuous video and stereo images are recorded. Camera arrays are only deployed during the day and habitat mapping is conducted at night. Vertical line sampling is also conducted to collect biological samples for life history information. Water samples are taken at approximately 100 stations per year for eDNA analysis. In addition, water temperature, salinity, dissolved oxygen, and transmissivity are collected at all stations.

Beginning in March, NOAA Fisheries sampled 351 camera stations and collected 20 water samples for eDNA analysis, while also mapping 919 linear nautical miles. Florida sampled 494 camera stations from April through August. Other state partners participated in a joint training cruise from August 7-14, 2024. Florida led the cruise with representatives from all states receiving hands on training on how to operate and deploy the video camera gear and the side scan sonar for habitat mapping.

Summer Shrimp/Groundfish Survey

The Summer Shrimp/Groundfish Survey began June 2 and sampling concluded August 2, 2024. SEAMAP collected 349 of the 350 originally scheduled stations. SEAMAP sent out weekly real

time plots of total catch and brown, pink, and white shrimp distribution during the Summer Shrimp/Groundfish Survey.

Objectives of the Summer Shrimp/Groundfish 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 60 fm.

Fall Plankton Survey

The Fall Plankton cruise took place from August 27 – September 27, 2024. NOAA Fisheries completed 87 stations during the survey while Louisiana completed 7. The objective of this survey was to collect ichthyoplankton samples with bongo and neuston gear for the purpose of estimating abundance and defining the distribution of eggs, larvae, and small juveniles of Gulf of Mexico fish, particularly King and Spanish Mackerel, lutjanids and sciaenids. Plankton samples were collected in the same manner as during the Spring Plankton Survey.

INFORMATION SERVICES

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

SEAMAP Information System

Biological and environmental data from all SEAMAP-Gulf surveys are included in the SEAMAP Information System, managed in conjunction with NOAA Fisheries-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 1982-2023 have been entered into the system and data from the 2024 surveys are in the process of being verified, edited, and entered for storage and retrieval. Verified, non-confidential SEAMAP data are available conditionally to all requesters, although the highest priority is assigned to SEAMAP participants.

Requested SEAMAP data were used for a multitude of purposes in 2024:

- 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;
- Evaluating and plotting the size of the hypoxic (Dead Zone) area off of Louisiana;
- Assessing shrimp and groundfish abundance and distribution and their relationship to such environmental parameters as temperature, salinity, and dissolved oxygen; and
- Identifying environmental parameters associated with concentrations of larval finfish.

Real-time Data

A major function of the SEAMAP Information System is the processing of catch data from the Summer Shrimp/Groundfish Survey as near-real-time data. Data were transmitted weekly to the GSMFC for inclusion. Plots of station locations and catch rates of shrimp, squid and dominant finfish species were prepared, edited, and processed by GSMFC for weekly distribution to management agencies, fishermen, processors and researchers. SEAMAP real-time data plots were produced during the 2024 Summer Shrimp/Groundfish Survey. Six weekly mailings were produced and distributed to approximately 90 interested individuals. These plots were also available through the SEAMAP web page.

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 Executive Director.

Personnel associated with SEAMAP program management include the Coordinator, Data Manager, SEAMAP Archiving Center Curator, SIPAC Curator and the Program Monitor from NOAA Fisheries-Pascagoula Laboratory.

Planning

Major SEAMAP-Gulf Subcommittee meetings were held in October 2023 and March 2024. All meetings included participation by various work group leaders, the Coordinator, the Program Monitor, and other GSMFC staff. Representatives from the Gulf program also met with the South Atlantic and Caribbean representatives at the March 2024 meeting to discuss respective program needs and priorities for FY2024.

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

2024. 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.

Information Dissemination

The following documents were published and distributed during this reporting period:

- *SEAMAP Subcommittee Report to the GSMFC Technical Coordinating Committee - October 1, 2022 to September 30, 2023.* A detailed summary of program accomplishments, emphasizing survey design, material collected data dissemination, budget information, and future survey activities.
- *Joint Annual Report of the SEAMAP Program - October 1, 2022 to September 30, 2023.* A summary of FY2023 activities and proposed FY2024 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.

Proposed 2025 Activities

Preliminary 2025 SEAMAP-Gulf budget allocations are shown in Table 3. Last year, total program allocations for all three SEAMAP components, Gulf, South Atlantic and Caribbean, were approximately \$6.38 million. At the July meeting, the SEAMAP components based their allocations for 2024 on level funding. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be \$2,786,639. Proposed FY2025 activities for all Gulf participants are shown in Table 4.

FY2024 Financial Report

Total allocations for FY2024 program administration were \$320,000. 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, 2024.

TABLE 1. SEAMAP REPRESENTATIVES FOR FY2024

Ted Switzer, Chairman
Florida Fish and Wildlife Conservation Commission
Florida Fish and Wildlife Research Institute

John Mareska
Alabama Department of Conservation and Natural Resources

Zach Zuckerman
Louisiana Department of Wildlife and Fisheries

Jill Hendon
University of Southern Mississippi
Gulf Coast Research Laboratory

Fernando Martinez-Andrade
Texas Parks and Wildlife Department

Adam Pollack
NOAA Fisheries
Pascagoula Laboratory

John Froeschke (non-voting)
Gulf of Mexico Fishery Management Council

TABLE 2. SEAMAP WORK GROUP MEMBERS FOR FY2024

DATA COORDINATING WORK GROUP

Michael Brochard
SEAMAP Data Manager
Gulf States Marine Fisheries Commission

Jill Hendon
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Gulf Coast Research Laboratory

David Hanisko
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Pascagoula Laboratory

Michael Harden
LA Department of Wildlife and Fisheries

Megan Schrandt
Florida Fish and Wildlife Conservation
Commission

ENVIRONMENTAL DATA WORK GROUP

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Pascagoula Laboratory

Jason Herrmann
Alabama Department of Conservation and
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Jill Hendon
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Alexis Ballinger
Texas Parks and Wildlife Department

PLANKTON WORK GROUP

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Fisheries

Paul Larson
Florida Fish and Wildlife Conservation
Commission

Janessa Fletcher
Florida Fish and Wildlife Conservation
Commission

Jill Hendon
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Gulf Coast Research Laboratory

Jason Herrmann
Alabama Department of Conservation
and Natural Resources

Sara LeCroy, Curator
SEAMAP Invertebrate Plankton
Archiving Center
University of Southern Mississippi/Gulf
Coast Research Laboratory

Mark Benfield
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Glenn Zapfe
NOAA Fisheries
Pascagoula Laboratory

SHRIMP/GROUNDFISH WORK GROUP

Evan Anderson
National Marine Fisheries Service
Pascagoula Laboratory

Fernando Martinez-Andrade
Texas Parks and Wildlife Department

Suzy Delaune
Louisiana Department of Wildlife and
Fisheries

Lillian Collins
University of Southern Mississippi
Gulf Coast Research Laboratory

Jessica Marchant
Alabama Department of Conservation and
Natural Resources

Ryan Jones
FWC/Florida Fish and Wildlife
Research Institute

LOGLINE WORK GROUP

Ana Osowski
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Christine Jensen
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Angie Hoover
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Gulf Coast Research Laboratory

Robert Boothe
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Trey Driggers
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Pascagoula Laboratory

Brent Winner
FWC/Florida Fish and Wildlife
Research Institute

REEF FISH VIDEO WORK GROUP

Mandy Tyler-Jedlund
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Research Institute

Zach Zuckerman
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Fisheries

Tiffany Weidner
University of Southern Mississippi
Gulf Coast Research Laboratory

Darin Topping
Texas Parks and Wildlife Department

Eric Gigli
Mississippi Department of Marine
Resources

Craig Newton
ADCNR/Marine Resources Division

Matthew Campbell
NOAA Fisheries
Pascagoula Laboratory

HABITAT MAPPING WORK GROUP

Sean Kennan
FWC/Florida Fish and Wildlife
Research Institute

Lindsey George
Texas Parks and Wildlife Department

Paul Grammer
University of Southern Mississippi
Gulf Coast Research Laboratory

Russell Rigby
ADCNR/Marine Resources Division

Clint Edds
Louisiana Department of Wildlife and
Fisheries

Isabella Masarik
NOAA Fisheries
Pascagoula

TABLE 3. PRELIMINARY 2025 PROGRAMMATIC BUDGET

	FY2025 Funding
GSMFC	\$584,746
Alabama	\$150,000
Florida	\$725,000
Louisiana	\$543,400
Mississippi	\$589,747
Texas	\$193,746
Total	\$2,786,639

TABLE 4. PROPOSED SEAMAP-GULF ACTIVITIES, 2025

	Fall	Winter	Spring	Summer
Resource Surveys:				
Spring Plankton Survey			X	
Shrimp/Groundfish Surveys	X			X
Fall Plankton Survey	X			
Bottom Longline Survey	X		X	X
Reef Fish Survey	X		X	X
Information Operations:				
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