

Florida SEAMAP Fall 2010 Survey Cruise Report (10/12/10 – 10/22/10)
Cruise Number 1007 using the R/V Tommy Munro

Prepared by:
Robert McMichael
Florida Fish and Wildlife Conservation Commission
Fish and Wildlife Research Institute
100 8th Avenue SE
St. Petersburg, FL 33701

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 3 – 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 fall Florida SEAMAP trawl survey in the future is recommended should additional funds become available.

Objectives

1. Conduct a fall 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 (5 – 60 fathoms). Within each NMFS zone, specific sampling sites were chosen following a simple random survey design. For fall 2010, Mississippi and Florida were able to combine funding to support a 10 day Florida fall SEAMAP cruise. With the aid of Alabama, Mississippi, and NMFS, we were able to sample a large portion of the eastern Gulf of Mexico.

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 2010 survey, Florida samples a total of 67 stations, 64 stations with reportable catches and three stations with zero catches due to net damage. Total catch weight for the trip was 3,054 kg. Individual trawl catch weights ranged from 1.4 kg to 388.8 kg. Over 51,000 animals were collected, including 32 pink shrimp, 18 brown shrimp, and 64 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 445 managed fishes for ageing analyses, including 241 lutjanids and 29 serranids. In addition, 177 spines were removed for additional aging techniques from managed fishes including red grouper, red snapper, vermillion snapper, and gray trigger fish. Fin clips (36 samples) were taken for genetic analysis from two species, gray triggerfish and goliath grouper. Tissue samples were collected from 1,136 fish for mercury analyses and 972 stomachs were removed for dietary analyses from a wide variety of managed and non-managed species. All samples will be processed at the Fish and Wildlife Research Institute at no additional cost to SEAMAP.

Deviations

From the list of stations originally selected as Florida trawl stations we were unable to complete the following. Three stations were not sampled due to unsuitable trawling bottom. In addition, 12 stations from statistical zone 7 and one station from statistical zone 6 were not sampled due to logistical constraints. 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 Mandy Tyler-Jedlund.

Submitted By:

Robert McMichael
SEAMAP Coordinator

Table 1. Florida SEAMAP Fall 2010 Shrimp/Groundfish Cruise Summary

<i>SEAMAP Station Number</i>	<i>Date and Time (GMT)</i>	<i>Latitude (DD MM.SS)</i>	<i>Longitude (DD MM.SS)</i>	<i>Depth (Ftms)</i>	<i>Tow Time (Min)</i>	<i>Total Weight (Kg)</i>	<i>Fish (Kg)</i>	<i>Crustaceans (Kg)</i>	<i>Other (Kg)</i>
E0905	10/14/2010 16:49:23	30 04.47	86 45.04	43	30.02	3.036	2.532	0.000	0.504
E0904	10/14/2010 18:35:07	30 06.88	86 46.61	32	30.02	48.218	46.266	0.000	1.952
E0903	10/14/2010 20:35:30	30 09.90	86 36.52	16	30.02	21.490	19.187	0.006	2.297
E0901	10/14/2010 23:04:37	30 22.93	86 34.84	6	30.00	82.368	67.510	0.000	14.858
E0907	10/15/2010 5:29:59	29 57.44	86 21.75	35	30.07	44.567	42.203	1.389	0.975
E0908	10/15/2010 7:28:55	29 56.53	86 26.52	38	30.12	59.712	57.402	1.108	1.202
E0910	10/15/2010 10:05:07	29 42.24	86 21.51	21	29.73	33.112	29.788	1.588	1.736
E0909	10/15/2010 13:18:04	29 47.25	86 03.41	23	30.00	8.202	7.188	0.002	1.012
E0911	10/15/2010 15:15:37	29 37.17	86 06.59	37	30.00	1.440	1.434	0.000	0.006
E0807	10/15/2010 18:31:59	29 32.29	85 45.13	17	30.05	5.574	3.706	0.072	1.796
E0902	10/15/2010 1:18:57	30 10.30	86 28.12	17	30.43	43.523	37.284	3.889	2.350
E0906	10/15/2010 3:34:16	30 00.34	86 17.41	23	30.18	50.763	41.160	5.516	4.088
E0809	10/15/2010 21:15:35	29 20.54	85 57.95	40	30.07	4.606	4.114	0.002	0.490
E0810	10/15/2010 22:55:54	29 18.71	85 49.68	32	30.62	14.931	13.440	0.433	1.058
E0813	10/16/2010 2:53:49	29 03.19	85 18.74	24	29.6	21.445	14.381	1.713	5.351
E0814	10/16/2010 4:34:46	28 59.20	85 20.32	33	30.55	40.179	28.992	6.979	4.208
E0815	10/16/2010 6:20:08	28 55.83	85 10.81	29	30.12	24.463	17.748	3.255	3.460
E0816	10/16/2010 8:30:27	28 45.19	85 04.03	40	29.08	23.885	20.404	0.724	2.757
E0721	10/16/2010 11:52:07	28 59.56	84 49.84	21	30.07	23.127	20.812	0.136	2.179
E0608	10/16/2010 14:17:22	28 45.28	84 39.89	25	30.15	6.471	5.651	0.094	0.726
E0602	10/16/2010 17:02:45	28 55.40	84 30.56	19	30.02	122.617	14.214	0.075	108.328
E0604	10/16/2010 19:47:06	28 51.24	84 13.71	16	30.03	0.000	0.000	0.000	0.000

<i>SEAMAP Station Number</i>	<i>Date and Time (GMT)</i>	<i>Latitude (DD MM.SS)</i>	<i>Longitude (DD MM.SS)</i>	<i>Depth (Ftms)</i>	<i>Tow Time (Min)</i>	<i>Total Weight (Kg)</i>	<i>Fish (Kg)</i>	<i>Crustaceans (Kg)</i>	<i>Other (Kg)</i>
E0604	10/16/2010 21:56:49	28 50.81	84 11.67	16	30.10	11.028	9.008	0.006	2.014
E0612	10/17/2010 0:11:55	28 40.37	84 13.87	19	30.23	20.843	13.320	0.723	6.800
E0620	10/17/2010 2:34:54	28 28.21	84 05.79	20	30.77	35.331	19.122	0.851	15.357
E0622	10/17/2010 5:28:25	28 27.26	84 25.03	25	30.12	10.978	5.747	0.133	5.098
E0625	10/17/2010 7:47:56	28 16.67	84 35.50	37	30.12	19.078	15.666	2.648	0.764
E0628	10/17/2010 11:23:06	28 12.58	84 09.34	24	29.78	19.520	14.258	0.048	5.214
E0630	10/17/2010 14:00:26	28 05.49	83 58.07	22	29.97	4.356	3.756	0.036	0.564
E0629	10/17/2010 16:11:14	28 06.15	84 09.85	26	29.25	2.964	2.124	0.006	0.834
E0635	10/17/2010 18:58:07	27 59.70	84 27.84	42	29.33	5.633	4.896	0.035	0.702
E0503	10/17/2010 21:57:25	27 53.83	84 07.68	25	30.05	40.360	14.882	0.743	24.735
E0508	10/17/2010 23:56:30	27 44.39	84 10.56	29	29.82	0.000	0.000	0.000	0.000
E0509	10/18/2010 2:56:48	27 42.86	83 50.63	26	29.95	72.421	44.857	7.926	19.638
E0514	10/18/2010 5:50:33	27 32.05	83 51.21	29	29.88	36.128	31.743	2.860	1.524
E0520	10/18/2010 8:15:09	27 24.18	83 44.07	27	29.90	81.181	56.057	16.456	8.667
E0524	10/18/2010 12:17:54	27 10.51	84 12.74	56	30.02	17.989	16.478	0.074	1.437
E0529	10/18/2010 15:35:03	27 05.04	83 50.73	36	30.35	69.520	59.634	1.836	8.050
E0523	10/18/2010 19:31:10	27 12.36	83 25.51	24	30.00	176.263	39.512	0.143	136.608
E0528	10/19/2010 0:53:17	27 06.53	82 55.55	14	30.20	30.019	22.946	2.582	4.491
E0525	10/18/2010 21:16:10	27 10.47	83 23.58	23	30.68	50.680	42.913	0.255	7.512
E0530	10/19/2010 2:41:15	27 03.97	82 44.63	12	29.85	388.873	66.264	1.212	321.396
E0527	10/19/2010 5:13:45	27 06.97	82 32.24	6.2	29.52	212.140	203.490	0.154	8.495
E0526	10/19/2010 6:50:17	27 09.38	82 40.41	7.4	29.97	35.7190	30.813	0.500	4.406
E0517	10/19/2010 11:48:43	27 26.86	83 01.53	10.7	29.67	19.728	17.815	0.161	1.752

<i>SEAMAP Station Number</i>	<i>Date and Time (GMT)</i>	<i>Latitude (DD MM.SS)</i>	<i>Longitude (DD MM.SS)</i>	<i>Depth (Ftms)</i>	<i>Tow Time (Min)</i>	<i>Total Weight (Kg)</i>	<i>Fish (Kg)</i>	<i>Crustaceans (Kg)</i>	<i>Other (Kg)</i>
E0519	10/19/2010 10:26:28	27 24.95	83 03.19	12	30.45	78.622	75.438	2.192	0.991
E0515	10/19/2010 14:24:16	27 29.12	83 18.18	18	30.47	28.661	27.043	0.212	1.406
E0507	10/19/2010 17:28:15	27 46.36	83 18.13	15	30.37	37.941	21.690	0.315	15.937
E0506	10/19/2010 20:03:29	27 48.02	83 03.86	8.7	28.00	0.000	0.000	0.000	0.000
E0506	10/19/2010 21:45:13	27 48.22	83 01.68	7.3	10.13	0.000	0.000	0.000	0.000
E0634	10/20/2010 0:47:43	28 01.07	83 02.51	7.1	17.50	69.800	19.583	0.183	50.034
E0632	10/20/2010 3:02:09	28 02.67	83 11.58	10.9	30.17	2.820	2.504	0.000	0.316
E0624	10/20/2010 6:21:17	28 18.13	83 30.94	14	30.05	0.000	0.000	0.000	0.000
E0624	10/20/2010 7:36:39	28 17.96	83 32.55	14	29.68	66.767	50.962	0.777	15.028
E0618	10/20/2010 14:48:35	28 29.01	83 22.22	11	29.40	5.8350	5.386	0.012	0.437
E0621	10/20/2010 10:36:50	28 27.56	83 49.45	17	29.95	124.574	67.089	1.447	56.037
E0616	10/20/2010 12:51:04	28 31.17	83 34.59	13	30.55	17.094	13.676	0.294	3.124
E0617	10/20/2010 17:40:25	28 29.59	83 01.21	5.6	30.25	71.357	12.315	0.047	58.996
E0607	10/20/2010 20:48:51	28 46.10	83 12.82	6.4	30.38	87.210	25.650	0.005	61.555
E0609	10/20/2010 23:01:22	28 45.30	83 28.22	10.6	29.87	80.372	14.911	0.010	65.452
E0812	10/21/2010 10:13:43	29 05.80	85 10.05	17	30.02	74.497	24.236	14.611	35.650
E0811	10/21/2010 12:35:48	29 13.48	85 15.24	19	30.12	14.299	4.130	0.130	10.039
E0808	10/21/2010 14:52:15	29 23.83	85 15.91	14	30.38	11.304	9.904	0.106	1.294
E0806	10/21/2010 17:34:04	29 33.89	85 29.54	8.9	30.05	4.811	3.672	0.001	1.138
E0803	10/21/2010 19:13:09	29 40.75	85 27.60	8.4	29.97	16.138	8.756	0.000	7.382
E0804	10/21/2010 20:30:25	29 40.65	85 29.76	11	30.00	11.641	11.119	0.202	0.320
E0802	10/21/2010 22:01:55	29 41.41	85 33.06	13	30.13	14.424	13.578	0.176	0.670
E0805	10/21/2010 23:23:48	29 38.85	85 37.03	15	30.42	30.746	11.572	0.544	18.630
E0801	10/22/2010 2:01:48	29 52.18	85 34.15	12	30.33	56.548	49.245	0.109	7.194