

2014 FALL CRUISE REPORT

SEAMAP Shrimp/Groundfish Survey
Penaeid Shrimp
Benthic Fauna

RV Pelican

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



**Chief Scientist
Suzy Delaune**

SURVEY PERIOD: 10/06/14 – 10/10/14

AREA OF OPERATION: Gulf of Mexico (latitudes 28.49°-29.66°, longitudes 89.49°-93.85°, depths 4-39m)

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, water column profiles, and chlorophyll measurements 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.
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.
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.
6. To collect volumetric measurements of net caught *Sargassum* spp. to assess species living in and around *Sargassum* spp. habitats.

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.

Plankton sampling was conducted at each station using two 60cm, 0.335 μ m-mesh bongo nets and 1m x 2m, 0.950 μ m-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.

Environmental data were collected in conjunction with each plankton 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. Water was collected at the surface, mid, 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

October: 10/06/14 – 10/10/14

Vessel: RV *Pelican*

Louisiana sampled 26 shrimp/groundfish stations (Table 1) in Louisiana's territorial sea and the adjacent EEZ (latitudes 28.70°-29.66°, longitudes 89.67°-93.85°, depths 4-39m) (Figure 1) aboard the RV *Pelican*. Twenty-four plankton samples (jars) were successfully collected from the seven fixed historic plankton stations (Table 1, Table 2) (latitudes 28.49°-29.00°, longitudes 89.49°-91.50°) (Figure 1). Biological and environmental data were entered into the SEAMAP data system. Plankton samples collected during this cruise were transferred to the NMFS Pascagoula Laboratory on October 20, 2014 for transshipment to the Polish Sorting and Identification Center.

DEVIATIONS

During bongo deployment at station B188, the current pushed the net under the boat therefore the boat had to turn to free the net. The nets tilted and stayed in the water for a longer period of time and the left sample was full of mud. The sample was discarded and was not attempted again because there was a viable right bongo sample.

Stations W1501 and W1502 have only two readings for the CTD profile (surface and bottom) and one water sample for chlorophyll analysis because the depth was too shallow to drop the CTD any deeper to get mid-range readings.

SURVEY PARTICIPANTS

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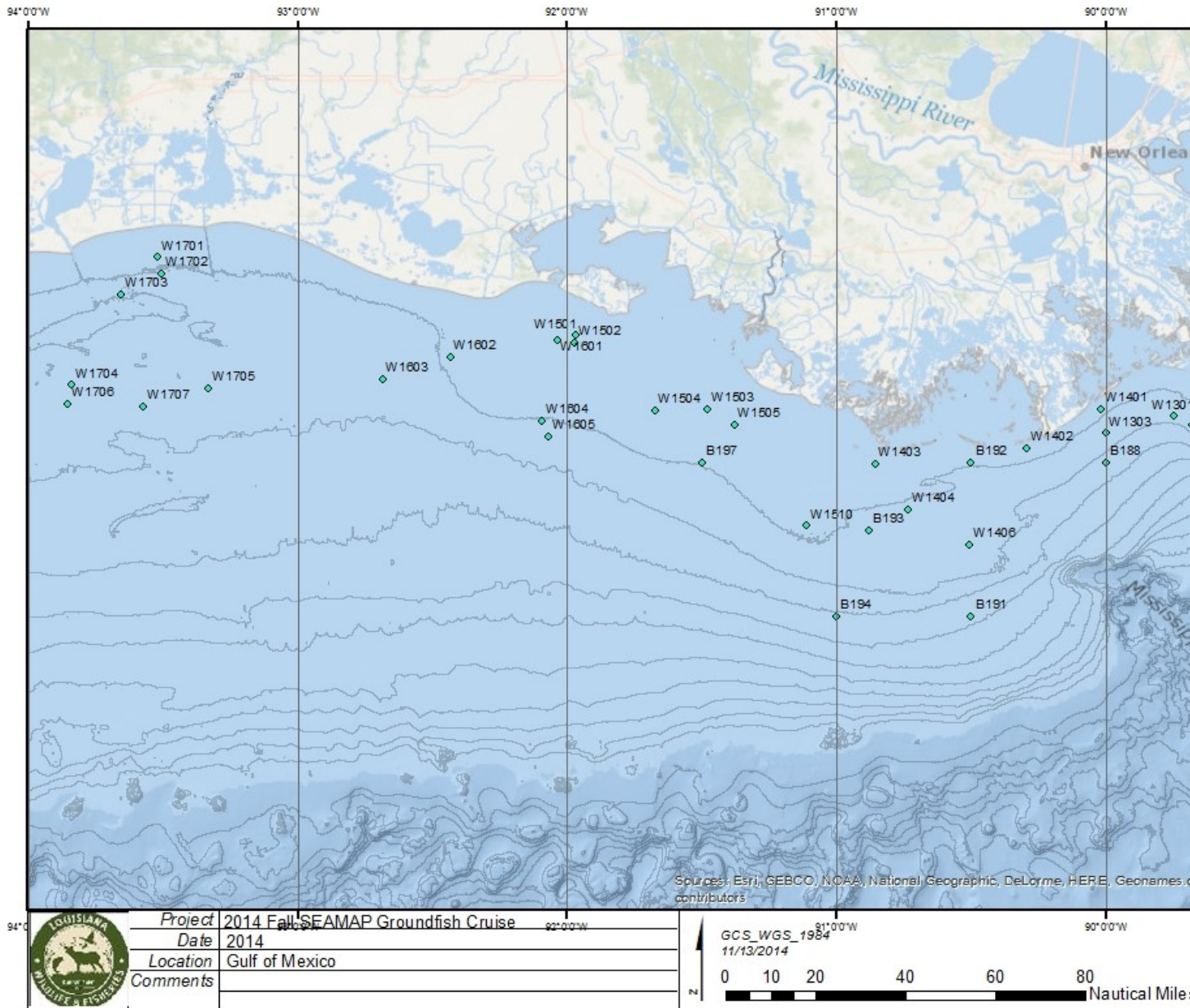


Figure 1. 2014 Fall Shrimp/Groundfish Survey sampling locations

Table 1. 2014 Fall Shrimp/Groundfish Survey station details

STA #	PASC #	DATE	GMT TIME	LAT	LONG	STAT ZONE	MAX DEPTH (m)	SALINITY			TEMPERATURE			DO			FIN CATCH	CRUS CATCH	OTHR CATCH	MIN FISH		
		MM/DD/YYYY						SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX						
B192	35001	10/6/2014	0815	29	00.00	90	30.01	14	11.5	28.32	28.47	30.36	26.21	26.33	27.33	7.44	7.38	6.49	0	0	0	P
B187	35007	10/6/2014	2100	29	00.06	89	29.91	13	16.7	27.84	27.96	34.56	26.35	26.25	28.34	8.55	8.32	4.00	0	0	0	P
B188	35008	10/7/2014	0035	28	59.99	89	59.98	13	24.5	29.5	29.75	34.72	26.76	27.14	28.30	7.69	6.64	3.64	0	0	0	P
B191	35011	10/7/2014	1128	28	29.98	90	30.01	14	39.0	33.06	35.61	36.30	27.38	28.02	28.17	6.92	6.05	5.66	0	0	0	P
B194	35012	10/7/2014	1516	28	30.00	91	00.03	15	34.0	35.27	35.35	35.82	27.67	27.70	27.75	6.43	6.29	6.05	0	0	0	P
B193	35013	10/7/2014	1757	28	46.82	90	52.79	14	16.6	32.34	32.45	34.74	27.27	26.92	27.88	7.46	7.43	5.83	0	0	0	P
B197	35015	10/7/2014	2354	28	59.99	91	30.00	15	11.3	31.34	31.34	31.76	27.01	27.01	26.77	6.94	6.92	6.32	0	0	0	P
W1402	35002	10/6/2014	1048	29	02.74	90	17.62	14	11.6	28.28	28.28	28.28	26.25	26.24	26.26	7.45	7.47	7.44	154.117	0.74	41.643	30
W1401	35003	10/6/2014	1340	29	10.39	90	01.00	14	12.0	28.34	28.34	28.81	26.03	26.03	26.40	7.31	7.34	6.06	50.232	0.792	47.976	30
W1303	35004	10/6/2014	1506	29	05.65	90	00.08	14	18.0	28.44	28.44	34.75	26.36	26.34	28.53	8.11	8.08	1.79	2.815	0.005	2.562	30
W1301	35005	10/6/2014	1738	29	08.97	89	44.82	13	21.0	28.08	28.09	34.62	26.41	26.25	29.01	8.04	7.88	2.47	90.667	0.702	0.131	30
W1302	35006	10/6/2014	1852	29	07.28	89	40.72	13	22.0	27.85	28.68	34.65	26.57	26.84	28.87	8.47	7.69	3.57	35.702	1.2385	0.559	30
W1404	35009	10/7/2014	0626	28	50.82	90	44.06	14	18.5	32.35	32.39	34.72	26.85	26.87	28.16	7.20	7.21	5.47	7.23	1.107	1.71	30
W1406	35010	10/7/2014	0901	28	43.88	90	30.37	14	19.0	31.97	31.97	35.18	27.03	27.04	28.28	7.34	7.37	5.37	35.334	0.40642	0	30
W1510	35014	10/7/2014	2041	28	47.63	91	06.64	15	10.4	32.69	32.73	32.99	27.45	27.19	26.88	7.02	7.11	6.97	2.177	0	261.823	30
W1605	35016	10/8/2014	0408	29	05.07	92	03.99	16	16.0	32.90	32.90	32.98	27.07	27.06	27.04	6.43	6.45	6.20	85.81	6.13939	0.75	30
W1604	35017	10/8/2014	0527	29	08.13	92	05.48	16	13.0	32.51	32.51	32.50	26.97	26.95	26.85	6.46	6.48	6.13	88.42	4.74455	12.811	30
W1603	35018	10/8/2014	1009	29	16.19	92	41.10	16	18.5	29.89	33.54	34.03	26.54	28.18	27.34	6.29	4.63	5.79	73.938	4.20196	1.198	30
W1705	35019	10/8/2014	1432	29	14.42	93	19.76	17	16.0	32.66	32.66	32.76	26.92	26.91	26.93	6.39	6.37	5.97	20.122	0.442	0.208	30
W1707	35020	10/8/2014	1645	29	10.88	93	34.25	17	18.5	33.19	33.28	33.49	27.07	27.02	26.99	6.45	6.42	5.69	85.555	1.94468	0	30
W1706	35021	10/8/2014	1903	29	11.30	93	51.17	17	17.0	33.21	33.21	33.51	27.21	26.86	27.02	6.44	6.36	5.41	24.735	0.0215	0.032	30
W1704	35022	10/8/2014	2008	29	15.01	93	50.18	17	16.4	33.20	33.15	33.16	27.70	26.92	26.85	6.58	6.41	6.01	111.582	0.25148	0.166	30
W1703	35023	10/8/2014	2312	29	32.57	93	39.19	17	12.2	29.19	29.57	31.02	27.31	26.72	27.27	6.70	6.01	3.15	56.053	1.09527	0.288	30
W1701	35024	10/9/2014	0104	29	39.77	93	31.13	17	10.9	27.79	27.98	28.49	26.61	26.57	26.53	6.55	6.34	5.32	18.933	2.627	0.087	30
W1702	35025	10/9/2014	0220	29	36.60	93	30.20	17	12.4	29.63	29.64	30.30	26.92	26.94	26.70	6.04	6.09	4.96	4.473	1.878	0.007	30
W1602	35026	10/9/2014	0936	29	20.41	92	25.95	16	10.2	27.89	28.40	31.41	26.57	26.49	26.77	6.86	5.90	4.08	10.434	1.572	0.23	30
W1601	35027	10/9/2014	1318	29	23.80	92	02.18	16	5.0	15.62	15.72	15.76	26.24	26.24	26.23	8.91	8.85	8.66	8.029	1.729	0.369	30
W1501	35028	10/9/2014	1440	29	24.61	91	58.13	15	4.0	13.93		13.93	26.45		26.44	9.27		9.35	1.832	0.675	0.05	30
W1502	35029	10/9/2014	1530	29	23.33	91	58.19	15	4.2	13.66		13.65	26.40		26.41	9.05		9.06	3.86	2.047	0	30
W1504	35030	10/9/2014	1840	29	10.11	91	40.48	15	7.6	31.58	31.58	31.58	27.37	27.34	27.32	6.51	6.55	6.52	0.692	0.04	78.901	30
W1503	35031	10/9/2014	2025	29	10.29	91	28.72	15	6.5	30.33	30.32	30.32	27.22	27.14	26.84	7.26	7.21	6.79	6.774	1.292	0.665	30
W1505	35032	10/9/2014	2141	29	07.23	91	22.70	15	7.5	29.90	29.87	29.82	27.14	26.76	26.40	7.12	6.83	6.46	10.364	0.188	0.128	30
W1403	35033	10/10/2014	0140	28	59.63	90	51.38	14	8.0	29.12	29.12	29.12	27.29	27.28	27.28	7.80	7.80	7.79	37.679	0.40221	6.229	30

Table 2. Summary of plankton samples (number of jars collected - 24) collected during the 2014 Fall Shrimp/Groundfish survey

SEAMAP Station Number	Pascagoula Station Number	Date	Latitude	Longitude	Gear	Preservative	Sample Number
B192	35001	10/6/2014	29° 00.08	90° 30.10	Bongo Left	95 % ETOH	48600
B192	35001	10/6/2014	29° 00.08	90° 30.10	Bongo Right	10% Form	48601
B192	35001	10/6/2014	29° 00.04	90° 29.69	Neuston	95 % ETOH	48602
B187	35007	10/6/2014	29° 00.11	89° 29.97	Bongo Left	95 % ETOH	48603
B187	35007	10/6/2014	29° 00.11	89° 29.97	Bongo Right	10% Form	48604
B187	35007	10/6/2014	29° 00.10	89° 29.95	Neuston	95 % ETOH	48605
B188	35008	10/7/2014	28° 59.87	90° 00.01	Bongo Left	95 % ETOH	-----
B188	35008	10/7/2014	28° 59.87	90° 00.01	Bongo Right	10% Form	48606
B188	35008	10/7/2014	29° 00.20	90° 00.04	Neuston	95 % ETOH	48607
B191	35011	10/7/2014	28° 29.95	90° 30.18	Bongo Left	95 % ETOH	48608
B191	35011	10/7/2014	28° 29.95	90° 30.18	Bongo Right	10% Form	48609
B191	35011	10/7/2014	28° 29.93	90° 30.35	Neuston	95 % ETOH	48610
B194	35012	10/7/2014	28° 30.08	91° 00.00	Bongo Left	95 % ETOH	48611
B194	35012	10/7/2014	28° 30.08	91° 00.00	Bongo Right	10% Form	48612
B194	35012	10/7/2014	28° 30.03	91° 00.63	Neuston	95 % ETOH	48613
B193	35013	10/7/2014	28° 47.21	90° 52.78	Bongo Left	95 % ETOH	48614
B193	35013	10/7/2014	28° 47.21	90° 52.78	Bongo Right	10% Form	48615
B193	35013	10/7/2014	28° 46.97	90° 52.78	Neuston	95 % ETOH	48616
B197	35015	10/7/2014	29° 00.00	91° 30.22	Bongo Left	95 % ETOH	48617
B197	35015	10/7/2014	29° 00.00	91° 30.22	Bongo Right	10% Form	48618
B197	35015	10/7/2014	29° 00.02	91° 30.00	Neuston	95 % ETOH	48619