

## **Florida SEAMAP Summer 2018 Survey Cruise Report (6/13/18 – 6/29/18)**

*Cruise Number 171802 using the R/V Tommy Munro*

*Prepared by:*

*Ted Switzer*

*Florida Fish and Wildlife Conservation Commission*

*Fish and Wildlife Research Institute*

*100 8<sup>th</sup> 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 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 prioritize summer sampling over fall. 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 some important taxa (i.e., red snapper), and so the fall Florida SEAMAP trawl survey will also be conducted contingent upon the availability of funding.

### **Objectives**

1. Select a subset of stations generated by GSMFC to sample in the eastern Gulf of Mexico.
2. Conduct a trawl survey to collect information on shrimp and groundfish abundance/distribution with standard SEAMAP 42-foot trawls.
3. Collect information on net geometry by incorporating net mensuration sensors on trawls less than 100ft in depth.
4. Identify, weigh, count, and measure all species according to protocols outlined in the SEAMAP Operations Manual.
5. Collect information on environmental parameters (salinity, temperature, dissolved oxygen, wind speed and direction, wave height, precipitation) in conjunction with trawl sampling.
6. Code all data according to approved SEAMAP Operations Manual guidelines, and enter data in the SEAMAP data entry system.
7. 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 trawling sites were chosen following a simple random survey design.

At each trawl station, samples were collected using a standard 42-foot SEAMAP 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 Operation Manual guidelines. In addition, specimens were retained to validate field identifications and provide biological material for various life-history studies (e.g., 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 summer 2018 survey, Florida sampled a total of 135 stations, resulting in 134 trawl stations with reportable catch. Two trawl stations were labeled as not representative due to gear damage. One of these trawl stations lost all reportable catch and was not worked up. The other trawl station with reportable catch was worked up per the new SEAMAP protocols from Gulf States Marine Fisheries Commission. Net geometry data were recorded on 24 trawls and will be analyzed to determine area / volume sampled. Total catch weight from the trawls was 6545.8 kg. Individual trawl catch weights ranged from 1.1 kg to 468.5 kg. There were 76,656 animals collected, including 2,194 pink shrimp (*Farfantepenaeus duorarum*), 41 red snapper (*Lutjanus campechanus*), and 208 lionfish (*Pterois* spp.), which occurred in 42 of the 134 stations (31% occurrence) with reportable catch. The three most abundant species collected were Atlantic calico scallop

(*Argopecten gibbus*, n=30,411; 7% occurrence), dusky flounder (*Syacium papillosum*, n=5,369; 72% occurrence), and Ravenel's scallop (*Euvola raveneli*, n=3,257; 11% occurrence).

In addition to following standard SEAMAP sampling protocols, we collected ancillary material for various life history studies. Otoliths were removed from 920 fishes for aging analyses, including 691 Lutjanids, 38 Serranids and 112 lionfish. In addition, 19 spines were removed from *Balistes capriscus* for alternative aging techniques. Gonads were removed from 19 fish for reproductive staging and four fin clips were taken for genetic analysis. Tissue samples were collected from 863 fish for mercury analyses and 1209 stomachs were removed for dietary analyses from a wide variety of managed and non-managed species. Sixty samples were also collected for cooperative research requests from various state institutions including: University of Florida, University of South Florida, Florida International University, University of Southern Mississippi, and the Florida Department of Agriculture and Consumer Services.

### **Quality Control**

A total of 3,777 animals were frozen or preserved and brought back to FWRI. Of those animals, 1,406 fishes were kept as representative samples and an additional 539 fishes were brought back to be further identified in the lab. In addition to fishes, 1,832 invertebrates were brought back for confirmation or identification.

### **Deviations**

Two trawl stations were sampled and aborted due to hard bottom and/or gear damage. One trawl with reportable catch was worked up and one trawl without reportable catch was not worked up. A total of 23 trawl stations were randomly selected and dropped to maximize the spatial distribution of sampling effort and account for lost sampling days during the NMFS cruises. All stations sampled were completed according to the NMFS SEAMAP protocol.

### **Cruise participants**

Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, University of Florida, and Florida International University personnel collected all samples. Sample summary and data entry were completed by Ryan Jones.

Submitted By:

*Ted Switzer*

SEAMAP Coordinator

**Table 1. Florida SEAMAP Summer 2018 Shrimp/Groundfish Cruise Summary**

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802001	E0811	06/13/2018 22:44:17	2923.08	8552.76	52	51	3.1	30.0	20.6
SMP171802002	E0814	06/14/2018 2:52:05	2901.42	8530.75	74	63	3.1	30.0	41.8
SMP171802003	E0813	06/14/2018 5:55:21	2906.91	8510.41	36	35	3.0	30.1	468.5
SMP171802004	E0714	06/14/2018 9:16:54	2917.49	8453.27	27	26	3.0	30.0	23.0
SMP171802005	E0715	06/14/2018 11:27:36	2911.36	8441.53	33	32	3.1	30.0	79.5
SMP171802006	E0719	06/14/2018 13:30:07	2903.38	8440.04	34	33	3.1	30.1	90.5
SMP171802007	E0601	06/14/2018 15:36:43	2900.16	8447.51	39	38	3.1	30.0	14.8
SMP171802008	E0717	06/14/2018 17:26:52	2904.26	8453.21	35	37	3.1	30.1	18.0
SMP171802009	E0612	06/14/2018 20:28:44	2843.14	8451.66	49	49	3.2	30.0	10.4
SMP171802010	E0625	06/15/2018 0:31:21	2821.32	8428.9	55	57	3.0	30.0	32.2

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802011	E0627	06/15/2018 3:18:15	2807.78	8417.06	53	46	3.2	30.0	36.1
SMP171802012	E0630	06/15/2018 5:22:43	2800.53	8409.56	48	47	3.1	30.0	33.6
SMP171802013	E0502	06/15/2018 7:02:07	2757.81	8410.1	50	48	3.0	30.0	39.8
SMP171802014	E0503	06/15/2018 9:38:44	2756.33	8425.05	78	78	3.1	30.0	41.8
SMP171802015	E0507	06/15/2018 12:07:01	2745.95	8426.86	100	100	3.0	30.0	10.8
SMP171802016	E0509	06/15/2018 14:42:30	2737.23	8418.43	79	76	3.2	30.0	26.5
SMP171802017	E0512	06/15/2018 16:46:12	2730.91	8415.14	81	83	3.1	30.0	9.5
SMP171802018	E0513	06/15/2018 19:02:54	2723.24	8407.86	77	80	3.2	30.0	17.2
SMP171802019	E0516	06/15/2018 20:42:10	2720.37	8412.49	81	80	3.0	30.0	9.0
SMP171802020	E0523	06/15/2018 23:28:03	2709.49	8400.18	75	78	3.2	30.0	19.0
SMP171802021	E0524	06/16/2018 1:01:10	2705.21	8400.79	83	76	3.1	30.0	42.4

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802022	E0526	06/16/2018 3:35:59	2703.19	8346.08	55	55	3.1	30.0	32.4
SMP171802023	E0522	06/16/2018 5:34:12	2713.72	8341.09	52	51	3.1	30.0	46.9
SMP171802024	E0527	06/16/2018 8:28:58	2700.85	8333.48	53	53	3.0	30.1	92.6
SMP171802025	E0402	06/16/2018 10:53:11	2651.67	8332.15	55	55	3.0	30.0	170.5
SMP171802026	E0404	06/16/2018 13:13:45	2648.08	8342.35	67	65	3.2	30.0	29.9
SMP171802027	E0407	06/16/2018 15:27:33	2644.5	8351.2	78	80	3.2	30.1	28.7
SMP171802028	E0412	06/16/2018 17:39:37	2636.63	8357.02	110	106	3.1	30.2	13.5
SMP171802029	E0416	06/16/2018 20:17:31	2632.88	8342.02	70	68	3.1	30.2	11.2
SMP171802030	E0420	06/16/2018 22:27:44	2623.06	8340.68	68	72	3.1	30.0	23.8
SMP171802031	E0418	06/17/2018 2:13:05	2625.08	8326.49	55	55	3.2	30.0	58.4
SMP171802032	E0424	06/17/2018 5:11:17	2607.32	8320.62	55	56	3.0	30.0	51.9

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802033	E0427	06/17/2018 7:02:58	2604.13	8326.09	60	60	3.1	30.0	42.9
SMP171802034	E0302	06/17/2018 8:50:07	2600.28	8330.72	63	66	3.0	30.0	39.7
SMP171802035	E0429	06/17/2018 10:43:11	2601.97	8340.12	69	68	3.1	30.0	25.6
SMP171802036	E0304	06/17/2018 12:55:11	2556.27	8336.98	70	70	2.9	30.1	102.9
SMP171802037	E0308	06/17/2018 14:50:08	2551.91	8336.61	73	67	3.0	30.0	36.5
SMP171802038	E0319	06/17/2018 18:57:10	2533.66	8342.88	84	94	3.2	30.1	8.7
SMP171802039	E0324	06/17/2018 22:16:34	2523.85	8333.62	73	73	3.2	30.0	17.8
SMP171802040	E0330	06/18/2018 0:55:46	2510.58	8341.92	86	84	3.2	30.0	29.4
SMP171802041	E0325	06/18/2018 4:08:30	2523.98	8327.38	68	68	3.1	30.1	21.9
SMP171802042	E0322	06/18/2018 6:02:25	2526.91	8319.71	61	64	3.1	30.0	135.5
SMP171802043	E0317	06/18/2018 8:18:18	2536.13	8322.67	63	64	3.2	30.0	38.7

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802044	E0316	06/18/2018 11:11:27	2537.58	8308.03	54	56	3.0	30.0	18.7
SMP171802045	E0326	06/18/2018 14:20:33	2518.91	8300.44	52	53	3.1	30.1	265.5
SMP171802046	E0335	06/18/2018 18:02:58	2501.7	8323.45	65	66	3.1	30.0	58.7
SMP171802047	E0202	06/18/2018 19:47:55	2456.81	8318.86	62	63	3.2	30.0	5.0
SMP171802048	E0208	06/18/2018 22:40:47	2439.22	8329.22	62	62	3.1	30.0	1.1
SMP171802049	E0205	06/19/2018 2:31:30	2451.4	8308.42	55	53	3.2	30.0	31.4
SMP171802050	E0336	06/19/2018 4:52:11	2501.06	8259.29	49	49	3.0	30.0	200.1
SMP171802051	E0201	06/19/2018 7:02:13	2459.16	8256.77	47	48	3.0	30.0	176.2
SMP171802052	E0206	06/19/2018 9:33:02	2449.76	8252.53	40	43	3.1	30.0	15.9
SMP171802053	E0207	06/19/2018 11:59:41	2448.75	8239.94	31	31	3.0	30.0	11.2
SMP171802054	E0204	06/19/2018 13:46:42	2455.25	8238.96	33	34	3.1	30.1	14.5

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802055	E0333	06/19/2018 17:51:51	2508.09	8229.28	33	33	3.2	30.0	49.6
SMP171802056	E0331	06/19/2018 19:23:08	2511.15	8231.78	35	35	3.1	30.1	60.8
SMP171802057	E0327	06/19/2018 20:51:41	2517.42	8233.04	34	33	3.1	30.0	30.9
SMP171802058	E0328	06/19/2018 23:53:57	2516.29	8214.63	25	26	3.0	30.1	55.0
SMP171802059	E0332	06/20/2018 1:20:04	2509.57	8215.18	26	26	3.1	30.1	24.5
SMP171802060	E0334	06/20/2018 3:10:53	2504.37	8216.46	25	25	3.0	30.0	97.0
SMP171802061	E0203	06/20/2018 5:38:34	2456.07	8208.55	21	21	3.1	30.0	54.2
SMP171802062	E0337	06/20/2018 8:12:24	2500.09	8150.66	17.8	17	3.2	30.0	84.2
SMP171802063	E0323	06/20/2018 12:00:05	2525.68	8157.29	18.7	17.2	3.1	30.1	440.2
SMP171802064	E0318	06/20/2018 14:59:17	2534.52	8209.43	23	23	3.1	30.0	0.0
SMP171802065	E0321	06/20/2018 18:09:47	2532.58	8230.61	34	33	3.1	30.0	182.7

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802066	E0315	06/20/2018 20:28:23	2544.34	8231.32	33	33	3.1	30.1	130.8
SMP171802067	E0310	06/20/2018 22:20:36	2547.1	8241.28	36	35	3.1	30.0	156.6
SMP171802068	E0307	06/21/2018 1:21:51	2551.45	8301.14	49	50	3.3	30.0	70.0
SMP171802069	E0311	06/21/2018 3:23:27	2547.28	8309.31	55	54	3.2	30.0	80.0
SMP171802070	E0306	06/21/2018 5:10:15	2553.14	8307.9	53	53	3.1	30.1	18.5
SMP171802071	E0426	06/21/2018 7:29:53	2604.59	8305.33	50	50	3.0	30.0	44.1
SMP171802072	E0423	06/21/2018 9:33:57	2611.33	8253.91	39	38	3.0	30.0	20.7
SMP171802073	E0515	06/23/2018 6:46:58	2720.59	8244.38	11.3	11.3	3.0	30.0	70.3
SMP171802074	E0519	06/23/2018 9:38:44	2716.88	8259.15	24	23	3.1	30.0	24.3
SMP171802075	E0520	06/23/2018 11:41:44	2715.23	8245.3	13.8	16.5	3.0	30.0	6.0
SMP171802076	E0521	06/23/2018 13:32:58	2713.44	8237.02	9.8	10.5	3.0	30.0	204.5

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802077	E0431	06/23/2018 16:18:36	2657.6	8241.36	20	20	3.0	30.0	16.3
SMP171802078	E0401	06/23/2018 18:34:26	2654.27	8253.48	31	32	3.1	30.0	18.6
SMP171802079	E0406	06/23/2018 20:41:03	2645.76	8246.41	27	27	3.1	30.0	7.9
SMP171802080	E0417	06/23/2018 23:44:02	2627.37	8249.69	32	32	3.2	30.1	13.7
SMP171802081	E0414	06/24/2018 1:50:49	2634.67	8242.82	26	25	3.2	30.0	287.9
SMP171802082	E0411	06/24/2018 3:41:31	2636.39	8234.87	22	21	3.2	30.0	33.7
SMP171802083	E0422	06/24/2018 7:07:12	2616.3	8218.62	15.1	16.7	3.1	30.0	45.2
SMP171802084	E0430	06/24/2018 10:06:24	2600.75	8211.85	18	18.9	3.1	30.0	138.7
SMP171802085	E0301	06/24/2018 12:19:08	2559.59	8201.83	16	16.5	3.1	30.0	43.7
SMP171802086	E0309	06/24/2018 15:56:10	2549.72	8226.45	30	29	3.1	30.0	61.3
SMP171802087	E0305	06/24/2018 17:53:11	2554.34	8237.68	34	35	3.3	30.0	165.7

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802088	E0303	06/24/2018 19:56:38	2559.05	8229.7	27	29	3.2	30.1	43.9
SMP171802089	E0428	06/24/2018 21:20:35	2603.61	8234.58	29	26	3.1	30.0	40.5
SMP171802090	E0425	06/25/2018 0:03:57	2605.44	8229.63	24	25	3.3	30.0	14.0
SMP171802091	E0413	06/25/2018 6:13:22	2635.33	8316.55	48	50	3.2	30.1	11.7
SMP171802092	E0410	06/25/2018 7:44:20	2639.75	8322.03	52	51	3.1	30.0	14.5
SMP171802093	E0408	06/25/2018 9:20:45	2642.37	8315.47	47	49	3.1	30.0	23.4
SMP171802094	E0409	06/25/2018 11:25:46	2641.53	8306.13	40	42	3.1	30.0	1.2
SMP171802095	E0405	06/25/2018 13:20:01	2647.86	8301.21	38	35	3.0	30.0	84.3
SMP171802096	E0525	06/25/2018 16:16:59	2703.18	8311.37	41	42	3.2	30.0	5.6
SMP171802097	E0511	06/25/2018 20:10:31	2730.94	8318.72	34	34	3.2	30.1	31.6
SMP171802098	E0510	06/25/2018 21:40:17	2735.93	8323.69	35	34	3.2	30.0	16.6

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802099	E0508	06/25/2018 23:22:12	2743.19	8318	30	28	3.2	30.0	10.6
SMP171802100	E0505	06/26/2018 1:31:00	2752.33	8305.38	18.2	16.5	3.2	30.0	11.6
SMP171802101	E0506	06/26/2018 5:01:19	2746.78	8331.37	34	27	3.1	30.0	32.5
SMP171802102	E0504	06/26/2018 7:24:03	2752.01	8347.79	43	43	3.1	30.0	43.9
SMP171802103	E0501	06/26/2018 8:56:06	2759.49	8349.02	41	42	2.7	30.0	28.2
SMP171802104	E0628	06/26/2018 12:18:35	2804.24	8325.04	25	28	3.0	30.0	19.1
SMP171802105	E0624	06/26/2018 15:09:44	2823.76	8325.37	22	24	3.1	30.0	6.6
SMP171802106	E0622	06/26/2018 17:15:08	2826.05	8339.67	29	29	3.1	30.0	5.0
SMP171802107	E0620	06/26/2018 19:02:10	2830.87	8349.33	31	32	3.1	30.0	2.1
SMP171802108	E0619	06/26/2018 21:24:19	2834.46	8404.89	35	33	3.1	30.0	3.7
SMP171802109	E0616	06/26/2018 22:57:58	2841.3	8404.13	32	36	3.0	30.0	10.4

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802110	E0610	06/27/2018 0:55:30	2844.91	8416.61	36	35	3.1	30.0	22.9
SMP171802111	E0621	06/27/2018 3:58:48	2827.27	8426.18	51	47	3.2	30.0	9.8
SMP171802112	E0618	06/27/2018 5:54:06	2834.27	8434.93	53	51	3.1	30.0	8.0
SMP171802113	E0614	06/27/2018 7:41:03	2842.49	8429.45	42	42	3.1	30.0	21.9
SMP171802114	E0607	06/27/2018 9:21:24	2851.46	8426.94	37	38	3.1	30.0	7.2
SMP171802115	E0605	06/27/2018 11:29:32	2855.69	8438.32	40	39	3.2	30.1	3.9
SMP171802116	E0718	06/27/2018 13:44:06	2903.58	8423.6	30	30	3.1	30.0	6.1
SMP171802117	E0716	06/27/2018 15:14:39	2909.97	8419.58	29	30	3.1	30.1	1.4
SMP171802118	E0713	06/27/2018 16:55:15	2919.22	8418.06	28	29	3.2	30.0	9.6
SMP171802119	E0712	06/27/2018 19:29:55	2919.58	8433.84	29	30	3.2	30.0	15.5
SMP171802120	E0710	06/27/2018 21:22:27	2922.51	8441.81	29	30	3.2	30.0	9.6

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802121	E0705	06/28/2018 1:37:13	2933.94	8443.79	16.9	16.9	2.9	30.0	14.0
SMP171802122	E0702	06/28/2018 3:32:11	2939.71	8435.06	16.7	16.5	3.1	30.0	46.7
SMP171802123	E0703	06/28/2018 5:10:20	2937.28	8426.33	18.8	17	3.2	30.0	10.2
SMP171802124	E0709	06/28/2018 7:57:21	2924.18	8417.96	26	26	3.0	30.0	28.7
SMP171802125	E0708	06/28/2018 12:21:01	2925.82	8407.17	23	23	3.1	30.0	2.9
SMP171802126	E0707	06/28/2018 14:05:44	2929.28	8356.59	19.5	18.8	3.1	30.0	6.3
SMP171802127	E0706	06/27/2018 23:43:00	2930.37	8434.41	22	22	3.0	30.0	5.3
SMP171802128	E0711	06/28/2018 16:40:33	2921.68	8336.89	13.8	14.2	3.1	30.0	1.7
SMP171802129	E0602	06/28/2018 20:00:39	2859.47	8339.32	20	20	3.0	30.0	7.2
SMP171802130	E0603	06/28/2018 22:59:55	2856.84	8316.96	10.4	11.4	3.2	30.0	15.9
SMP171802131	E0606	06/29/2018 0:58:59	2853.74	8327.08	17.1	17.6	3.2	30.0	46.5

SEAMAP SEQUENCE NUMBER	SEAMAP STATION NUMBER	START TIME (GMT)	START LAT	START LONG	START DEPTH (m)	END DEPTH (m)	SPEED (knts)	TOW TIME (min)	CATCH TOTAL (kg)
SMP171802132	E0608	06/29/2018 2:52:22	2849.29	8332.42	21	20	3.0	30.0	31.4
SMP171802133	E0617	06/29/2018 4:59:44	2838.79	8338.46	24	23	3.0	30.0	25.2
SMP171802134	E0611	06/29/2018 7:54:35	2844.23	8320.03	19	17.7	3.0	30.0	17.8
SMP171802135	E0613	06/29/2018 10:38:52	2842.33	8305.93	10.5	10.6	3.1	30.0	28.8