

ANNUAL REPORT

TO THE

TECHNICAL COORDINATING COMMITTEE

GULF STATES MARINE FISHERIES COMMISSION

OCTOBER 1, 2019 TO SEPTEMBER 30, 2020

SEAMAP Subcommittee

Ted Switzer, Chairman

Jeffrey K. Rester

SEAMAP Coordinator

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GSMFC No: 299

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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 1985-2020 (October 1 through September 30). State and Gulf States Marine Fisheries Commission (GSMFC) funding allocations for FY1985-FY2020 were handled through State/Federal cooperative agreements, administered by SERO and the Southeast Fisheries Science Center (SEFSC), NOAA Fisheries.

In FY2020, SEAMAP operations continued for the thirty-ninth consecutive year. SEAMAP resource surveys included the Fall Plankton Survey, Fall Shrimp/Groundfish Survey, Spring Plankton Survey, Summer Shrimp/Groundfish Survey, Reef Fish Survey, Bottom Longline Survey, Vertical Line Survey, and plankton and environmental data surveys. Other FY2020 activities included SEAMAP information services and program management.

This report is the thirty-seventh 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 FY2020 and proposed SEAMAP activities for FY2021.

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

FY2020 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 22, 2019 from off southwest Florida to the U.S.-Mexican border. NOAA Fisheries, Florida, Alabama,

Mississippi, and Louisiana sampled three hundred five 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.

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. 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. COVID-19 impacted sampling for all partners. Alabama was able to sample during all three seasons and completed 11 stations this year. Mississippi was not able to sample during the Spring season, but did sample 25 stations during the Summer and Fall seasons. Louisiana was able to sample 2 stations during the Spring, 6 in the Summer, and 15 in the Fall. Texas was not able to sample any stations during 2020.

Vertical Line Survey

In FY2020, Texas, Louisiana, and Alabama conducted vertical line sampling for reef fish, but at a reduced level due to COVID-19 impacts. Approximately 70 stations were sampled from April through October. The Vertical Line Survey uses three bandit reels that are outfitted with ten circle hooks (8/0, 11/0 or 15/0). Each has only one hook size. The bandit reels deploy the gear simultaneously on or near a reef structure and, once locked in at depth, are allowed to fish for 5 minutes. All bandit reels then retrieve the lines simultaneously. Catch data are collected once the lines are onboard. Environmental data is collected upon completion of fishing at each station.

The Vertical Line Survey design divides the Gulf offshore waters between 10 and 150m into 150x150m grid blocks. Unknown habitat, known natural reef (hard bottom), presumed reef either natural or artificial, oil/gas platforms, and artificial reefs were the five habitat classifications developed by the SEAMAP Subcommittee. Each 150x150m grid block is assigned a habitat classification based upon several different datasets used to develop the sampling universe. A grid block can be classified as more than one habitat type if it has more than one habitat located within it.

For the station selection process, the total amount of habitat within the three depth zones (10-20m, 20-40m, and 40-150m) is computed. The percentage of area covered by each depth zone determines the percentage of the total stations that will be sampled within each depth zone (i.e. if a depth zone contains 40% of the total area, 40% of the total stations will be assigned to that depth zone). The total area of each habitat classification is calculated within each depth stratum. The total of each habitat classification, excluding unknown habitat, is then used to calculate the percentage of habitats within the depth zone. This percentage is used to determine how many stations are assigned to each habitat type within the depth zone. Stations are randomly selected based upon the habitat classification percentages within each depth zone.

Reef Fish Survey

The primary purpose of this survey was to assess relative abundance and compute population estimates of reef fish found on natural reef fish habitats in the Gulf of Mexico. Video stereo cameras were used during the survey since they enabled the measurement of length frequencies. Each stereo camera contained paired black-and-white Videre stereo cameras along with a color mpeg camera in a cylindrical pressure housing. Four of these were mounted in a camera array and were positioned orthogonally with the center of the camera mounted 51 cm above the bottom of the array. The camera array was baited with squid. The camera array was allowed to soak on the bottom for 30 minutes, and the fish trap soaked for one hour. NOAA Fisheries did not participate in the Reef Fish Survey this year due to impacts from COVID-19. Florida was able to participate and sampled approximately 1,000 stations in the eastern Gulf of Mexico.

Cancelled SEAMAP Sampling Activities

The SEAMAP Spring Plankton Survey, the Summer Shrimp/Groundfish Survey, and the Fall Plankton Survey were all cancelled in 2020 due to COVID-19.

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 1982-2019 have been entered into the system and data from the 2020 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 2020:

- 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;
- Identifying environmental parameters associated with concentrations of larval finfish;
- Assessing the potential impact the Deepwater Horizon oil spill on marine fish stocks; and
- Compiling the 2020 SEAMAP Environmental and Biological Atlas.

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 2019 and March 2020 in conjunction with the Annual Meeting of the GSMFC. 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 in July 2020 to discuss respective program needs and priorities for FY2021.

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 2020. 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, 2018 to September 30, 2019.* 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, 2018 to September 30, 2019.* A summary of FY2019 activities and proposed FY2020 events for the SEAMAP-Gulf, South Atlantic, and Caribbean Programs.

Proposed 2021 Activities

Preliminary 2021 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 \$4.79 million. At the July meeting, the SEAMAP components based their allocations for 2021 on level funding. At this level, the share to be allocated for SEAMAP-Gulf activities (including GSMFC) will be \$1,981,466. Proposed FY2021 activities for all Gulf participants are shown in Table 4.

FY2020 Financial Report

Total allocations for FY2020 program administration were \$428,653. 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, 2020.

TABLE 1.

SEAMAP REPRESENTATIVES FOR FY2020

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

John Mareska
Alabama Department of Conservation and Natural Resources

Chloe Dean
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 FY2020

DATA COORDINATING WORK GROUP

Lloyd Kirk, Leader
SEAMAP Data Manager
Gulf States Marine Fisheries Commission

Mike Murphy
Florida Fish and Wildlife Conservation
Commission

David Hanisko
NOAA Fisheries
Pascagoula Laboratory

John Anderson
University of Southern Mississippi
Gulf Coast Research Laboratory

Charles Weber
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Michael Harden
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ENVIRONMENTAL DATA WORK GROUP

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Alabama Department of Conservation and
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NOAA Fisheries
Pascagoula Laboratory

Mike Stahl
Texas Parks and Wildlife Department

PLANKTON WORK GROUP

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Fisheries

Joan Herrera
Florida Fish and Wildlife Conservation
Commission

Tammy Cullins
Florida Fish and Wildlife Conservation
Commission

Jason Tilley
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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
Louisiana State University

Glenn Zapfe
NOAA Fisheries
Pascagoula Laboratory

SHRIMP/GROUNDFISH WORK GROUP

Adam Pollock
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Pascagoula Laboratory

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Chloé Dean
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VERTICAL LINE WORK GROUP

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Matthew Campbell
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HABITAT MAPPING WORK GROUP

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Research Institute

Jason Tilley
University of Southern Mississippi
Gulf Coast Research Laboratory

Brett Falterman
Louisiana Department of Wildlife and
Fisheries

Lindsey George
Texas Parks and Wildlife Department

Russell Rigby
ADCNR/Marine Resources Division

Brandi Noble
NOAA Fisheries
Pascagoula

TABLE 3.
PRELIMINARY 2021 PROGRAMMATIC BUDGET

	FY2020 Funding
GSMFC	\$428,653
Alabama	\$140,000
Florida	\$351,000
Louisiana	\$414,613
Mississippi	\$447,000
Texas	\$200,200
Total	\$1,981,466

TABLE 4.
PROPOSED SEAMAP-GULF ACTIVITIES, 2021

	Fall	Winter	Spring	Summer
Resource Surveys:				
Spring Plankton Survey			X	
Shrimp/Groundfish Surveys	X			X
Fall Plankton Survey	X			
Plankton & Environmental Data Surveys	X	X	X	X
Bottom Longline Surveys	X		X	X
Vertical Longline Surveys			X	X
Information Operations:				
Biological and Environmental Atlas				X
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