

# **SEAMAP Fall 2009 Shrimp/Groundfish Survey Cruise Report**

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## **Introduction**

SEAMAP Fall Shrimp/Groundfish cruises are conducted to provide fishery-independent monitoring and assessment information essential to management of Texas Gulf of Mexico fisheries resources in a coordinated and cost-efficient program. Fishery-independent information is that collected without direct reliance on statistics reported by commercial or recreational fishermen.

## **Objectives**

1. Conduct a fall trawl survey to collect information on shrimp and groundfish abundance and distribution with standard TPWD 20-ft trawls.
2. Select 80 stations for random sampling. All species are identified, weighed and counted, and selected species are sexed and measured according to the Texas SEAMAP Operations Manual.
3. Collect information on environmental parameters (salinity, temperature, dissolved oxygen, wind speed and direction, wave height, cloud cover and water color) in conjunction with trawl sampling.
4. Code all data according to approved Texas SEAMAP Operations Manual guidelines, and enter data on the Texas SEAMAP data entry system.
5. Submit data to the Gulf States Marine Fisheries Commission.

## **Methods**

Vessels that participated in the Texas Fall Shrimp/Groundfish Survey were: R.J. Kemp (31), Matagorda Bay (32), Sabine (40), Nueces Bay (67), and San Jacinto (69). All Texas Territorial Seas was sectioned into 1-minute latitude by 1-minute longitude grids. Grids at least 1/3 of which is within the territorial sea equal to or greater than 1.8 m (1 fm) deep and at least 1/3 of which is free from known obstructions, were selected at random by computer programs. Sampling was conducted in 16 grids from each of the five gulf areas (Sabine Pass, Bolivar Pass, Matagorda Pass, Aransas Pass, and Brazos Santiago Pass). Eight trawls samples were collected in each gulf area between the 1<sup>st</sup> and 15<sup>th</sup> of the month and 8 between the 16<sup>th</sup> and the last day of the month. A 20 ft trawl with 1.5 inch stretched mesh was lowered into position at the selected site and towline was set at

a 5:1 cable length water depth ratio. Trawl towing was conducted at or near 3 mph for 10 minutes after lockdown, and towed parallel to fathom curve. Direction of first tow was randomly selected. Subsequent tows alternated tow direction. Sample workup and data processing was conducted in accordance with the Texas SEAMAP Operations Manual guidelines.

Environmental data were collected in conjunction with each trawl. Temperature and dissolved oxygen values were measured with either a YSI 6600 meter (Aransas Pass) or a YSI 85 meter (all others) at each trawl station. Three water bottles samples (surface, mid, and bottom) were collected at each station for in lab salinity measurements using a YSI 610DM.

### **Results**

Texas vessels collected 80 Fall Shrimp/Groundfish survey samples in Texas Territorial Seas (between latitudes 25° 58' and 29° 41' and longitudes -93° 34' and -97° 09') (Table 1). Samples were collected between November 2<sup>nd</sup> 2009 and November 18<sup>th</sup>, 2009 (Table 1).

### **Deviations**

There were no significant deviations.

### **Cruise participants:**

Texas Parks and Wildlife Department staff collected samples, processed catch and entered information on data sheets. Cruise report summary completed by Fernando Martinez-Andrade.

Submitted By:

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Fernando Martinez-Andrade  
SEAMAP Coordinator

**Table 1. TPWD SEAMAP 2009 Fall Shrimp/Groundfish cruise report summary.**

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO		SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH	
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
31 R.J. KEMP																					
31001	11/02/2009	828	2610.17	-9706.47	21	17.7	5.7	6.0	5.7	35.8	35.9	36.1	24.4	24.4	23.8	0.574	0.011	0.067	10	13	36
31002	11/02/2009	918	2611.65	-9701.50	21	23.2	6.0	6.3	6.3	36.0	36.0	36.1	24.9	24.9	24.8	2.040	0.002	0.047	10	14	78
31003	11/02/2009	1003	2614.08	-9703.45	21	18.9	6.5	6.4	6.3	35.8	36.0	35.9	24.5	24.4	24.2	0.067	0	0.062	10	12	45
31004	11/02/2009	1046	2615.75	-9706.45	21	17.1	6.2	6.5	6.1	36.1	35.8	35.9	24.3	24.2	23.8	0.113	0.016	0.008	10	7	11
31005	11/02/2009	1126	2618.25	-9705.53	21	18.6	6.5	6.2	5.8	35.8	35.8	35.9	24.7	24.5	24.0	0.171	0	0.072	10	9	16
31006	11/02/2009	1207	2620.67	-9709.55	21	16.5	6.6	6.7	6.2	35.7	35.6	35.6	25.4	24.3	24.2	0.435	0.021	0.027	10	8	33
31007	11/02/2009	1243	2617.12	-9709.48	21	14.9	6.6	6.9	6.8	35.7	35.7	35.7	24.7	24.2	24.1	0.031	0.002	0.049	10	7	30
31008	11/02/2009	1324	2613.65	-9708.48	21	15.5	6.8	6.6	6.5	35.3	35.7	35.8	24.6	23.9	23.9	0.053	0.012	0.029	10	8	34
31009	11/18/2009	820	2603.10	-9707.43	21	13.1	7.6	7.4	5.8	32.3	32.8	33.6	21.7	21.8	21.6	0.007	0.001	0.742	10	5	4
31010	11/18/2009	856	2603.57	-9705.53	21	18.3	7.2	6.8	6.8	32.0	32.3	33.1	21.9	22.0	22.1	1.710	0.008	0.926	10	16	74
31011	11/18/2009	952	2558.28	-9706.45	21	15.8	6.5	6.7	5.9	32.3	32.3	33.1	21.8	21.9	22.0	0.520	0.017	3.451	10	17	67
31012	11/18/2009	1032	2600.75	-9704.45	21	19.8	6.7	6.9	5.9	32.3	32.3	32.8	22.0	22.0	21.5	1.933	0.052	0.336	10	24	67
31013	11/18/2009	1112	2602.35	-9703.40	21	21.6	7.4	6.9	7.5	32.4	33.4	33.2	22.1	22.0	21.7	0.538	0.046	0.185	10	25	81
31014	11/18/2009	1157	2605.72	-9700.57	21	25.3	6.9	6.9	6.5	32.3	32.8	33.2	22.9	22.2	22.2	1.301	0.085	0.106	10	23	93
31015	11/18/2009	1240	2608.27	-9700.47	21	25.6	7.6	6.4	7.4	32.6	32.6	35.7	22.1	22.5	21.8	2.671	0.031	0.090	10	21	97
31016	11/18/2009	1322	2608.73	-9703.52	21	20.1	7.6	6.8	6.5	32.4	32.8	33.0	22.0	22.1	22.0	1.119	0.046	0.094	10	15	80
32 MATAGORDA BAY																					
32001	11/02/2009	858	2828.08	-9614.37	19	6.6	7.5	7.4	7.4	28.6	28.5	28.5	21.4	21.4	21.4	0.119	0	0.470	10	8	35
32002	11/02/2009	929	2827.57	-9612.50	19	10.1	6.9	7.1	7.0	28.7	28.7	28.7	21.8	21.8	21.8	0.146	0.008	25.324	10	8	26
32003	11/02/2009	1019	2828.50	-9609.55	19	11.7	6.9	6.9	6.9	28.6	28.6	28.6	22.0	22.0	21.9	0.558	0	0.813	10	8	34
32004	11/02/2009	1108	2830.45	-9606.50	19	10.9	6.9	7.1	6.9	28.4	28.5	29.0	22.1	22.0	22.2	0.707	0	0.740	10	14	62
32005	11/02/2009	1158	2826.48	-9603.53	19	16.4	6.9	7.0	6.6	29.3	29.5	30.0	22.4	22.1	22.7	0.148	0	0.095	10	5	10
32006	11/02/2009	1229	2824.42	-9604.45	19	18.3	6.9	6.9	6.3	29.9	29.9	30.2	22.7	22.5	22.7	1.856	0	0.131	10	11	76
32007	11/02/2009	1310	2822.55	-9608.33	19	18.6	6.8	6.9	6.7	30.3	30.4	30.5	22.8	22.7	22.7	0.619	0.009	0.033	10	7	29
32008	11/02/2009	1350	2825.52	-9612.55	19	13.9	6.9	7.0	7.0	28.8	29.4	29.7	22.3	22.2	22.2	0.001	0	0.088	10	4	16
32009	11/18/2009	910	2822.57	-9620.45	19	8.2	6.5	6.8	6.8	30.0	30.0	30.0	21.3	21.2	21.0	0.879	0.008	0	10	7	37
32010	11/18/2009	931	2821.52	-9618.50	19	13.1	7.2	5.7	4.8	29.8	30.0	33.5	21.2	21.4	22.6	0.373	0	0.538	10	11	36
32011	11/18/2009	1012	2818.58	-9623.50	19	11.5	6.2	6.3	4.4	30.1	30.2	33.3	21.5	21.7	22.8	0.604	0.014	0.571	10	17	36
32012	11/18/2009	1050	2816.60	-9624.50	19	14.3	7.1	6.5	3.8	29.8	30.0	34.2	21.3	21.5	23.2	0.716	0.009	0.972	10	18	35
32013	11/18/2009	1125	2817.28	-9628.45	19	6.5	6.5	6.8	6.6	30.0	29.9	30.0	21.4	21.1	21.0	0.780	0.009	0.860	10	11	51
32014	11/18/2009	1152	2815.47	-9627.40	19	12.4	6.7	7.2	5.2	29.8	29.8	31.8	21.4	21.2	22.4	0.053	0.001	0.438	10	12	31
32015	11/18/2009	1313	2814.60	-9618.55	19	21.6	6.9	6.8	5.1	30.5	30.5	35.7	21.6	21.4	24.0	2.001	0.009	0.003	10	11	41
32016	11/18/2009	1401	2821.65	-9612.50	19	17.6	7.0	7.1	4.9	29.6	29.9	34.9	21.9	21.5	23.8	0.019	0	0.048	10	4	4

**Table 1. (cont.)**

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO			SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
40 SABINE																					
40001	11/02/2009	852	2938.40	-9355.25	17	4.8	6.8	6.1	5.0	21.4	23.4	25.6	19.8	20.4	21.0	5.097	2.871	4.768	10	16	142
40002	11/02/2009	927	2938.42	-9356.97	17	5.2	6.6	6.2	5.9	21.7	24.8	25.4	20.5	20.6	20.9	1.428	0.377	2.857	10	17	82
40003	11/02/2009	956	2939.45	-9356.15	17	4.3	7.0	5.3	5.2	21.6	25.5	25.4	20.6	20.9	20.9	3.801	0.601	5.982	10	11	119
40004	11/02/2009	1033	2940.22	-9358.80	17	3.3	7.2	6.3	5.7	21.0	21.4	22.6	20.6	20.6	20.7	2.088	5.119	0.006	10	12	92
40005	11/02/2009	1112	2938.50	-9402.22	17	6.1	7.2	6.0	5.8	22.4	25.6	25.7	20.6	20.7	20.8	1.359	0.126	1.743	10	16	55
40006	11/02/2009	1140	2937.40	-9402.95	17	7.0	6.7	6.2	5.6	23.1	23.7	25.8	21.0	20.9	20.9	1.434	0.011	0.724	10	11	36
40007	11/02/2009	1213	2936.43	-9400.22	17	7.6	6.6	6.1	5.5	22.7	24.1	25.9	21.2	21.0	21.2	1.807	0.188	4.085	10	14	60
40008	11/02/2009	1251	2933.40	-9400.92	17	11.0	6.5	5.7	5.2	23.5	27.0	28.3	21.0	21.4	22.1	1.450	0	0.288	10	10	59
40009	11/18/2009	834	2936.50	-9354.35	17	6.1	7.2	5.8	5.4	20.8	25.6	26.5	17.7	20.0	20.5	3.203	0	1.926	10	8	42
40010	11/18/2009	905	2935.53	-9355.92	17	7.3	6.2	5.1	4.9	23.8	28.0	28.6	19.4	20.7	21.1	5.725	0	6.733	10	8	43
40011	11/18/2009	1003	2934.37	-9347.20	17	11.5	6.7	5.5	5.3	23.6	28.2	28.7	19.4	21.1	21.4	3.168	0.045	0.116	10	12	38
40012	11/18/2009	1048	2936.65	-9342.75	17	10.4	6.8	6.2	5.5	22.4	26.8	27.7	20.0	21.3	21.6	2.402	0.023	28.637	10	11	56
40013	11/18/2009	1132	2937.75	-9340.10	17	10.0	6.8	5.8	5.4	21.5	25.3	26.1	20.0	20.6	20.8	3.483	0.048	26.522	10	13	47
40014	11/18/2009	1219	2941.57	-9338.83	17	7.9	6.6	5.2	5.4	23.0	26.7	26.4	20.3	21.3	21.2	2.773	0.017	0.654	10	15	40
40015	11/18/2009	1256	2941.53	-9335.05	17	8.5	7.0	6.8	5.8	21.3	22.5	26.8	19.8	20.1	20.7	3.033	0.023	0.206	10	9	32
40016	11/18/2009	1333	2939.57	-9334.18	17	10.0	7.3	6.3	6.0	20.5	23.3	26.9	19.8	20.6	20.8	6.586	0.017	0.179	10	10	43
67 NUECES																					
67001	11/02/2009	748	2743.72	-9705.43	20	12.0	6.5	6.3	6.8	28.2	28.2	28.2	22.9	23.0	23.0	0.478	0.055	0	10	9	34
67002	11/02/2009	817	2743.08	-9707.60	20	8.5	7.6	6.9	6.8	26.0	28.1	28.1	22.6	22.6	22.6	0.248	0	0.157	10	7	35
67003	11/02/2009	856	2739.63	-9709.45	20	10.0	7.1	7.1	7.2	28.3	28.3	28.3	22.6	22.6	22.6	0.224	0	0.057	10	5	18
67004	11/02/2009	942	2737.08	-9704.58	20	19.1	7.5	6.8	6.8	28.3	28.4	28.6	22.9	23.0	23.2	0.196	0	2.369	10	9	26
67005	11/02/2009	1011	2736.63	-9703.60	20	20.6	6.8	6.8	6.8	28.7	28.7	28.8	23.2	23.2	23.4	1.124	0	0.710	10	15	77
67006	11/02/2009	1047	2736.18	-9701.58	20	23.5	6.6	6.6	6.6	29.4	29.4	29.4	23.9	23.9	23.9	0.475	0.007	0.279	10	10	34
67007	11/02/2009	1135	2740.90	-9705.53	20	15.0	6.9	6.9	6.9	28.3	28.4	28.4	23.1	23.1	23.1	2.922	0	0.193	10	10	70
67008	11/02/2009	1212	2740.08	-9703.68	20	17.8	6.8	6.8	6.8	28.5	28.5	28.5	23.1	23.1	23.1	0.497	0	0.103	10	7	55
67009	11/17/2009	757	2754.90	-9656.32	20	12.0	7.2	7.2	6.5	27.4	27.4	28.4	21.6	21.8	22.1	0.243	0	0.860	10	12	52
67010	11/17/2009	827	2754.23	-9654.00	20	14.5	7.1	6.9	6.2	27.8	27.8	29.0	21.7	21.8	22.6	0.719	0.007	0.561	10	13	80
67011	11/17/2009	856	2753.77	-9652.40	20	16.8	7.2	7.1	6.6	27.9	27.9	28.4	21.8	21.8	22.5	1.289	0	0.564	10	14	103
67012	11/17/2009	931	2752.05	-9654.65	20	16.2	7.3	7.3	7.2	28.0	28.0	28.0	21.8	21.8	21.8	0.507	0.007	0.222	10	15	67
67013	11/17/2009	1003	2749.80	-9654.47	20	18.8	7.2	7.1	6.3	27.9	27.9	29.6	21.7	21.7	22.8	0.694	0.003	0.241	10	13	60
67014	11/17/2009	1041	2745.08	-9654.53	20	22.2	7.5	7.3	7.2	20.4	22.8	29.1	22.0	22.1	21.8	0.351	0.070	0.215	10	12	37
67015	11/17/2009	1134	2741.75	-9701.82	20	18.4	7.4	7.4	7.2	27.7	27.7	28.2	21.8	21.8	22.0	0.177	0.005	3.098	10	15	49
67016	11/17/2009	1205	2742.15	-9702.25	20	17.6	7.4	7.3	7.2	27.7	28.0	28.3	21.7	22.0	21.9	0.377	0.004	2.352	10	15	83

**Table 1. (cont.)**

STA#	DATE	TIME	LAT	LONG	STAT	MAX	DO			SALINITY			TEMPERATURE			FIN	CRUS	OTHER	MIN	BIO	LENGTH
					ZONE	DEPTH	SUR	MID	MAX	SUR	MID	MAX	SUR	MID	MAX	CATCH	CATCH	CATCH	FISHED	COUNT	COUNT
69 SAN JACINTO																					
69001	11/04/2009	1002	2914.73	-9445.47	18	9.4	7.1	7.0	7.0	28.2	28.2	28.2	20.8	20.8	20.7	0.958	0.122	3.090	10	16	46
69002	11/04/2009	1037	2913.18	-9447.75	18	10.5	7.2	9.2	6.8	26.7	27.4	27.7	20.3	20.4	20.6	0.468	0.045	3.066	10	12	24
69003	11/04/2009	1117	2913.63	-9453.12	18	3.1	8.7	8.6	8.0	25.4	25.4	25.5	20.4	20.3	20.1	0.024	0	0.850	10	3	2
69004	11/04/2009	1206	2910.17	-9447.82	18	14.2	6.9	6.8	6.3	28.7	28.7	29.7	21.2	21.0	21.3	2.963	0.135	0.222	10	17	64
69005	11/04/2009	1239	2909.72	-9450.25	18	13.7	7.4	6.8	6.1	27.3	28.0	29.8	20.7	20.7	21.3	2.262	0.084	0.101	10	15	69
69006	11/04/2009	1320	2907.27	-9449.87	18	15.9	6.8	6.7	6.4	29.5	29.7	30.6	21.5	21.4	21.6	3.408	0.013	0.006	10	10	36
69007	11/04/2009	1402	2906.52	-9447.78	18	17.0	6.5	6.5	6.4	29.8	30.0	31.2	21.7	21.5	21.7	0.131	0.011	0.133	10	10	20
69008	11/04/2009	1503	2910.27	-9442.87	18	16.5	6.5	6.4	6.5	29.8	29.8	30.9	21.8	21.6	21.8	0.707	0.081	1.401	10	8	29
69009	11/17/2009	953	2922.23	-9441.50	18	5.3	7.1	7.1	7.0	24.2	24.2	24.2	19.2	19.2	19.2	2.170	0.057	1.808	10	16	75
69010	11/17/2009	1054	2925.63	-9433.03	18	8.4	6.6	6.6	6.5	27.7	27.6	27.7	19.5	19.5	19.4	1.697	0.022	0.286	10	16	92
69011	11/17/2009	1138	2927.07	-9434.45	18	6.0	5.6	5.5	5.4	28.9	29.0	29.1	20.1	20.1	20.0	0.275	0.030	0.132	10	9	29
69012	11/17/2009	1219	2928.85	-9430.07	18	6.4	6.7	6.4	5.4	28.0	28.2	30.3	20.2	20.4	21.2	0.169	0.087	0.289	10	12	23
69013	11/17/2009	1327	2920.38	-9431.63	18	12.8	7.1	7.0	6.8	19.7	19.9	23.0	19.6	19.7	19.9	7.725	0.085	0.237	10	13	38
69014	11/17/2009	1415	2920.57	-9433.05	18	12.2	7.2	7.0	6.4	17.5	19.1	30.2	19.2	19.4	20.5	8.837	0.118	0.013	10	10	39
69015	11/17/2009	1513	2915.18	-9436.52	18	15.0	7.5	7.4	6.7	25.5	25.7	29.8	19.5	19.6	20.7	3.955	0.115	0.001	10	10	53
69016	11/17/2009	1555	2917.73	-9439.08	18	11.3	7.7	6.9	6.1	16.5	24.1	31.0	18.8	19.5	19.9	3.518	0.092	0.070	10	11	53