

Florida SEAMAP Fall 2013 Survey Cruise Report (10/9/13 – 10/19/13)
Cruise Number 171305 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. Fall catch rates were higher for select taxa (i.e., red snapper), and so the implementation of a fall Florida SEAMAP trawl survey was recommended should additional funds become available. 2013 provided an opportunity to conduct a Florida SEAMAP fall survey for the first time since 2010.

Objectives

1. Conduct a trawl survey to collect information on shrimp and groundfish abundance/distribution with standard SEAMAP 42-ft 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 (2 – 60 fathoms). Within each NMFS zone, specific sampling sites were chosen following a stratified-random survey design, with two strata bounded by the 20 fathom isobath.

At each sampling station, trawl samples were collected using standard 42-foot SEAMAP trawls (1.58 inch stretched mesh towed at a 5:1 cable length to water depth ratio). At sites where the bottom composition was unknown, an exploratory survey of the bottom using the fathometer on the R/V Tommy Munro was conducted prior to deploying the 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 (i.e., 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 or YSI.

Results

During the fall 2013 survey, Florida sampled a total of 78 stations, which included 73 stations with reportable catch, 3 stations with zero catch due to gear damage, and 2 stations skipped due to live/hard bottom. Total catch weight for the trip was 5,470 kg. Individual trawl catch weights ranged from 1.1 kg to 639.7 kg. Over 38,000 animals were collected, including 437 pink shrimp, 19 red snapper, and 71 red lionfish, which occurred in 16 of the 73 stations with reportable catch. The three most abundant species collected were pinfish (n=5,830; 36% occurrence), brown rock shrimp (n=4,109; 29% occurrence) and dusky flounder (n=2,063; 77% occurrence).

In addition to following standard SEAMAP sampling protocols, ancillary material for various life history studies were collected. Otoliths were removed from 368 managed fishes for ageing analyses, including 170 lutjanids and 14 serranids. In addition, four spines were removed from managed fishes for alternative aging techniques. Gonads were removed from eight fish for reproductive staging and 20 fin clip or tissue samples were taken for genetic analysis. Tissue samples were collected from 500 fish for mercury

analyses and 359 stomachs were removed for dietary analyses from a wide variety of managed and non-managed species. One hundred fifty 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, frozen fish and fin clips for the Gulf Coast Research Lab, and tissue samples for USF.

Quality Control

A total of 3,154 animals were frozen or preserved and brought back to FWRI. Of those animals, 634 fish were kept as representative samples and an additional 907 fish were brought back to be further identified in the lab. In addition to fish, 1,613 invertebrates were brought back for confirmation and identification.

Deviations

Two stations were not sampled because the presence of hard and/or live bottom was confirmed by the ship's fathometer prior to setting gear. Three stations were sampled and aborted due to gear damage, and seven stations were skipped due to insufficient time. 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 Chris Stafford.

Submitted By:

Robert McMichael
SEAMAP Coordinator

Table 1. Florida SEAMAP Fall 2013 Shrimp/Groundfish Cruise Summary

SEAMAP	START TIME (GMT)	START LAT	START LON	START DPTH (m)	TOW TIME (min)	TOTAL CATCH (kg)	FISH CATCH (kg)	CRUST. CATCH (kg)	OTHER CATCH (kg)
E1004	10/09/2013 16:01:06	2959.07	08701.48	70	30.03	26.0	1.0	0.0	25.0
E0905	10/09/2013 19:33:22	3001.62	08638.28	58.3	30.20	2.7	0.3	0.0	2.4
E0904	10/09/2013 21:03:59	3006.06	08635.56	41.8	30.02	8.8	7.0	0.0	1.7
E0903	10/10/2013 1:04:39	2959.81	08602.74	31.9	30.03	46.2	27.8	3.6	14.8
E0807	10/10/2013 5:44:34	2925.29	08556.33	51.8	30.03	25.3	15.7	8.3	1.3
E0809	10/10/2013 10:23:35	2910.47	08519.70	36.8	30.02	255.4	242.9	6.5	6.0
E0805	10/10/2013 12:02:38	2911.57	08512.96	30.8	30.00	154.5	2.9	0.0	151.5
E0717	10/10/2013 15:58:28	2902.37	08443.28	36.8	30.30	1.1	1.0	0.0	0.1
E0712	10/10/2013 18:25:15	2906.37	08428.52	28.8	30.02	26.4	12.4	0.3	13.7
E0603	10/10/2013 20:36:12	2855.88	08424.52	32.8	30.00	33.2	6.6	0.0	26.6
E0619	10/11/2013 0:36:48	2840.35	08451.06	51.8	30.13	24.9	19.4	3.3	2.1
E0621	10/11/2013 2:43:49	2827.23	08453.89	78.8	30.07	43.6	39.4	1.2	3.0
E0623	10/11/2013 6:07:47	2808.51	08436.39	72.8	30.12	29.4	24.0	1.3	4.1
E0624	10/11/2013 8:41:06	2807.25	08419.38	57.8	30.08	40.9	32.1	8.6	0.2
E0514	10/11/2013 11:58:23	2743.86	08422.86	81.8	30.02	6.5	5.3	0.1	1.2
E0512	10/11/2013 14:00:09	2748.04	08416.70	62.3	30.18	60.8	55.0	0.0	5.7
E0513	10/11/2013 16:29:28	2746.41	08401.29	54.8	30.12	25.4	23.8	0.0	1.6
E0515	10/11/2013 18:42:23	2733.54	08405.03	64.3	30.00	7.2	6.5	0.0	0.7
E0521	10/11/2013 22:59:43	2702.44	08407.96	98.8	30.03	7.9	6.7	0.0	1.2
E0520	10/12/2013 3:25:42	2704.39	08336.03	54.5	30.08	40.4	29.0	7.2	4.3
E0411	10/12/2013 6:45:33	2650.64	08314.53	43.5	30.05	76.9	44.0	14.1	18.8
E0414	10/12/2013 9:03:08	2640.33	08321.24	50.6	30.05	40.4	21.9	15.7	2.8
E0418	10/12/2013 13:39:46	2609.53	08343.45	78.2	30.15	10.1	2.8	0.0	7.3
E0420	10/12/2013 16:37:42	2605.98	08324.35	58.9	30.02	23.5	5.8	0.2	17.5
E0422	10/12/2013 18:50:41	2603.04	08311.17	52.9	30.22	8.6	2.9	0.1	5.7
E0417	10/12/2013 22:30:40	2616.50	08259.03	41.3	30.07	33.3	8.7	0.4	24.2
E0316	10/13/2013 3:32:31	2541.66	08306.12	53.5	30.02	38.2	19.9	12.1	6.2
E0319	10/13/2013 5:59:05	2527.51	08315.58	60.6	30.05	105.4	22.4	6.3	76.8

SEAMAP	START TIME (GMT)	START LAT	START LON	START DPTH (m)	TOW TIME (min)	TOTAL CATCH (kg)	FISH CATCH (kg)	CRUST. CATCH (kg)	OTHER CATCH (kg)
E0321	10/13/2013 9:05:42	2525.22	08337.60	73.2	30.08	15.6	14.1	0.5	1.0
E0323	10/13/2013 11:06:29	2519.52	08330.07	70	30.05	11.7	5.8	0.0	5.9
E0205	10/13/2013 16:00:37	2448.66	08351.60	81.3	30.05	33.1	1.9	0.0	31.2
E0206	10/13/2013 21:28:06	2444.03	08309.00	55.3	30.05	4.9	2.6	0.1	2.2
E0203	10/14/2013 0:10:18	2458.33	08314.62	61	29.95	27.7	19.7	2.4	5.7
E0329	10/14/2013 1:40:49	2504.37	08312.06	60.3	30.03	20.2	12.4	5.2	2.6
E0328	10/14/2013 4:50:45	2505.25	08250.81	44.3	30.03	83.5	39.8	3.5	40.2
E0202	10/14/2013 9:38:30	2446.60	08220.03	24.6	30.13	20.9	14.4	3.3	3.2
E0314	10/14/2013 12:14:12	2502.08	08213.74	24.6	30.07	639.7	5.4	0.0	634.3
E0310	10/14/2013 17:09:03	2517.10	08139.71	11.8	30.10	81.5	79.0	0.0	2.5
E0309	10/14/2013 20:47:03	2517.30	08210.55	23.1	30.13	12.4	1.6	0.5	10.3
E0311	10/14/2013 22:33:12	2511.17	08214.60	26.4	30.02	32.4	8.0	0.0	24.4
E0312	10/15/2013 0:17:37	2509.50	08223.98	31.4	29.15	45.5	21.7	2.1	21.7
E0324	10/15/2013 3:43:21	2519.49	08247.43	43	29.98	272.1	39.5	1.5	231.1
E0306	10/15/2013 7:22:41	2537.64	08237.17	33.5	30.08	106.9	29.5	0.8	76.6
E0302	10/15/2013 11:13:10	2551.10	08213.78	21.8	30.00	335.7	2.8	0.0	332.9
E0410	10/15/2013 15:58:42	2617.96	08156.22	9.6	30.00	19.5	17.3	0.0	2.1
E0409	10/15/2013 17:00:12	2620.31	08155.09	8.1	30.25	60.4	59.2	0.2	1.0
E0408	10/15/2013 19:01:10	2622.66	08208.38	8.7	30.10	18.6	14.0	0.5	4.1
E0406	10/15/2013 20:21:49	2627.24	08210.75	6.5	30.10	122.6	119.4	0.2	3.1
E0405	10/15/2013 21:27:45	2628.57	08212.26	7	30.08	69.4	67.8	0.2	1.4
E0407	10/15/2013 23:14:02	2626.71	08223.15	15.9	30.02	43.1	40.3	0.4	2.4
E0403	10/16/2013 1:31:28	2637.84	08224.44	16.1	29.98	19.0	14.6	0.1	4.3
E0402	10/16/2013 4:35:20	2643.22	08245.84	26.6	30.05	179.4	28.1	0.7	150.7
E0509	10/16/2013 7:43:47	2702.21	08241.24	19.9	30.02	203.0	44.6	0.4	157.9
E0508	10/16/2013 10:56:55	2710.91	08239.71	12.7	0.00	0.0	0.0	0.0	0.0
E0507	10/16/2013 11:06:12	2711.12	08240.85	13.3	29.95	93.1	45.5	0.0	47.6
E0506	10/16/2013 13:29:30	2725.46	08245.51	9.8	29.90	18.9	4.8	0.0	14.1
E0505	10/16/2013 14:27:06	2727.00	08245.75	8.3	29.92	49.4	44.1	0.0	5.3
E0502	10/16/2013 18:00:56	2752.72	08255.60	6.3	30.13	106.2	96.5	0.0	9.7

SEAMAP	START TIME (GMT)	START LAT	START LON	START DPTH (m)	TOW TIME (min)	TOTAL CATCH (kg)	FISH CATCH (kg)	CRUST. CATCH (kg)	OTHER CATCH (kg)
E0614	10/16/2013 21:06:28	2802.55	08315.35	23.1	30.18	10.0	9.1	0.0	0.8
E0611	10/17/2013 0:00:13	2813.18	08255.91	7.3	29.95	0.0	0.0	0.0	0.0
E0610	10/17/2013 2:34:21	2827.63	08253.90	5.3	30.02	336.0	46.7	0.1	289.3
E0607	10/17/2013 5:00:16	2838.01	08302.27	9.2	0.02	0.0	0.0	0.0	0.0
E0608	10/17/2013 7:25:20	2835.76	08327.19	20.4	30.12	47.8	43.3	0.1	4.4
E0609	10/17/2013 10:08:48	2832.96	08333.68	23.8	30.13	85.2	16.7	0.4	68.1
E0606	10/17/2013 11:59:26	2842.00	08334.13	21.8	30.37	360.1	25.6	0.0	334.5
E0713	10/17/2013 15:28:58	2904.81	08331.99	16.1	29.98	91.7	4.6	0.0	87.1
E0601	10/17/2013 18:53:29	2857.99	08358.52	27.6	30.27	16.0	11.9	0.0	4.1
E0711	10/17/2013 21:09:44	2910.23	08354.98	22.8	30.12	190.6	24.7	0.0	165.9
E0710	10/18/2013 0:52:53	2925.35	08418.72	25.4	30.00	179.0	29.0	1.4	148.6
E0710	10/18/2013 3:45:01	2938.86	08404.40	15.2	30.00	28.9	22.2	0.0	6.7
E0702	10/18/2013 7:21:04	2948.35	08428.20	10.7	30.08	9.0	7.0	0.0	2.0
E0703	10/18/2013 8:25:04	2944.34	08429.21	11.1	30.07	15.1	11.2	0.1	3.7
E0704	10/18/2013 9:50:58	2941.07	08435.05	13.1	30.02	0.0	0.0	0.0	0.0
E0708	10/18/2013 12:50:14	2927.38	08452.96	16.1	29.98	6.5	5.4	0.0	1.1
E0804	10/18/2013 15:16:22	2916.11	08505.82	29.6	30.02	17.9	1.6	0.1	16.2
E0802	10/18/2013 22:57:40	3005.06	08556.65	28.9	30.02	46.3	15.1	0.0	31.2
E0801	10/19/2013 0:26:58	3008.81	08556.62	25.1	30.02	87.1	42.9	2.1	42.1
E0901	10/19/2013 2:56:40	3014.05	08611.20	25.8	29.98	0.0	0.0	0.0	0.0