

Florida SEAMAP Summer 2008 Survey Cruise Report
Cruise Number 0803 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 (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 complement 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 summer 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 summer 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 x 2 diurnal time periods). From these, a subset of 82 primary sampling sites were selected for the summer 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, and dissolved oxygen) were measured in association with each trawl event either in situ using a CTD or from water samples (surface, mid-depth, and bottom) using a YSI.

Results

During the summer 2008 survey a total of 57 stations were sampled, including 33 daytime and 24 nighttime stations. Total catch weight for the trip was 2,275 kg. Individual trawl catch weights ranged from 0.3 kg to 685 kg. Over 96,000 animals were collected, including 208 pink shrimp, 7 brown shrimp, and 53 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 over 250 managed fishes for ageing analyses, approximately 1,500 stomachs were removed for dietary analyses, and approximately 1,600 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

We were only able to sample 57 stations due to two days spent waiting out Tropical Storm Edouard (August 3 and 4). To account for these two missed sampling days, the shallower sites off the coast of Tampa Bay were dropped due to the availability of historical trawling data for this area. Trawl duration at station FD001 was cut short (19 minutes) due to a large object on the fathometer. Most environmental data were recorded from surface, mid-depth, and bottom water samples collected using a Niskin bottle and a handheld YSI unit after the CTD was lost during the first night of sampling; several attempts were made to trawl up the unit, and subsequent attempts to retrieve the unit using sonar and SCUBA divers was unsuccessful.

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 Keith Fischer.

Submitted By:

Robert McMichael
SEAMAP Coordinator

Table 1. Florida SEAMAP Summer 2008 Shrimp/Groundfish Cruise Summary

<i>SEAMAP Stn Num</i>	<i>Date and Time</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Depth (ftms)</i>	<i>Tow Time</i>	<i>Total Catch (kgs)</i>	<i>Fish</i>	<i>Crustaceans</i>	<i>Other</i>
FD001	08/01/2008 12:07:09	3003.81	8752.78	9.9	18.98	6.094	3.914	0.090	2.090
FD053	08/01/2008 15:14:15	2949.88	8742.74	18	30.48	17.754	14.396	0.000	3.358
FD002	08/01/2008 18:49:53	3008.33	8727.13	12	30.03	30.186	29.131	0.178	0.877
FD055	08/01/2008 22:02:44	3015.14	8700.74	13	30.1	50.015	48.084	0.046	1.885
FN001	08/02/2008 1:40:41	3017.10	8714.26	8.4	30.08	68.02999	14.364	0.685	52.981
FN002	08/02/2008 5:02:34	3009.51	8713.82	14	30.05	22.931	15.027	6.204	1.700
FN003	08/02/2008 7:38:41	3010.65	8705.70	14	30.07	26.83401	25.551	0.5889999	0.6940001
FD003	08/02/2008 13:42:40	3003.62	8647.90	52	31.3	55.152	47.462	0.820	6.870
FN004	08/02/2008 9:58:35	3007.86	8658.78	16	30.32	25.600	16.230	4.326	5.044
FD006	08/02/2008 21:37:40	2937.93	8609.80	38	30.62	77.028	72.040	0.006	4.982
FD004	08/02/2008 18:48:18	2947.02	8617.26	41	30.28	41.800	38.756	0.128	2.916
FD005	08/02/2008 23:54:57	2948.05	8601.09	22	30.03	26.656	22.296	1.506	2.854
FN006	08/05/2008 2:43:44	2920.30	8528.77	21	30.07	113.220	24.054	8.134	81.032
FN007	08/05/2008 5:19:13	2908.01	8525.21	25	30.08	18.189	14.510	2.015	1.664
FN008	08/05/2008 8:49:18	2902.96	8529.87	34	30.17	36.369	27.738	1.481	7.150
FD007	08/05/2008 12:42:52	2851.81	8514.41	47	30.32	22.925	21.724	0.000	1.201
FD010	08/05/2008 21:35:32	2814.49	8445.53	43	30.18	21.413	19.992	0.018	1.403

FD008	08/05/2008 16:00:10	2839.20	8452.35	28	30.28	7.870	5.907	0.013	1.950
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<i>SEAMAP Stn Num</i>	<i>Date and Time</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Depth (ftms)</i>	<i>Tow Time</i>	<i>Total Catch (kgs)</i>	<i>Fish</i>	<i>Crustaceans</i>	<i>Other</i>
FD009	08/05/2008 18:29:23	2830.21	8456.83	46	30.03	37.980	36.928	0.370	0.682
FN009	08/06/2008 1:15:22	2810.18	8429.34	36	30.08	46.354	41.29601	3.022	2.036
FN010	08/06/2008 4:33:59	2801.88	8434.91	43	30.02	24.186	20.298	0.764	3.124
FN011	08/06/2008 7:19:56	2756.07	8434.03	55	30.03	29.284	26.602	0.740	1.942
FN012	08/06/2008 9:42:54	2758.05	8421.79	35	30	41.426	34.800	2.348	4.278
FD011	08/06/2008 12:48:05	2737.23	8424.46	55	29.82	0.304	0.078	0.012	0.214
FD012	08/06/2008 16:31:07	2719.54	8412.61	45	30	11.236	10.598	0.000	0.6380001
FD013	08/06/2008 20:02:00	2704.65	8354.05	36	30	33.944	33.284	0.088	0.572
FD014	08/06/2008 22:03:39	2703.60	8342.75	31	30	8.776	8.290	0.118	0.368
FN013	08/07/2008 1:13:07	2702.74	8401.86	46	30.23	28.090	27.528	0.246	0.316
FN014	08/07/2008 3:27:57	2659.81	8355.00	41	30.02	37.518	32.240	4.040	1.238
FN015	08/07/2008 6:03:59	2701.43	8345.45	30	30.02	41.883	34.48801	3.242	4.153
FD026	08/07/2008 14:39:50	2804.05	8309.12	9.4	30.05	15.876	13.359	0.021	2.496
FD027	08/07/2008 17:00:22	2810.29	8323.43	13	30	14.430	10.648	0.000	3.782
FD028	08/07/2008 19:48:58	2826.16	8324.08	11	30	0.000	0.000	0.000	0.000
FD029	08/07/2008 23:08:30	2836.03	8321.82	10.2	30.02	26.321	17.482	0.107	8.732
FN026	08/08/2008 1:38:49	2830.95	8329.82	21.95	30.07	19.900	19.131	0.017	0.752
FN027	08/08/2008 4:03:48	2843.20	8332.12	11	30	50.24099	47.337	0.368	2.536
FN028	08/08/2008 8:54:50	2905.89	8401.75	14	30.12	46.121	41.946	0.447	3.728

FD030	08/08/2008 12:28:05	2908.03	8424.98	15	31.03	15.212	14.606	0.176	0.430
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<i>SEAMAP Stn Num</i>	<i>Date and Time</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Depth (ftms)</i>	<i>Tow Time</i>	<i>Total Catch (kgs)</i>	<i>Fish</i>	<i>Crustaceans</i>	<i>Other</i>
FD041	08/07/2008 21:20:54	2829.84	8325.18	11	30.05	47.37199	22.422	0.059	24.891
FD031	08/08/2008 14:56:52	2858.56	8433.57	19	30	10.791	10.679	0.000	0.112
FD032	08/08/2008 18:43:35	2917.18	8445.55	17	30.13	16.946	16.886	0.012	0.048
FD033	08/08/2008 21:56:25	2938.65	8437.64	8.5	29.62	4.756	4.130	0.000	0.626
FN030	08/09/2008 1:11:33	2930.63	8453.17	8.3	30	11.632	8.184	0.012	3.436
FN031	08/09/2008 3:26:00	2925.76	8501.38	9.4	30	11.466	5.638	3.338	2.490
FN032	08/09/2008 5:48:21	2915.31	8457.58	15	30.08	5.138	2.060	0.566	2.512
FN033	08/09/2008 8:28:52	2907.55	8510.69	20	30.03	162.030	112.578	0.998	48.454
FD034	08/09/2008 11:48:43	2917.59	8508.37	14	29.98	2.560	2.418	0.002	0.140
FD035	08/09/2008 15:05:50	2934.87	8518.80	5.4	29.62	21.240	12.374	0.128	8.738
FD036	08/09/2008 17:22:28	2942.94	8527.63	6.6	30.15	685.400	683.0298	0.122	2.248234
FD037	08/09/2008 19:49:47	2955.27	8531.21	6.3	29.95	14.320	13.756	0.000	0.564
FD038	08/09/2008 21:56:09	2959.70	8544.74	12	30	1.986	1.746	0.000	0.240
FN034	08/10/2008 1:37:29	3010.42	8613.00	17	30	27.488	21.662	1.980	3.846
FN038	08/10/2008 4:51:08	3019.79	8628.20	13	30.05	15.432	9.098	0.214	6.120
FN036	08/10/2008 7:06:23	3006.17	8628.84	22	30.22	21.482	19.542	0.334	1.606
FD039	08/10/2008 13:30:42	2953.18	8726.19	16	30.22	1.514	1.302	0.000	0.212
FD040	08/10/2008 17:24:30	2945.24	8751.52	20	30	27.292	27.232	0.002	0.058
FD052	08/10/2008 20:18:39	3003.24	8744.51	11	30.47	4.446	0.858	0.000	3.588

