

# 2016 FALL CRUISE REPORT

SEAMAP Shrimp/Groundfish Survey  
*Penaeid* Shrimp  
Benthic Fauna

*R/V Pelican*

Louisiana Department of Wildlife and Fisheries  
Fisheries Research Laboratory  
195 Ludwig Annex  
Grand Isle, LA 70358



**Chief Scientist  
Jeremy Miller**

SURVEY PERIOD: 10/25/2016 – 10/26/2016

AREA OF OPERATION: Gulf of Mexico (latitudes 28.72°-29.37°, longitudes 89.77°-91.98°, depths 3-27m)

## INTRODUCTION

The Southeast Area Monitoring and Assessment Program (SEAMAP) Shrimp/Groundfish trawl surveys are conducted throughout the Gulf of Mexico to provide fishery-independent monitoring and assessment information on shrimp and groundfish assemblages associated with low relief soft-bottom habitats. These data are essential to the management of the fisheries resources in the Gulf of Mexico. Louisiana Department of Wildlife and Fisheries (LDWF), as well as SEAMAP state partners, sample in conjunction with the National Marine Fisheries Service (NMFS) to provide a Gulf-wide trawl survey each summer and fall.

## OBJECTIVES

1. Utilize the standard SEAMAP 42ft trawl to characterize shrimp and groundfish assemblages associated with low relief soft-bottom habitats.
2. To increase understanding of the environment associated with shrimp and groundfish assemblages by collecting environmental data, and water column profiles at each shrimp/groundfish station.
3. To provide information on the occurrence, abundance, and geographical distribution of eggs, larvae, and juvenile fishes and invertebrates by sampling plankton stations historically sampled by Louisiana during groundfish cruises (summer cruise only).
4. To increase understanding of the environment associated with pelagic eggs, larvae, and juvenile fishes and invertebrates by collecting environmental data, water column profiles, and chlorophyll measurements with each plankton collection (summer cruise only).
5. To collect detailed observations (i.e. identification, number, volume, bell diameter) of net-caught jellyfish and ctenophores to assess these communities in relationship to plankton catches (summer cruise only).
6. To collect volumetric measurements of net caught *Sargassum* spp. to assess species living in and around *Sargassum* spp. habitats (summer cruise only).

## METHODS

SEAMAP Shrimp/Groundfish trawl sampling consisted of pulling a 42ft, 1-5/8 inch stretched mesh, trawl at each selected station. The trawl towline was set at a 4:1 cable length/water depth ratio. Trawl towing was conducted at or near 2.5 knots for 30 minutes after the net was fully deployed. Trawling was conducted both day and night. For trawl catches less than 22.7 kilograms (kg), the total weight of the catch was processed. For collections greater than 22.7 kg, samples were subsampled by randomly removing a percentage of fishes from the total catch. The catch was processed following procedures per the SEAMAP Operations Manual guidelines.

Environmental data were collected in conjunction with each station. A full water column profile was recorded with a Seabird CTD (SBE 9plus or SBE 19plus). Water parameters measured included temperature, dissolved oxygen (DO), salinity, and conductivity. In the event a DO reading fell below 2.0 Mg/L, the DO was verified with a YSI.

Plankton sampling (summer cruise only) was conducted at each station using two 60cm, 0.335µm-mesh bongo nets and 1m x 2m, 0.950µm-mesh neuston net. Oblique bongo tows were conducted beginning at the surface to near-bottom depths and then back to the surface at each station. The established maximum depth of tows is 200 meters. A mechanical flowmeter secured off-center in each bongo frame was used to record the volume of water

filtered. The neuston gear was towed for 10 minutes with the frame half-submerged at a depth of 0.5 meters. Jellyfish and ctenophores present in bongo and neuston samples were removed from the sample, rinsed, identified, counted, measured (bell diameter in mm), and discarded. *Sargassum* spp. were also removed from the collection, rinsed of all organisms, measured for volume, and discarded.

Samples collected by the right bongo were initially preserved in 10% formalin and then transferred to 95% ethanol after 36 hours. Left bongo samples and neuston samples were initially preserved in 95% ethanol and then transferred to fresh 95% ethanol after 24 hours. These samples were transferred at sea and then transported back to the LDWF Fisheries Research Laboratory (FRL) for preparation and shipment. Sample workup and data processing was conducted in accordance with the NMFS SEAMAP Operations Manual guidelines. Samples were then delivered to the NMFS Pascagoula, MS lab. NMFS archived the left bongo samples at the SEAMAP Invertebrate Plankton Archiving Center (SIPAC) and shipped the right bongo and neuston samples to the Polish Sorting and Identification Center.

During plankton stations only, water was collected at surface and maximum water depths with a Seabird SBE32 water sampler rosette and then filtered onboard for later spectroscopic analysis for chlorophyll concentration at the LDWF FRL.

Data were coded according to the NMFS SEAMAP Operations Manual guidelines and entered into the LDWF SEAMAP data entry system. Data were then submitted to the Gulf States Marine Fisheries Commission.

## SURVEY DESIGN

A probability based sample design is utilized to select groundfish trawling stations. All Gulf of Mexico waters from 2 to 60 fathoms ranging from Brownsville, TX to the Florida Keys are included in the groundfish sampling universe. NMFS has set the target for total number of stations sampled per survey at roughly 300 stations. Sampling stations are proportionally allocated among NMFS Gulf Coast Shrimp Statistical Zones. Each Zone has been divided into two strata based on water depth (<20 fathoms) and (>20 to 60 fathoms). The number of stations selected to sample in each of the Zones is proportional to the surface area within each Zone/depth strata to the total surface area. Sampling stations within each stratum are randomly selected. This selection process ensures all areas within the sampling universe have equal probability of being selected.

Currently, SEAMAP partners, including Louisiana, participate in a summer and fall shrimp/groundfish trawl survey. NMFS provides GSMFC a list of sampling stations, who in turn, work with state SEAMAP partners to select stations that each state can complete. NMFS vessels sample remaining stations. Louisiana chooses inshore stations west of the Mississippi River to the Texas border for sampling. All data go to GSMFC for management and storage. These data are available to the scientific community upon request.

## RESULTS

### Fall Shrimp/Groundfish Survey

10/25/2016 – 10/26/2016

Vessel: R/V *Pelican*

Louisiana sampled 12 shrimp/groundfish stations (Table 1) in Louisiana's territorial sea and the adjacent EEZ (latitudes 28.72°-29.37°, longitudes 89.77°-91.98°, depths 3-27m) (Figure 1) aboard the R/V *Pelican*. Biological and environmental data were entered into the SEAMAP data system.

## DEVIATIONS

Cruise was completed with no deviation per NOAA protocol.

## SURVEY PARTICIPANTS

Jeremy Miller	Chief Scientist	FRL, Grand Isle, LA
Michaela Mayers	Biologist	Baton Rouge, LA
Rebecca Hillebrandt	Biologist	Baton Rouge, LA
Robert Booth	Biologist	New Orleans, LA
Chloe Roberts	Biologist	New Orleans, LA
Paul McLaughlin	Biologist	FRL, Grand Isle, LA
Clint Edds	Biologist	FRL, Grand Isle, LA
Chris Levron	Biologist	FRL, Grand Isle, LA
Chloe Dean	Biologist	FRL, Grand Isle, LA
Charles Alexander	Biological Technician	FRL, Grand Isle, LA

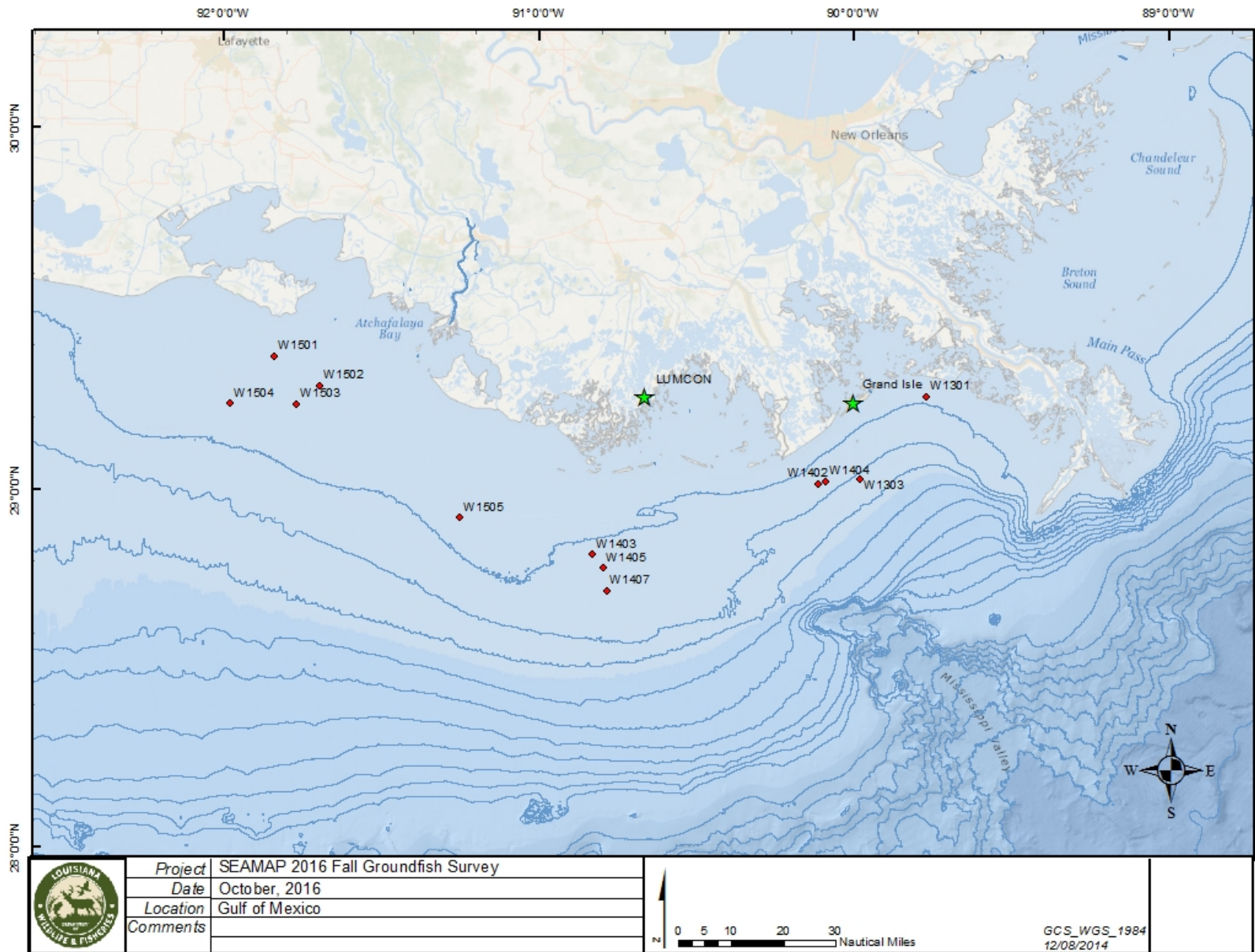


Figure 1. 2016 Fall Shrimp/Groundfish Survey sampling locations

Table 1. 2016 Fall Shrimp/Groundfish Survey Station Details

STA#	PASC#	DATE		LAT	LONG	STAT ZONE	MAX DEPTH(m)	SALINITY			TEMPERATURE			DO			FIN CATCH	CRUS CATCH	OTHR CATCH	MIN FISH
		MM/DD/YYYY	GMT TIME					SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX				
W1402	35001	10/25/2016	1040	29°0.75	90°6.77	14	19.1	27.61	29.12	29.96	24.97	25.68	26.19	7.46	6.80	6.28	99.595	9.8083	2.5966	30
W1301	35002	10/25/2016	1400	29°15.31	89°46.13	13	11.0	26.51	26.75	30.67	24.21	24.47	27.29	7.68	7.01	4.92	2.379	0.121	37.306	30
W1303	35003	10/25/2016	1659	29°1.65	89°58.77	13	24.7	27.22	29.97	34.57	24.85	25.93	28.05	7.06	6.26	2.48	44.442	0.6791	3.7585	30
W1404	35004	10/25/2016	1841	29°1.21	90°5.34	14	21.7	26.58	30.28	32.26	24.76	26.04	26.72	9.07	6.28	6.07	15.176	3.016	0.299	30
W1407	35005	10/26/2016	0025	28°42.97	90°47.14	14	18.9	34.72	34.72	34.75	26.35	26.35	26.35	6.3	6.28	6.12	126.798	5.8672	0.059	30
W1405	35006	10/26/2016	0218	28°46.76	90°47.79	14	19.6	31.95	33.52	34.56	25.94	26.29	26.45	7.24	6.52	5.90	149.449	2.0296	0.894	30
W1403	35007	10/26/2016	0401	28°49.06	90°49.84	14	22.6	30.00	31.25	33.8	25.32	25.88	26.6	7.57	6.27	5.43	162.543	2.7078	2.2768	30
W1505	35008	10/26/2016	0756	28°55.15	91°15.12	15	7.8	28.90	28.98	28.98	24.37	24.53	24.53	7.11	7.12	7.12	6.358	0.1825	20.228	30
W1503	35009	10/26/2016	1252	29°14.05	91°46.16	15	7.3	27.75	27.75	27.75	24.18	24.17	24.16	6.76	6.75	6.76	6.952	0.014	32.452	30
W1502	35010	10/26/2016	1410	29°17.1	91°41.74	15	5.5	23.75	25.02	26.15	22.84	23.2	23.61	7.15	6.82	6.47	29.171	0.1426	7.5774	30
W1501	35011	10/26/2016	1601	29°22.06	91°50.41	15	3.0	20.20	NA	21.91	22.72	NA	22.74	9.16	NA	8.31	18.412	0.585	9.409	30
W1504	35012	10/26/2016	1757	29°14.19	91°58.87	15	9.1	27.71	27.87	28.84	24.35	24.37	24.69	7.05	7.00	6.69	6.552	0.052	2.835	30