

Florida SEAMAP Fall 2015 Survey Cruise Report (10/8/15 – 10/30/15)
Cruise Number 171505 using the R/V Tommy Munro

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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 fall 2015 survey, Florida sampled a total of 142 stations, which included 141 trawl stations with reportable catch and 1 trawl station with zero catch due to gear damage. Total catch weight from the trawls was 7,214.4 kg. Individual trawl catch weights ranged from 1 kg to 601 kg. Just over 52,000 animals were collected, including 1,535 pink shrimp, 81 red snapper, and 82 red lionfish, which occurred in 31 of the 141 stations with reportable catch. The three most abundant species collected were vermilion snapper (n=4,492; 40% occurrence), lane snapper (n=4,165; 48% occurrence), and moon jellies (n=3,449; 52% occurrence).

In addition to following standard SEAMAP sampling protocols, we collected ancillary material for various life history studies. Otoliths were removed from 633 fishes for ageing analyses, including 476 Lutjanids and 50 Serranids. In addition, 32 spines were removed from managed fishes for alternative aging techniques. Gonads were removed from 102 fish for reproductive staging and 165 fin clip or tissue samples were taken for genetic analysis. Tissue samples were collected from 702 fish for mercury analyses and 830 stomachs were removed for dietary analyses from a wide variety of managed and non-managed species. One hundred and forty-two 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, Gulf Coast Research Lab and the Florida Institute of Technology.

Quality Control

A total of 4,960 animals were frozen or preserved and brought back to FWRI. Of those animals 1,688 fishes were kept as representative samples and an additional 972 fishes were brought back to be further identified in the lab. In addition to fishes, 2,300 invertebrates were brought back for confirmation or identification.

Deviations

One trawl station was sampled and aborted due to hard bottom and/or gear damage. A total of 19 trawl stations were skipped due to rough seas. Station E0209 was a 36.2 minute trawl due to a hydraulic system failure on the vessel. The trawl was towed the additional 6.2 minutes at the same speed while the mechanical issues were addressed. Stop trawl occurred when the retrieval of the net began. All stations sampled were completed according to the NMFS SEAMAP protocol.

Cruise participants

Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute personnel collected all samples. Sample summary and data entry were completed by Ryan Jones.

Submitted By:

Ted Switzer
SEAMAP Coordinator

Table 1. Florida SEAMAP Fall 2015 Shrimp/Groundfish Cruise Summary

SEAMAP STATION NUMBER	START TIME	START LAT	START LONG	START DEPTH (m)	TOW TIME (min)	CATCH TOTAL (kg)	CATCH FISH (kg)	CATCH CRUST. (kg)	CATCH OTTHER (kg)
E1007	10/8/2015 13:32	2939.11	8728.47	65	30.1	6.990	6.616	0.002	0.372
E1006	10/8/2015 17:11	2957.92	8711.12	44	30.1	34.850	34.358	0.000	0.492
E1008	10/8/2015 20:00	2953.42	8709.4	77	30.1	4.438	3.648	0.018	0.772
E0907	10/9/2015 1:17	3000.06	8631.85	60	30.1	0.000	0.000	0.000	0.000
E0906	10/9/2015 4:25	2953.73	8614.39	55	30.0	28.463	17.650	1.590	9.223
E0905	10/9/2015 6:14	2948.79	8607.33	43.1	30.1	16.436	14.880	0.008	1.548
E0908	10/9/2015 8:41	2938.02	8608.14	67.5	30.1	15.840	13.304	1.014	1.522
E0812	10/9/2015 11:17	2927.36	8559.4	65	30.1	17.871	14.533	0.536	2.802
E0811	10/9/2015 12:59	2924.04	8557.48	58	30.1	2.826	2.144	0.014	0.668
E0810	10/9/2015 15:01	2923.39	8549.97	51	30.1	5.494	2.606	0.096	2.792
E0814	10/9/2015 18:44	2909.83	8533.2	85	30.2	10.234	9.344	0.002	0.888
E0809	10/9/2015 21:05	2918.92	8530.6	44	30.1	41.666	1.832	0.006	39.828
E0807	10/10/2015 0:06	2922.52	8512.4	24.3	30.1	48.034	11.574	0.272	36.188
E0806	10/10/2015 1:16	2921.14	8508.85	25.6	30.0	9.900	7.190	0.666	2.044
E0808	10/10/2015 2:21	2920.15	8508.51	24.9	30.0	16.012	11.846	1.648	2.518

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E0719	10/10/2015 5:13	2913.2	8449.99	29.8	30.0	19.450	18.142	0.704	0.604
E0722	10/10/2015 7:41	2901.38	8450.42	38.9	30.0	20.568	18.138	2.060	0.370
E0720	10/10/2015 10:23	2906.47	8435.42	33.8	30.1	29.410	17.138	0.862	11.410
E0721	10/10/2015 12:23	2900.18	8429.95	33	30.1	14.878	14.820	0.024	0.034
E0619	10/10/2015 15:10	2848.38	8442.38	46	30.1	2.700	1.336	0.032	1.332
E0626	10/10/2015 17:17	2839.32	8441.92	51.8	30.0	2.508	1.514	0.098	0.896
E0627	10/10/2015 18:47	2836.13	8443.71	55	30.0	1.230	0.924	0.000	0.306
E0621	10/10/2015 22:24	2822.07	8422.23	46	30.0	25.760	6.820	0.024	18.916
E0623	10/10/2015 23:57	2821.23	8420.3	49	30.0	17.132	10.159	0.398	6.575
E0624	10/11/2015 1:28	2819.26	8418.61	50.6	30.0	14.730	11.284	1.766	1.680
E0625	10/11/2015 3:08	2813.72	8422.08	51.5	30.1	8.464	6.276	1.796	0.392
E0628	10/11/2015 4:58	2808.57	8426.81	67.2	30.0	15.810	12.726	0.740	2.344
E0622	10/11/2015 7:45	2807.34	8411.52	48.3	30.1	7.576	6.296	0.734	0.546
E0620	10/11/2015 10:20	2800.64	8359.2	46	30.0	21.660	16.302	0.534	4.824
E0516	10/11/2015 12:43	2754.66	8355.2	48	30.0	3.056	2.996	0.000	0.060
E0515	10/11/2015 14:57	2744.14	8347.93	47	30.2	5.446	2.848	0.006	2.592

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E0520	10/11/2015 17:44	2734.39	8403.5	64	30.1	5.946	4.754	0.026	1.166
E0519	10/11/2015 19:36	2739.59	8406.74	66	30.1	4.672	4.180	0.002	0.490
E0521	10/11/2015 22:02	2747.2	8415.54	65	30.1	21.838	20.854	0.040	0.944
E0523	10/12/2015 0:17	2738.13	8415.23	74	30.0	16.508	15.788	0.408	0.312
E0524	10/12/2015 2:03	2737.21	8419.79	79.8	30.1	17.312	14.122	0.954	2.236
E0526	10/12/2015 5:05	2729.75	8420.36	96.8	30.0	11.426	10.010	0.492	0.924
E0525	10/12/2015 7:40	2722.36	8407.78	78.5	30.0	10.682	9.748	0.512	0.422
E0522	10/12/2015 9:43	2719.23	8359.52	68.5	30.0	25.974	21.252	1.150	3.572
E0517	10/12/2015 13:17	2718.61	8330.8	47	30.2	79.006	8.268	0.008	70.730
E0508	10/12/2015 16:25	2719.99	8308.66	33	30.1	12.792	7.976	0.006	4.810
E0506	10/12/2015 18:06	2727.93	8305.38	27	30.1	78.396	26.256	0.022	52.118
E0504	10/12/2015 20:07	2734.54	8305.48	23	30.2	444.276	11.976	0.000	432.300
E0512	10/12/2015 23:46	2717.55	8316.26	36.8	30.0	22.500	22.190	0.114	0.196
E0514	10/13/2015 2:09	2705.63	8320.72	44.5	30.1	34.706	31.300	1.608	1.798
E0518	10/13/2015 5:50	2702.57	8347.72	61.1	30.0	11.752	8.350	1.416	1.986
E0424	10/13/2015 8:08	2657.46	8343.77	61.4	30.0	14.822	9.652	3.792	1.378

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E0423	10/13/2015 11:22	2644.08	8333.18	59	30.4	6.770	3.570	0.058	3.142
E0425	10/13/2015 13:39	2642.82	8343.11	71	30.1	50.598	49.324	0.042	1.232
E0427	10/13/2015 16:07	2643.13	8355.29	89	30.1	3.350	2.274	0.008	1.068
E0428	10/13/2015 20:12	2620.82	8352.11	110	30.3	15.114	14.642	0.014	0.458
E0426	10/13/2015 22:22	2617.11	8344.39	80	30.1	8.686	3.598	0.002	5.086
E0422	10/14/2015 2:41	2603.93	8316.04	54.5	30.1	14.774	8.800	2.606	3.368
E0328	10/14/2015 5:29	2550.46	8324.5	63	30.0	9.490	5.306	0.972	3.212
E0332	10/14/2015 9:09	2539.54	8345.54	96.8	30.0	9.962	4.742	0.236	4.984
E0331	10/14/2015 11:12	2536.41	8342.51	90	30.3	6.290	3.658	0.070	2.562
E0329	10/14/2015 13:43	2529.65	8337.07	74	30.1	19.616	16.352	0.010	3.254
E0330	10/14/2015 16:08	2520.95	8339.08	78	30.0	1.882	1.816	0.004	0.062
E0209	10/14/2015 20:55	2451.54	8351.72	92	36.2	6.625	6.610	0.004	0.011
E0101	10/17/2015 0:18	2452.28	8155.34	17.9	30.0	47.682	44.328	3.270	0.084
E0201	10/17/2015 2:31	2454.82	8209.36	23.4	30.0	40.050	26.552	3.164	10.334
E0309	10/17/2015 4:50	2505.36	8209.07	23	30.0	66.436	21.442	0.148	44.846
E0203	10/17/2015 7:51	2458.28	8229.76	31.8	30.0	21.440	10.322	4.128	6.990

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E0202	10/17/2015 10:03	2445.64	8232.71	27.4	30.0	22.020	13.634	7.952	0.434
E0204	10/17/2015 12:37	2449.83	8251.35	40	30.1	12.488	11.296	0.354	0.838
E0205	10/17/2015 16:51	2446	8325.44	67	30.1	1.842	1.174	0.006	0.662
E0206	10/17/2015 18:22	2443.6	8324.69	67	30.1	4.632	0.638	0.020	3.974
E0207	10/17/2015 20:31	2439.26	8332.02	63	30.1	5.310	3.076	0.004	2.230
E0208	10/18/2015 0:05	2451.29	8347.14	77.5	30.1	23.000	21.518	0.010	1.472
E0325	10/18/2015 5:34	2459.66	8314.85	61.8	30.0	12.492	9.904	2.450	0.138
E502	10/21/2015 1:30	2703.09	8235.86	14.6	30.1	154.550	45.200	0.048	109.302
E403	10/21/2015 3:53	2650.24	8231.79	17.5	30.1	61.548	12.544	0.182	48.822
E0405	10/21/2015 6:40	2634.97	8232.78	22	30.1	24.654	20.994	0.140	3.520
E0401	10/21/2015 9:32	2636.21	8214.8	6	30.0	110.491	109.235	0.040	1.216
E0402	10/21/2015 11:39	2624.12	8212.78	11.1	30.0	138.454	7.716	0.006	130.732
E0406	10/21/2015 14:51	2627.17	8230.6	21.8	30.0	199.968	15.070	0.000	184.898
E0411	10/21/2015 17:56	2623.66	8252.65	34	30.0	35.067	33.410	0.031	1.626
E0415	10/21/2015 20:17	2611.77	8249.97	36.5	30.0	46.222	20.486	0.062	25.674
E0412	10/21/2015 21:57	2611.75	8246.23	33	30.1	44.502	42.816	0.008	1.678

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E0408	10/22/2015 0:15	2616.5	8237.8	27	30.1	155.374	7.478	0.036	147.860
E0407	10/22/2015 2:05	2612.15	8233.44	24	30.1	243.980	20.106	0.014	223.860
E0315	10/22/2015 5:54	2549.84	8241.89	37	30.1	224.736	32.472	1.918	190.346
E0316	10/22/2015 8:10	2541.08	8245.07	39	30.0	601.272	66.642	0.434	534.196
E0314	10/22/2015 11:34	2528.01	8234.09	32.5	30.0	108.229	38.540	0.042	69.647
E0313	10/22/2015 13:44	2532.97	8232.91	32.5	30.0	332.356	68.467	0.027	263.862
E0311	10/22/2015 16:53	2534.84	8220.84	27.8	30.0	87.767	39.991	0.063	47.713
E0310	10/22/2015 18:35	2536.69	8218.27	26.4	30.0	52.347	4.198	0.067	48.082
E0307	10/22/2015 21:54	2530.72	8158.76	16.9	30.1	59.327	19.366	0.028	39.933
E0304	10/22/2015 23:37	2538.18	8156.08	16.7	30.2	309.469	83.905	0.024	225.540
E0301	10/23/2015 2:38	2544.78	8143.84	7.5	30.2	41.348	11.988	0.080	29.280
E0302	10/23/2015 4:40	2533.91	8146.85	10.7	30.1	40.412	21.568	0.190	18.654
E0308	10/23/2015 6:38	2526.35	8157.6	16.9	29.6	84.614	44.400	0.180	40.034
E0306	10/23/2015 8:14	2519.91	8155.41	16.1	30.0	64.786	44.710	0.256	19.820
E0305	10/23/2015 9:58	2520.18	8156.22	16.8	30.0	193.387	78.640	0.237	114.510
E0312	10/23/2015 14:24	2520.7	8227.92	30.6	30.0	37.948	30.660	0.010	7.278

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E0320	10/23/2015 17:44	2515.98	8254.03	47.5	30.1	148.262	2.188	0.050	146.024
E0318	10/23/2015 20:19	2502.64	8251.88	45	30.0	46.816	3.570	0.245	43.001
E0322	10/23/2015 23:06	2503.01	8310.03	59	30.0	15.046	13.008	0.134	1.904
E0326	10/24/2015 0:55	2508.11	8317.12	63	30.1	2.648	1.936	0.122	0.590
E0324	10/24/2015 3:42	2522.48	8313.2	61	30.1	9.282	6.320	0.706	2.256
E0327	10/24/2015 5:23	2524.56	8319.05	63	30.1	3.778	3.136	0.070	0.572
E0323	10/24/2015 12:22	2535.17	8315.38	59.6	30.0	1.164	0.566	0.084	0.514
E0321	10/24/2015 16:52	2540.94	8303.1	52.1	30.0	6.392	6.154	0.028	0.210
E0319	10/24/2015 20:10	2557.91	8303.36	46.8	30.0	18.056	7.033	0.148	10.875
E0420	10/24/2015 23:01	2613.32	8314.29	53	30.0	18.394	16.888	0.010	1.496
E0421	10/25/2015 0:40	2620.04	8317.89	54	30.1	11.564	3.908	0.262	7.394
E0419	10/25/2015 2:27	2622.89	8315.24	52	30.1	13.084	3.808	0.050	9.226
E0417	10/25/2015 4:50	2620.78	8308.58	47	30.0	26.636	18.816	1.848	5.972
E0418	10/25/2015 7:02	2631.2	8314.96	49	30.1	9.066	5.338	0.198	3.530
E0410	10/25/2015 11:35	2646.15	8249.5	29.1	30.0	394.304	0.318	0.004	393.982
E0413	10/25/2015 14:23	2650.88	8300.57	35	30.1	44.852	44.750	0.000	0.102

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E0414	10/25/2015 15:43	2652.99	8303.82	37.3	30.1	39.775	33.101	0.076	6.598
E0416	10/25/2015 17:22	2656.1	8312.4	42.5	30.0	82.802	11.239	0.001	71.562
E0513	10/25/2015 19:19	2701.83	8309.32	38.4	30.0	23.809	21.014	0.028	2.767
E0511	10/25/2015 21:04	2709.59	8311.19	36.1	30.0	45.521	41.950	0.007	3.564
E0505	10/25/2015 23:33	2717.49	8300.6	24	30.1	28.825	26.235	1.682	0.908
E0503	10/26/2015 2:52	2736.82	8304.62	20	30.0	47.638	36.276	0.494	10.868
E0509	10/26/2015 6:04	2746.57	8324.36	32	30.1	45.077	15.951	0.004	29.122
E0510	10/26/2015 7:51	2748.66	8331.93	35	30.2	25.144	21.516	0.322	3.306
E0507	10/26/2015 11:15	2753.89	8320.54	27.3	30.0	93.158	12.134	0.004	81.020
E0605	10/26/2015 14:01	2802.5	8308.91	19.6	30.0	9.276	3.292	0.000	5.984
E0601	10/26/2015 17:22	2817.32	8253.72	4.8	30.0	15.484	13.784	0.000	1.700
E0609	10/26/2015 21:33	2810.58	8328.37	26.1	30.0	4.280	3.490	0.002	0.788
E0614	10/26/2015 23:52	2802.92	8331.8	31	30.0	52.008	24.895	1.467	25.646
E0616	10/27/2015 2:07	2811.16	8341.23	32	30.0	19.825	16.115	0.278	3.432
E0603	10/27/2015 9:38	2850.51	8308.33	10	30.0	85.308	22.458	0.086	62.764
E0602	10/27/2015 11:41	2855.92	8307.15	8.4	30.0	58.808	48.219	0.010	10.579

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E0704	10/28/2015 13:29	2949	8423.67	7.8	30.1	16.295	7.936	0.234	8.125
E0703	10/28/2015 15:32	2951.9	8417.23	8.2	30.0	13.439	3.540	0.000	9.899
E0701	10/28/2015 18:05	2952.37	8400.74	7.3	30.0	32.452	15.874	0.048	16.530
E0708	10/28/2015 23:11	2938.84	8441.23	16	30.0	179.608	33.244	0.414	145.950
E0802	10/29/2015 2:50	2926.89	8503.58	14	30.0	28.941	18.232	8.039	2.670
E801	10/29/2015 4:44	2935.83	8505.89	6	30.1	28.256	11.670	5.912	10.674
E0804	10/29/2015 6:58	2934.85	8518.61	10.9	30.0	13.334	12.202	0.740	0.392
E0805	10/29/2015 9:42	2937.76	8534.8	28	30.0	55.012	53.346	1.450	0.216
E0803	10/29/2015 12:29	2951.1	8527.55	8.6	30.0	12.718	10.936	0.066	1.716
E0904	10/29/2015 19:31	3012.53	8619.63	32.1	30.0	69.824	9.222	0.294	60.308
E0901	10/29/2015 22:46	3023.43	8638.16	11.1	30.0	63.232	62.956	0.258	0.018
E0902	10/30/2015 1:06	3015.66	8648.94	23	30.0	21.484	20.872	0.022	0.590
E0903	10/30/2015 2:41	3018.32	8653.47	25	30.1	41.762	40.312	0.288	1.162
E1003	10/30/2015 5:00	3007.65	8702.89	28	30.0	12.474	9.730	0.008	2.736
E1004	10/30/2015 6:27	3007.54	8709.87	29	30.1	35.190	31.128	0.014	4.048

