

**Florida SEAMAP Fall 2008 Survey Cruise Report (10/15/2008 – 10/22/2008)**  
*Cruise Number 0806 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 compliment of seasonal trawl samples (23 depth strata x 2 diurnal time periods) in four sampling areas in the Gulf of Mexico: the Florida Panhandle (NMFS statistical zones 8 – 10), the Big Bend (NMFS statistical zones 6 and 7), Tampa Bay (NMFS statistical zone 5), and Charlotte Harbor (NMFS statistical zone 4). Before implementing the Florida SEAMAP trawl program, two years of exploratory surveys will be conducted to validate the feasibility of sampling these four areas as well as the most appropriate season (summer or fall) within which to conduct trawl surveys. The goal of the 2008 summer and fall trawl surveys is to explore the feasibility of trawling along the west Florida shelf; the 2008 surveys will be conducted at a reduced sampling effort, and so the Charlotte Harbor area will be excluded from these surveys. In 2009 the full compliment of sampling effort is planned for both summer and fall; data from these trawl surveys will then be analyzed to determine which season (summer or fall) will provide the most useful data in support of the assessment and management of fisheries resources in Florida.

**Objectives**

1. Conduct a fall trawl survey to collect information on shrimp and groundfish abundance and distribution with standard SEAMAP 40-ft trawls.
2. Select sampling stations from FWC-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**

Sampling areas of the Gulf coast of Florida were defined by aggregating NMFS statistical shrimp zones. For the fall 2008 survey, sampling effort was assigned to three aggregated areas: Tampa Bay (statistical zone 5), the Big Bend (statistical zones 6 and 7), and the Florida Panhandle (statistical zones 8-10). Within each area, bathymetry data (3 second x 3 second resolution) were downloaded from the NOAA National Geophysical Data Center and assigned to the appropriate SEAMAP depth strata (5 – 60 fathoms). Specific sampling sites within each area and depth strata were then randomly selected from all available sites using ArcGIS and the Hawth's Analysis Tools extension. Initially, a full compliment of 138 sampling sites was selected (3 areas x 23 depth strata). From these, a subset of 82 primary sampling sites were selected for the fall 2008 exploratory trawl survey; the remaining 56 sites represented alternate sites in the event that a primary sampling site could not be sampled.

At each sampling station, trawl samples were collected using standard 40-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; tow directions varied, and were chosen to assure that 30 minutes of trawling occurred within the pre-selected depth stratum. 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.

## **Results**

During the fall 2008 survey a total of 47 stations were sampled, including 28 daytime and 19 nighttime stations. Total catch weight for the trip was 1,330 kg. Individual trawl catch weights ranged from 0.89 kg to 206 kg. Over 12,000 animals were collected, including 97 pink shrimp and 86 red snapper. In addition to following standard SEAMAP sampling protocols, we collected ancillary material for various life history

studies at no additional cost to SEAMAP. Otoliths were removed from 242 managed fishes for ageing analyses, including 161 lutjanids and 19 serranids. Approximately 600 stomachs were removed for dietary analyses and approximately 750 tissue samples were collected for mercury analyses. Additional specimens were retained for validation of field identifications. All samples will be processed at the Fish and Wildlife Research Institute at no additional cost to SEAMAP.

### **Deviations**

High winds and rough seas limited the total number of working days to approximately six out of a planned ten days, so we were only able to sample 47 stations in the fall 2008 survey. To account for these lost days, the southern sites off the coast of Tampa Bay were dropped due to the availability of historical trawling data for this area. Additionally, foul weather forced us to terminate the cruise early, and so some sampling effort in the Panhandle was lost.

### **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 Jenna Tortorelli and Mandy Tyler.

Submitted By:

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*Robert McMichael*  
SEAMAP Coordinator

**Table 1. Florida SEAMAP Fall 2008 Shrimp/Groundfish Cruise Summary**

<i>SEAMAP Stn Num</i>	<i>Date and Time (GMT)</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Start Depth (fms)</i>	<i>Tow Time</i>	<i>Total Catch (kg)</i>	<i>Fish</i>	<i>Crustaceans</i>	<i>Other</i>
FD001	10/15/2008 21:00:59	3003.39	08756.72	8.6	30.62	21.150	20.877	0.091	0.182
FD002	10/15/2008 23:06:45	3004.06	08749.39	9.8	29.85	56.080	55.051	0.235	0.794
FN001	10/16/2008 2:06:50	2959.08	08734.65	16	30.05	28.524	27.052	0.048	1.424
FN002	10/16/2008 5:13:01	2957.16	08715.95	16	30.32	6.295	3.257	0.001	3.037
FN003	10/16/2008 9:51:27	3006.30	08642.12	25	30.35	14.225	14.035	0.130	0.060
FD003	10/16/2008 13:17:14	2952.50	08627.40	41	30.18	5.097	4.515	0.000	0.582
FD004	10/16/2008 15:38:16	2952.03	08617.46	35	30	0.000	0.000	0.000	0.000
FD004	10/16/2008 16:57:59	2952.69	08619.54	37	30.23	66.551	66.386	0.000	0.165
FD005	10/16/2008 22:51:18	2932.11	08554.92	23	30.07	26.171	23.225	0.324	2.622
FD005	10/16/2008 21:55:46	2930.29	08552.92	23	31.12	0.000	0.000	0.000	0.000
FN004	10/17/2008 3:04:15	2912.10	08535.98	46	30.13	37.78899	36.02399	0.563	1.202
FN005	10/17/2008 6:01:36	2901.78	08525.44	31	30.22	3.069	2.089	0.392	0.588
FN006	10/17/2008 8:33:20	2851.46	08520.97	50	30.73	24.126	21.418	0.556	2.152
FD006	10/17/2008 12:50:05	2848.61	08454.75	27	30.47	5.103	4.159	0.000	0.944

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FD007	10/17/2008 15:54:25	2832.33	08456.74	41	29.75	0.951	0.863	0.000	0.088
FD008	10/17/2008 17:38:56	2825.67	08454.72	46	30.55	32.355	32.352	0.000	0.003
FD010	10/17/2008 21:58:31	2817.98	08446.26	36	30.18	2.572	2.567	0.000	0.005
FD009	10/17/2008 19:56:23	2828.50	08443.16	33	30.07	6.710	6.708	0.000	0.002
FN007	10/17/2008 23:55:44	2809.05	08448.48	6	30.33	75.700	74.228	0.126	1.346
FN008	10/18/2008 2:41:33	2803.80	08433.68	42	29.82	25.244	23.909	0.221	1.114
FN009	10/18/2008 7:29:30	2813.70	08354.49	21	30.03	26.304	23.932	0.631	1.741
FN010	10/18/2008 9:34:16	2808.51	08344.66	18	30.23	16.460	15.522	0.231	0.707
FD011	10/18/2008 12:14:15	2801.40	08352.37	22	31.57	77.239	26.107	0.848	50.284
FD012	10/18/2008 14:24:49	2751.09	08359.61	27	29.95	1.510	1.440	0.007	0.063
FD013	10/18/2008 17:11:54	2755.26	08414.65	31	30.37	0.894	0.893	0.000	0.001
FD014	10/18/2008 19:06:42	2751.18	08421.57	41	30.45	22.700	22.692	0.000	0.008
FN011	10/19/2008 1:35:32	2714.47	08413.52	54	29.67	63.673	61.993	0.201	1.479
FN012	10/19/2008 3:22:16	2713.92	08409.51	48	29.78	15.745	13.989	0.396	1.360
FD015	10/18/2008 22:20:10	2734.60	08405.29	34	30.3	9.904	8.725	0.317	0.862
FD016	10/20/2008 12:10:09	2716.41	08258.34	12	30.3	126.550	2.513	0.000	124.037
FD017	10/20/2008 15:00:45	2729.74	08257.35	8.6	30.12	3.810	1.299	0.000	2.511

*Tuesday, November 04, 2008*

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FD018	10/20/2008 17:28:27	2742.43	08302.87	9.1	29.9	9.721002	9.620001	0.001	0.100
FD019	10/20/2008 19:52:27	2754.03	08258.84	5.8	29.78	0.000	0.000	0.000	0.000
FD019	10/20/2008 21:22:35	2755.88	08258.53	5.6	30	16.476	12.802	0.000	3.674
FD020	10/20/2008 22:46:16	2752.69	08302.85	7.6	30.32	38.734	37.958	0.004	0.772
FN013	10/21/2008 1:42:49	2740.39	08322.15	17	30.5	68.67001	34.464	2.250	31.956
FN015	10/21/2008 5:04:57	2746.99	08316.41	14	30.88	41.673	38.75301	0.636	2.284
FN016	10/21/2008 7:22:10	2755.15	08311.49	11	30.28	10.764	8.150999	0.098	2.515
FN014	10/21/2008 3:28:35	2744.36	08319.00	15	26.32	24.286	23.342	0.167	0.777
FN017	10/21/2008 10:33:12	2817.39	08309.84	10.3	31.07	18.106	12.391	0.000	5.715
FD021	10/21/2008 12:18:52	2820.07	08304.35	7	31	8.822001	8.521	0.001	0.300
FD023	10/21/2008 17:33:40	2850.40	08313.52	6	30.98	20.456	15.619	0.003	4.834
FD022	10/21/2008 15:57:58	2846.30	08306.31	5.2	30.2	205.929	10.941	0.017	194.971
FD024	10/21/2008 20:18:56	2903.70	08332.20	8.6	30.52	9.485	9.413	0.000	0.072
FD025	10/21/2008 22:03:28	2905.68	08342.62	9.8	31.45	7.579	4.128	0.000	3.451
FN018	10/22/2008 1:49:19	2904.60	08415.52	14	30.33	25.772	15.607	1.374	8.790999
FN019	10/22/2008 4:20:22	2909.68	08434.48	17	29.43	21.136	10.337	1.282	9.517