

Florida SEAMAP Summer 2016 Survey Cruise Report (6/8/16 – 7/2/16)
Cruise Number 171602 using the R/V Tommy Munro

Prepared by:

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Introduction

Florida shrimp and groundfish trawl surveys are conducted to provide fisheries-independent data on the distribution and abundance of fishes and macroinvertebrates in the eastern Gulf of Mexico as part of the coordinated and cost-efficient SEAMAP program. Fisheries-independent data, which are collected without the direct reliance on information provided by commercial and recreational fishers, are essential to the assessment and management of fisheries resources in Florida and the nearshore Gulf of Mexico. Data collected by these surveys will be used to improve existing single-species assessments for managed species as well as further develop an ecosystem-based approach to managing fisheries resources in the eastern Gulf of Mexico.

The long-term goal of the Florida SEAMAP trawl program is to collect a full complement of seasonal trawl samples in the eastern Gulf of Mexico encompassing NMFS statistical zones 2 – 10. Before fully implementing the Florida SEAMAP trawl program in 2010, two years of exploratory surveys were conducted to validate the feasibility of sampling these zones as well as the most appropriate season (summer or fall) within which to conduct trawl surveys. Based on a preliminary examination of data collected in 2008 and 2009, it was decided that from 2010 onward the Florida SEAMAP trawl survey will occur in summer. Although trawling in fall was logistically feasible, overall catch and species diversity was greatest in summer, and so summer surveys will likely provide the most comprehensive data set. Fall catch rates were higher for select taxa (i.e., red snapper), and so the implementation of a recurring fall Florida SEAMAP trawl survey was pursued should additional funds become available.

Objectives

1. Conduct a trawl survey to collect information on shrimp and groundfish abundance/distribution with standard SEAMAP 42ft trawls.
2. Select sampling stations from NMFS-generated universe of known bathymetric data.
3. Identify, weigh, count and measure all species according to protocols outlined in the NMFS SEAMAP Operations Manual.

4. Collect information on environmental parameters (salinity, temperature, dissolved oxygen, wind speed and direction, wave height, precipitation) in conjunction with trawl sampling.
5. Code all data according to approved NMFS SEAMAP Operations Manual guidelines, and enter data on the NMFS SEAMAP data entry system.
6. Submit data to the Gulf States Marine Fisheries Commission/NMFS Data Manager.

Methods

Beginning in 2010, a new survey design was implemented for the Gulf-wide SEAMAP trawl survey. Overall sampling effort was allocated proportionally among NMFS statistical reporting zones based on proportional availability of sampling habitat (5 – 60 fathoms). Within each NMFS zone, specific trawling sites were chosen following a simple random survey design.

At each trawl station, samples were collected using a standard 42-foot SEAMAP trawl. Trawls were towed at a speed of 3 knots for a standard duration of 30 minutes. Sample workup and data processing were conducted in accordance with the SEAMAP Operational Manual guidelines. In addition, specimens were retained to validate field identifications and provide biological material for various life-history studies (e.g., age and growth, reproduction, diet, mercury concentration). Environmental data (temperature, salinity, pH, and dissolved oxygen) were measured in association with each trawl event using a CTD.

Results

During the summer 2016 survey, Florida sampled a total of 134 stations, which included 130 trawl stations with reportable catch and 4 trawl station with zero catch due to gear damage (Table 1). Total catch weight from the trawls was 7,239.7 kg. Individual trawl catch weights ranged from 0.584 kg to 531.54 kg. There were 39,076 animals collected, including 2,280 pink shrimp, 60 red snapper, and 271 red lionfish, which occurred in 58 of the 130 stations (45% occurrence) with reportable catch. The three most abundant species collected were pinfish (n=4,800; 18% occurrence), dusky flounder (n=2,899; 78% occurrence), and slender inshore squid (n=2,746; 67% occurrence).

In addition to following standard SEAMAP sampling protocols, we collected ancillary material for various life history studies. Otoliths were removed from 511 fishes for ageing analyses, including 387 Lutjanids and 66 Serranids. In addition, 69 spines were removed from managed fishes for alternative aging techniques. Gonads were removed from 106 fish for reproductive staging and 126 fin clip or tissue samples were taken for genetic analysis. Tissue samples were collected from 215 fish for mercury analyses and 695 stomachs were removed for dietary analyses from a wide variety of managed and non-managed species. Two hundred ninety-five samples were also collected for cooperative research requests from various federal and state institutions. These samples

included whole fish for the National Marine Fisheries Service Panama City Lab, Dauphin Island of South Alabama University, University of South Florida, and the Florida Institute of Technology.

Quality Control

A total of 3,352 animals were frozen or preserved and brought back to FWRI. Of those animals 1,100 fishes were kept as representative samples and an additional 506 fishes were brought back to be further identified in the lab. In addition to fishes, 1,746 invertebrates were brought back for confirmation or identification.

Deviations

Four trawl stations were sampled and aborted due to hard bottom and/or gear damage. A total of 36 trawl stations were skipped due to boat mechanical issues. The port engine transmission broke causing the R/V Tommy Munro to stay in St. Pete for a few days while being repaired. All stations sampled were completed according to the NMFS SEAMAP protocol.

Cruise participants

Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute and Dauphin Island of South Alabama University personnel collected all samples. Sample summary and data entry were completed by Scott Stahl.

Submitted By:

Ted Switzer
SEAMAP Coordinator

Table 1. Florida SEAMAP Fall 2016 Shrimp/Groundfish Cruise Summary

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E1007	06/09/2016 13:23:34	2940.25	8725.41	61.0	30.30	2.20	1.97	0.00	0.23
E1008	06/09/2016 15:22:59	2943.19	8720.66	82.0	30.00	2.39	1.82	0.02	0.55
E1006	06/09/2016 18:54:50	2957.85	8708.87	51.0	30.00	0.58	0.34	0.00	0.25
E1004	06/09/2016 21:24:03	3008.27	8700.88	28.0	30.03	6.40	5.98	0.00	0.41
E0903	06/10/2016 0:54:01	3011.06	8631.08	28.1	30.02	16.56	14.50	0.03	2.03
E0904	06/10/2016 3:32:14	3005.48	8612.33	34.0	30.02	176.95	19.60	2.72	154.63
E0906	06/10/2016 5:26:50	3000.21	8613.24	41.4	30.02	61.37	27.44	1.66	32.28
E0909	06/10/2016 7:55:40	2953.4	8616.17	61.8	30.00	27.87	22.87	3.33	1.67
E0807	06/10/2016 11:02:54	2958.73	8558.06	33.0	30.13	6.10	4.60	0.03	1.47
E0808	06/10/2016 12:36:14	2955.44	8555.55	34.0	30.02	4.41	2.39	0.00	2.02
E0905	06/10/2016 14:22:21	2950.06	8603.22	41.0	30.02	2.03	2.03	0.00	0.00
E0907	06/10/2016 16:39:56	2941.08	8608.32	49.0	30.03	15.63	5.70	0.00	9.93
E0908	06/10/2016 19:11:28	2931.29	8600.65	57.0	30.00	4.37	4.14	0.00	0.23

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0811	06/10/2016 22:09:00	2944.33	8550.05	37.0	30.02	5.41	5.09	0.02	0.30
E0809	06/10/2016 23:58:02	2934.05	8548.24	30.6	30.08	3.62	3.59	0.01	0.02
E0812	06/11/2016 1:34:55	2925.68	8545.36	38.0	30.02	22.81	21.58	0.64	0.60
E0810	06/11/2016 5:12:17	2915.85	8517.62	27.4	30.12	20.90	14.46	3.97	2.47
E0815	06/11/2016 8:00:44	2902.1	8527.06	58.1	30.00	15.64	15.01	0.50	0.14
E0813	06/11/2016 11:07:02	2855.86	8505.25	53.0	30.02	0.72	0.48	0.05	0.20
E0816	06/11/2016 13:14:24	2847.81	8508.28	88.0	30.02	4.51	3.30	0.01	1.21
E0625	06/11/2016 15:46:23	2846.11	8451.11	50.0	30.00	9.86	4.06	0.02	5.79
E0629	06/11/2016 17:42:07	2835.18	8455.2	59.0	30.00	1.42	0.63	0.00	0.79
E0628	06/11/2016 19:34:45	2830.69	8444.46	59.0	30.00	6.79	6.49	0.03	0.26
E0627	06/11/2016 21:42:14	2831.49	8432.73	54.0	30.02	3.69	3.08	0.31	0.30
E0626	06/11/2016 23:00:15	2832.65	8431.24	51.0	30.00	11.68	10.51	1.00	0.17
E0623	06/12/2016 2:11:34	2837.68	8410.76	37.0	30.02	62.29	52.15	0.84	9.31
E0622	06/12/2016 3:52:15	2838.11	8408.4	36.0	30.02	43.07	39.48	3.20	0.39
E0624	06/12/2016 6:22:05	2825.3	8402.29	37.0	30.02	40.01	33.90	2.43	3.68

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0631	06/12/2016 11:21:49	2813.57	8435.95	73.0	30.00	7.24	7.03	0.01	0.19
E0630	06/12/2016 13:13:18	2814.74	8442.87	72.0	30.00	2.82	2.33	0.02	0.47
E0633	06/12/2016 14:59:12	2812.36	8450.93	110.0	30.03	2.46	2.05	0.00	0.41
E0632	06/12/2016 18:14:52	2802.54	8432.07	75.0	30.02	4.49	4.40	0.00	0.09
E0529	06/12/2016 20:08:01	2754.74	8432.52	100.0	30.02	5.21	4.89	0.01	0.31
E0523	06/12/2016 22:44:12	2756.86	8416.41	62.0	30.02	3.68	3.54	0.00	0.13
E0519	06/13/2016 0:35:10	2749.46	8409.04	52.0	30.05	23.60	10.94	0.58	12.08
E0522	06/13/2016 2:10:22	2746.92	8406.11	60.0	30.03	37.15	23.08	2.20	11.88
E0525	06/13/2016 4:33:12	2743.35	8416.18	69.0	30.02	23.17	21.08	0.54	1.55
E0527	06/13/2016 6:39:55	2747.87	8421.96	78.0	30.00	14.30	12.33	0.11	1.86
E0528	06/13/2016 10:23:00	2734.53	8419.26	90.0	30.02	12.27	11.13	0.00	1.14
E0524	06/13/2016 12:12:48	2735.26	8407.35	68.0	30.05	8.64	8.63	0.00	0.02
E0530	06/13/2016 16:32:22	2701.08	8407.79	105.0	30.02	2.72	2.52	0.02	0.18
E0501	06/21/2016 15:42:44	2732.9	8248.31	8.7	30.00	125.30	120.96	0.41	3.94
E0502	06/21/2016 17:37:45	2729.55	8245.51	8.1	30.02	70.20	66.87	0.04	3.28

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0504	06/21/2016 19:36:42	2726.28	8250.19	11.4	30.03	15.53	13.98	0.00	1.55
E0506	06/21/2016 21:38:57	2730.93	8300.32	17.9	30.08	57.70	40.88	0.00	16.82
E0509	06/21/2016 23:58:16	2723.74	8306.35	26.9	29.97	135.70	91.46	0.57	43.67
E0514	06/22/2016 2:35:52	2725.11	8321.4	37.4	30.03	40.44	36.54	2.09	1.82
E0517	06/22/2016 5:56:08	2722.51	8331.16	44.0	30.03	207.09	39.34	1.52	166.23
E0520	06/22/2016 8:59:07	2706.52	8338.32	55.0	30.02	19.76	15.46	1.07	3.24
E0526	06/22/2016 11:25:17	2705.4	8352.4	69.0	30.02	1.36	1.27	0.00	0.09
E0433	06/22/2016 14:08:12	2652.78	8402.27	90.0	30.02	7.11	1.35	0.01	5.75
E0430	06/22/2016 17:51:02	2649.89	8340.7	61.5	30.02	2.54	1.44	0.00	1.10
E0431	06/22/2016 19:22:19	2644.04	8341.79	65.5	30.00	3.13	0.35	0.05	2.73
E0423	06/22/2016 22:48:09	2635.73	8319.7	49.3	30.00	2.66	1.50	0.00	1.16
E0425	06/23/2016 0:48:04	2628.27	8311.46	46.8	30.03	59.51	51.91	0.36	7.24
E0429	06/23/2016 4:05:15	2614.55	8327.74	59.3	30.07	45.48	26.43	0.62	18.43
E0428	06/23/2016 5:47:47	2608.76	8322.82	57.5	30.03	43.52	10.70	0.58	32.24
E0432	06/23/2016 8:20:55	2605.55	8336.91	68.5	30.00	18.72	14.08	0.11	4.53

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0331	06/23/2016 10:15:44	2558.41	8335.62	70.8	30.00	19.91	15.51	0.03	4.37
E0330	06/23/2016 12:21:26	2555.39	8339.3	71.3	30.02	3.12	1.98	0.00	1.14
E0336	06/23/2016 14:06:45	2553.26	8346.19	93.5	30.03	5.09	3.30	0.00	1.79
E0334	06/23/2016 16:48:17	2547.31	8333.07	70.5	30.02	4.57	4.51	0.00	0.06
E0328	06/23/2016 19:14:20	2551.27	8322.1	60.5	30.00	22.98	1.92	0.00	21.06
E0329	06/23/2016 21:09:38	2541.92	8327.9	67.0	30.02	2.03	1.67	0.00	0.36
E0333	06/23/2016 23:34:11	2526.82	8329.9	69.7	29.98	57.51	2.28	0.01	55.22
E0332	06/24/2016 3:16:38	2501.33	8330.29	70.3	30.05	11.09	10.02	0.76	0.32
E0335	06/24/2016 5:41:32	2504.09	8340.96	78.5	30.02	9.67	9.39	0.11	0.17
E0209	06/24/2016 8:25:15	2455.44	8347.81	76.5	30.00	42.90	8.81	0.05	34.05
E0207	06/24/2016 12:11:07	2442.24	8326.06	62.4	30.00	22.13	1.27	0.01	20.85
E0208	06/24/2016 14:44:53	2435.19	8314.56	62.9	30.00	11.40	6.14	0.02	5.24
E0205	06/24/2016 16:36:10	2438.2	8310.21	57.1	30.02	3.81	3.31	0.06	0.45
E0206	06/24/2016 18:32:00	2448.18	8311.19	58.5	30.02	4.41	2.91	0.05	1.45
E0204	06/24/2016 22:13:30	2455.62	8247.82	40.8	30.00	6.68	4.31	0.00	2.37

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E0203	06/25/2016 0:00:52	2450.42	8244.52	34.8	30.02	18.56	17.67	0.41	0.49
E0202	06/25/2016 4:34:26	2447.36	8209.67	21.6	30.02	45.13	29.37	14.89	0.86
E0201	06/25/2016 6:57:50	2449.55	8201.02	19.8	30.00	59.95	50.44	9.39	0.13
E0101	06/25/2016 9:17:35	2453.41	8156.78	18.6	30.48	0.00	0.00	0.00	0.00
E0306	06/25/2016 12:04:59	2504.19	8153	17.3	30.02	23.05	17.46	0.08	5.51
E0304	06/25/2016 13:42:16	2508.54	8150.91	15.4	29.62	98.54	34.41	0.06	64.08
E0309	06/25/2016 17:00:51	2521.57	8213.51	24.6	30.02	343.60	16.17	0.00	327.43
E0311	06/25/2016 19:00:42	2515.49	8222.04	29.1	30.00	85.05	5.59	6.13	73.33
E0315	06/25/2016 21:11:59	2519.72	8234.65	33.8	30.02	118.95	6.50	0.13	112.32
E0310	06/25/2016 23:57:12	2526.4	8222.52	28.9	30.02	46.16	30.89	0.17	15.10
E0313	06/26/2016 1:44:54	2531.98	8229.06	31.4	29.98	0.00	0.00	0.00	0.00
E0314	06/26/2016 3:59:40	2531.64	8240.22	33.8	30.00	309.76	30.55	0.37	278.85
E0317	06/26/2016 6:23:51	2521.65	8239.02	36.8	30.02	62.88	25.15	2.93	34.80
E0321	06/26/2016 8:43:58	2516.94	8248	43.4	30.03	263.89	14.98	0.38	248.53
E0326	06/26/2016 11:17:34	2524.71	8300.33	52.1	30.02	15.81	1.21	0.01	14.58

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E0322	06/26/2016 13:45:48	2534.16	8251.02	45.0	30.02	440.08	4.13	0.00	435.95
E0324	06/26/2016 15:40:33	2537.41	8255.32	48.0	30.02	87.40	9.18	0.01	78.22
E0319	06/26/2016 18:18:38	2549.15	8248.81	40.5	30.02	336.76	8.58	0.00	328.17
E0323	06/26/2016 20:07:00	2544.09	8256.44	47.4	30.00	99.57	18.34	0.00	81.23
E0325	06/26/2016 21:59:19	2546.37	8305.39	52.1	30.02	55.92	9.71	0.01	46.20
E0327	06/26/2016 23:43:44	2551.43	8311.43	54.6	30.02	88.67	3.95	0.00	84.71
E0424	06/27/2016 2:07:32	2601.81	8304.34	47.4	30.03	30.60	21.38	5.55	3.68
E0421	06/27/2016 4:54:50	2601.76	8300.62	43.5	30.00	71.72	57.66	1.44	12.63
E0416	06/27/2016 7:47:50	2611.43	8254.69	37.6	30.02	24.98	23.48	0.97	0.53
E0420	06/27/2016 9:45:01	2607.34	8253.28	40.0	30.00	108.26	26.55	1.17	80.54
E0415	06/27/2016 12:21:23	2604.84	8246.08	35.0	30.02	40.35	26.23	0.41	13.71
E0409	06/27/2016 15:07:11	2616.35	8236.1	25.8	30.02	435.51	32.04	0.01	401.64
E0413	06/27/2016 17:11:03	2618.93	8244.47	29.4	30.03	91.35	5.44	0.03	85.88
E0407	06/27/2016 19:14:39	2626.53	8235.11	23.8	30.02	136.09	13.68	0.03	122.39
E0404	06/27/2016 21:21:13	2627.8	8225.66	18.1	29.42	104.83	30.87	0.01	73.94

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0406	06/27/2016 23:27:10	2635.08	8233.61	20.9	30.00	23.86	23.27	0.04	0.55
E0408	06/28/2016 1:15:48	2629	8239.6	24.4	30.02	81.56	21.69	0.79	59.08
E0411	06/28/2016 3:17:07	2627.38	8245.38	27.8	30.03	44.28	26.33	2.01	15.94
E0414	06/28/2016 5:34:23	2627.17	8248.94	30.9	30.03	207.78	32.63	0.98	174.18
E0412	06/28/2016 8:03:52	2633.65	8249.35	28.6	30.00	531.54	20.02	0.30	511.21
E0418	06/28/2016 10:50:08	2635.09	8305.1	40.6	30.02	28.29	28.12	0.03	0.14
E0417	06/28/2016 12:51:26	2642	8307.24	39.9	30.00	21.39	13.95	0.62	6.82
E0426	06/28/2016 15:36:49	2650.6	8320.93	49.0	30.02	16.99	5.46	0.00	11.53
E0427	06/28/2016 18:03:54	2653.87	8325.06	51.0	30.08	8.36	5.26	0.01	3.09
E0422	06/28/2016 20:02:48	2656.33	8316.59	45.0	30.00	21.81	12.34	0.00	9.47
E0419	06/28/2016 21:50:40	2654.05	8310.38	40.5	30.02	15.22	11.38	0.88	2.95
E0510	06/29/2016 0:28:59	2659.84	8256.01	29.8	30.02	21.50	20.51	0.37	0.63
E0512	06/29/2016 4:12:58	2708.88	8307.8	33.8	30.03	46.06	43.10	2.65	0.31
E0516	06/29/2016 7:28:18	2722.63	8329.1	42.1	30.02	20.72	16.77	3.60	0.35
E0518	06/29/2016 10:17:01	2730.65	8344.96	48.8	30.00	4.43	3.38	0.11	0.94

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0515	06/29/2016 13:04:25	2743.27	8338.42	41.5	30.02	29.07	5.26	0.30	23.51
E0513	06/29/2016 14:56:42	2746.15	8331.18	34.3	30.00	11.10	10.14	0.64	0.32
E0511	06/29/2016 16:37:36	2743.78	8325.75	32.9	30.08	243.19	243.13	0.00	0.05
E0507	06/29/2016 18:58:06	2742.11	8312.82	25.6	30.02	30.57	25.73	0.00	4.84
E0508	06/29/2016 20:47:21	2749.03	8317.96	25.4	30.02	41.78	27.27	0.06	14.45
E0505	06/29/2016 23:12:32	2758.99	8305.18	17.1	30.00	22.50	20.97	0.07	1.47
E0615	06/30/2016 1:23:18	2802.59	8317.27	23.4	30.03	64.01	55.78	0.86	7.38
E0621	06/30/2016 4:40:21	2808.03	8340.29	33.1	30.02	44.58	42.29	0.56	1.73
E0617	06/30/2016 7:02:11	2813.39	8335.5	29.1	30.02	48.94	44.24	0.06	4.65
E0613	06/30/2016 9:12:45	2822.43	8325.52	22.1	30.02	41.78	39.99	0.10	1.69
E0609	06/30/2016 12:03:42	2818.71	8311.61	17.4	30.02	0.00	0.00	0.00	0.00
E0604	06/30/2016 15:48:51	2832.43	8300.27	8.9	30.02	77.78	16.04	0.02	61.73
E0601	06/30/2016 14:25:33	2828.6	8257.46	7.5	30.02	0.00	0.00	0.00	0.00
E0612	06/30/2016 19:09:27	2836.04	8326.73	19.3	30.02	6.69	5.02	0.00	1.67
E0614	06/30/2016 21:07:15	2828.96	8330.83	22.6	30.00	12.80	11.80	0.01	0.99

SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTHER (kg)
E0618	07/01/2016 0:04:12	2832.48	8350.87	30.8	30.02	18.65	17.37	0.00	1.27