

Resource Survey Report



Georges Bank Pilot Flatfish Survey

15 August – 26 August 2013

F/V *Mary K* & F/V *Yankee Pride*

NOAA Fisheries Service
Northeast Fisheries Science Center
Woods Hole, MA 02543



F/V *Mary K*,
New Bedford, MA.



F/V *Yankee Pride*,
Pt. Judith, RI.



Basket of yellowtail flounder (*Limanda ferruginea*) waiting to be measured.

RESOURCE SURVEY REPORT

Catch Summary

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This report consists of field notes, station and catch summaries and a series of geographical plots of yellowtail and winter flounder caught during the Northeast Fisheries Science Center's 2013 Georges Bank pilot flatfish survey conducted by the F/V *Mary K*, New Bedford, MA and the F/V *Yankee Pride*, Pt. Judith, RI. Tows were made using a modified version of a survey net built by Superior Trawl, Narragansett, RI for an industry-based survey of southern New England yellowtail flounder conducted between 2003 and 2005.

The net is a two-seam, two-bridle flounder net which utilized a sweep consisting of 4" rubber cookies, 20 fathom bridles, and 5 fathom extensions. Two modifications were made to the 2003-2005 survey net: the twine in the lower wings and first belly was reduced from 20 cm to 12 cm, and a 1" stretched mesh codend liner was installed. Both of these modifications were intended to improve the capture of smaller flounder, ensuring that the youngest fish in the population would be represented in survey catches. Both vessels used 734 kg Thyboron type IV 84" trawl doors and utilized a 23 fathom restrictor wire between the doors to ensure consistency in door spread.

The U.S. portion of Georges Bank was divided into "high density" and "low density" strata based on input from fisherman and previously collected survey and observer data for yellowtail flounder. Stations were randomly selected within each stratum, with higher sampling intensity in the high density strata. At randomly selected locations, a 20 minute tow at a target speed of 2.8 knots was conducted. At locations where the seafloor would not allow a tow to be completed with the chosen gear, the nearest towable area was selected by the captain and towed instead.

The data presented in this report have been summarized from audited catch files generated from the Fisheries Scientific Computer System (FSCS).

For further information contact Michael Martin (508-495-2106) or Rob Johnston (508-495-2061), NOAA Fisheries Service, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543. To view this report in PDF go the Ecosystems Surveys Branch website at: <http://www.nefsc.noaa.gov/esb> and choose:

- Resource Survey Reports
 - Available RSR
 - Select season and year of interest

Field Notes

In an effort to share some of the natural history observations made during the Georges Bank pilot flatfish survey, we have requested that the Chief Scientists on each part of the cruise comment on some of the more interesting catches that were brought aboard the fishing vessels' *Mary K & Yankee Pride*.

Juvenile haddock baby boom?

In the southeastern portions of the study area, tows were comprised primarily of juvenile haddock (*Melanogrammus aeglefinus*). It was quite amazing to see the large numbers of these juvenile fish. Perhaps this portends another large year class.

Large catches of Sea Scallops.

In the northeastern portions of the survey area, large catches of sea scallops (*Placopecten magellanicus*) dominated the catches. These were large individuals with heavy barnacle encrustations upon the shells. A single 20 minute tow aboard the F/V *Yankee Pride*, brought a catch so large that it could not be safely landed aboard the vessel and had to be emptied back into the sea.

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NOAA Fisheries Service Georges Bank Pilot Flatfish Survey
F/V Mary K Station Information

Station	Date	Time	Lat	Lon	Depth (Fm)	yellowtail flounder (kg)	yellowtail flounder (lbs)	winter flounder (kg)	winter flounder (lbs)
4	08/16/13	08:37	4039.025N	6843.112W	32.2	0.6	1.4	0	0
5	08/16/13	10:07	4042.096N	6834.769W	31.1	3.5	7.8	0.8	1.7
6	08/16/13	11:58	4037.033N	6830.305W	34.8	1.2	2.7	1.1	2.4
7	08/16/13	14:15	4027.863N	6819.672W	53.2	0	0	0	0
8	08/16/13	16:56	4033.639N	6808.003W	51.9	0	0	0	0
10	08/16/13	19:54	4045.427N	6815.116W	31.3	1	2.3	0	0
11	08/16/13	21:11	4048.714N	6811.119W	28.9	0.8	1.7	0	0
13	08/16/13	22:42	4048.490N	6816.139W	27.5	1.3	2.8	0	0
14	08/17/13	02:38	4052.815N	6756.384W	31.3	1.4	3.2	10.3	22.8
15	08/17/13	05:52	4045.671N	6740.151W	39	1.8	3.9	0	0
16	08/17/13	09:06	4057.968N	6744.174W	31.3	0.8	1.7	9.1	20
17	08/17/13	11:15	4057.515N	6748.663W	29.5	0.8	1.7	13.2	29
18	08/17/13	13:21	4103.829N	6747.343W	26.8	0	0	20.1	44.4
19	08/17/13	14:44	4103.522N	6744.346W	27.6	0.4	1	23.6	52.1
20	08/17/13	18:05	4106.600N	6736.709W	28.3	1	2.2	13	28.7
21	08/17/13	19:32	4106.591N	6741.046W	24.1	0.2	0.5	27.8	61.3
23	08/17/13	21:43	4109.659N	6743.313W	24.6	0	0	2	4.5
24	08/17/13	23:34	4109.694N	6740.417W	26.5	0	0	3.3	7.3
26	08/18/13	01:43	4111.164N	6730.318W	22.8	0.3	0.6	39.4	86.9
27	08/18/13	04:25	4109.421N	6724.247W	28.3	0.4	1	11.6	25.5
28	08/18/13	06:02	4109.759N	6720.677W	28	0.2	0.5	2	4.4
29	08/18/13	07:39	4106.410N	6725.006W	30.8	0	0	9.1	20
30	08/18/13	10:15	4100.798N	6720.323W	36	6.6	14.5	5.5	12
31	08/18/13	12:09	4100.548N	6725.821W	35.4	3.8	8.4	13.3	29.3
32	08/18/13	13:39	4100.722N	6732.046W	33.6	0.9	2.1	10	22
33	08/18/13	16:43	4051.721N	6724.450W	43.3	0.3	0.7	0	0
34	08/18/13	19:03	4045.074N	6716.939W	50.6	0	0	0	0
35	08/18/13	21:22	4051.898N	6709.131W	46.5	0	0	0	0
36	08/19/13	00:19	4042.344N	6705.419W	56.2	0	0	0	0
37	08/19/13	11:25	4048.634N	6653.246W	53.8	0	0	0	0
38	08/19/13	13:26	4052.297N	6649.378W	49.1	0	0	0	0
39	08/19/13	17:10	4057.652N	6640.304W	47.1	0	0	0	0
40	08/19/13	19:46	4057.288N	6649.255W	43.9	0	0	0	0
41	08/19/13	22:20	4057.828N	6708.980W	41.3	1.4	3	1.5	3.2
42	08/20/13	00:25	4103.444N	6705.696W	35.6	19.4	42.7	1.4	3.1
43	08/20/13	01:46	4105.990N	6705.960W	34.2	7.4	16.4	1.1	2.4
44	08/20/13	04:25	4106.551N	6712.593W	31.1	5.1	11.3	1.6	3.5
45	08/20/13	06:07	4106.685N	6716.826W	30.6	1	2.2	6.1	13.5
46	08/20/13	08:24	4109.655N	6712.556W	31	2.8	6.1	2.9	6.4
47	08/20/13	10:12	4114.474N	6709.863W	31.1	45.4	100.2	7.4	16.2
48	08/20/13	11:44	4118.450N	6704.572W	32.3	1.8	3.9	7.6	16.8
49	08/20/13	13:25	4118.236N	6700.763W	34.1	9.8	21.6	6.6	14.6
50	08/20/13	15:03	4121.669N	6659.946W	33.7	5.6	12.3	5.2	11.5
51	08/20/13	17:09	4117.803N	6652.346W	36.6	36.2	79.9	1.7	3.7
52	08/20/13	19:14	4115.583N	6656.575W	34.7	12.7	28	0.6	1.3
53	08/20/13	21:30	4112.738N	6648.350W	38	32.6	72	0	0
54	08/20/13	23:59	4108.432N	6645.121W	37.5	19.9	43.8	0	0
55	08/21/13	01:42	4112.200N	6645.181W	38.6	15.9	35.1	1.3	2.9
56	08/21/13	04:21	4115.399N	6645.071W	38.3	38.7	85.3	0	0
57	08/21/13	07:25	4121.275N	6644.585W	38.8	80.9	178.3	0	0
58	08/21/13	09:16	4115.057N	6640.616W	40	85.3	188.1	0.8	1.9
59	08/21/13	11:15	4112.821N	6640.484W	41	73.3	161.6	0	0
60	08/21/13	13:20	4109.792N	6640.838W	42.5	48	105.8	1	2.3
61	08/21/13	16:56	4106.190N	6635.451W	45.2	0	0	0	0
62	08/21/13	19:20	4109.663N	6632.255W	48.6	0	0	0	0
63	08/21/13	21:27	4111.694N	6633.148W	46.4	8.4	18.4	0	0
64	08/21/13	23:22	4112.372N	6637.048W	44.2	104.4	230.2	0	0
65	08/22/13	04:21	4118.541N	6632.761W	46.5	92.8	204.5	0	0
66	08/22/13	09:42	4117.931N	6624.878W	50.4	2.5	5.6	0	0
67	08/22/13	12:11	4124.063N	6631.999W	47.2	52.5	115.7	63.4	139.8
68	08/22/13	14:15	4127.275N	6635.990W	43.8	37.5	82.7	10.8	23.8
69	08/22/13	17:43	4133.185N	6640.460W	39.1	16	35.2	4.9	10.8

NOAA Fisheries Service Georges Bank Pilot Flatfish Survey
F/V Mary K Station Information

Station	Date	Time	Lat	Lon	Depth (Fm)	yellowtail flounder (kg)	yellowtail flounder (lbs)	winter flounder (kg)	winter flounder (lbs)
70	08/22/13	21:49	4133.233N	6659.764W	31.3	12.5	27.5	2.4	5.2
71	08/23/13	00:05	4130.797N	6701.688W	32.9	1.8	3.9	0	0
72	08/23/13	00:41	4130.538N	6701.200W	32.9	48.5	106.9	1.7	3.7
73	08/23/13	04:23	4127.653N	6700.829W	32.6	41.8	92.1	4.2	9.2
74	08/23/13	07:57	4115.607N	6705.038W	31.7	3.6	7.9	0.7	1.6
75	08/23/13	11:25	4057.507N	6706.165W	41.6	0.3	0.8	0	0
76	08/23/13	13:31	4102.804N	6708.995W	34.1	26.9	59.4	6.3	13.8
77	08/23/13	16:52	4109.232N	6716.273W	29.6	1.2	2.6	20.1	44.4
79	08/23/13	19:44	4109.589N	6728.403W	26.7	0	0	6.8	15
80	08/23/13	23:10	4057.080N	6733.988W	36	1.6	3.4	16.4	36.1
81	08/24/13	04:23	4045.810N	6725.015W	47.8	0	0	1.2	2.7
82	08/24/13	09:01	4043.014N	6740.318W	38.2	0.6	1.2	0	0
83	08/24/13	11:12	4042.240N	6744.683W	37.5	0.3	0.7	0	0
84	08/24/13	13:39	4051.806N	6752.915W	33.6	1.2	2.6	6.7	14.7
85	08/24/13	18:15	4051.789N	6819.023W	22	0	0	0	0
86	08/24/13	21:46	4039.727N	6835.660W	31.4	0	0	0	0
87	08/25/13	00:02	4028.141N	6835.623W	45.5	0	0	0	0
88	08/25/13	04:13	4036.664N	6843.127W	31.5	0.1	0.3	0	0
89	08/25/13	08:40	4036.767N	6847.381W	33.5	2.1	4.6	0	0

NOAA Fisheries Service Georges Bank Pilot Flatfish Survey
F/V Yankee Pride Station Information

Station	Date	Time	Lat	Lon	Depth (Fm)	yellowtail flounder (kg)	yellowtail flounder (lbs)	winter flounder (kg)	winter flounder (lbs)
4	08/16/13	06:08	4018.979N	6 848.349W	48.6	0	0	0	0
5	08/16/13	07:20	4018.864N	6845.108W	50.6	0.3	0.7	0	0
6	08/16/13	08:34	4020.875N	6 841.128W	65.1	0	0	0	0
7	08/16/13	09:58	4019.152N	6836.721W	53.6	0	0	0	0
8	08/16/13	11:33	4024.758N	6 827.092W	52.2	0	0	0	0
9	08/16/13	14:04	4039.286N	6820.088W	36	1	2.2	0.4	0.8
10	08/16/13	16:41	4051.260N	6805.841W	31.4	1.4	3.1	14.2	31.4
11	08/16/13	18:25	4054.963N	6 805.753W	23.2	1.7	3.7	7.6	16.7
12	08/16/13	19:42	4057.823N	6804.655W	24.1	0.3	0.7	8.6	18.8
14	08/16/13	21:39	4101.082N	6801.817W	24.6	0.3	0.6	0	0
15	08/16/13	23:51	4100.000N	6747.088W	27.3	0	0	7.7	17
16	08/17/13	01:06	4100.542N	6744.946W	29.1	0.6	1.3	5.6	12.3
17	08/17/13	02:58	4106.375N	6745.539W	21.6	0.4	0.9	10	21.9
18	08/17/13	09:48	4110.093N	6733.663W	25.8	0.3	0.7	14.7	32.3
19	08/17/13	11:22	4104.115N	6734.680W	31	0.5	1	10.1	22.3
20	08/17/13	12:42	4100.469N	6735.372W	32.1	0.9	1.9	2.9	6.4
21	08/17/13	13:56	4057.366N	6736.003W	44.1	3.9	8.6	13.5	29.7
22	08/17/13	16:14	4103.656N	6725.166W	31.9	2.5	5.4	6.2	13.7
23	08/17/13	17:37	4106.513N	6722.661W	49	0	0	6.7	14.7
24	08/17/13	19:33	4103.711N	6712.325W	33.5	42.4	93.5	5.9	12.9
25	08/17/13	20:57	4100.356N	6712.784W	38.3	9.8	21.6	4	8.7
26	08/17/13	22:14	4100.419N	6716.754W	37.4	4	8.9	4.1	9
27	08/18/13	00:06	4057.551N	6713.354W	41.9	1.2	2.7	0.9	1.9
28	08/18/13	07:24	4039.435N	6717.807W	51.7	0	0	0	0
30	08/18/13	09:54	4054.035N	6713.205W	43.4	0	0	1.9	4.1
31	08/18/13	11:10	4051.876N	6711.270W	46.7	0	0	0	0
32	08/18/13	12:19	4054.055N	6716.318W	42.8	0.3	0.7	0	0
33	08/18/13	13:27	4054.521N	6722.912W	41.3	0.3	0.7	1.6	3.6
34	08/18/13	16:40	4100.765N	6701.171W	35.2	5.9	12.9	0.9	2
35	08/18/13	17:41	4100.493N	6656.941W	37.7	1.8	4.1	0	0
36	08/18/13	19:01	4103.529N	6656.695W	37.8	10.1	22.3	3.1	6.8
37	08/18/13	20:04	4103.723N	6653.459W	37.2	11.7	25.7	0	0
38	08/18/13	21:19	4106.679N	6653.475W	36.2	37.5	82.7	0	0
39	08/19/13	04:24	4100.637N	6637.483W	39.7	0	0	0	0
40	08/19/13	05:32	4100.515N	6640.552W	42.1	0	0	0	0
41	08/19/13	06:51	4102.630N	6641.415W	39.9	0.5	1.1	0	0
42	08/19/13	08:13	4105.687N	6641.956W	42.4	8.8	19.5	0	0
43	08/19/13	10:14	4111.756N	6652.421W	38.8	83.8	184.7	3.1	6.8
44	08/19/13	11:49	4112.946N	6700.276W	35.3	7.8	17.1	3.6	7.9
45	08/19/13	12:42	4112.752N	6703.573W	33.2	9.1	20	1.2	2.6
46	08/19/13	13:52	4112.495N	6707.502W	32.9	3.9	8.6	10.3	22.6
47	08/19/13	15:15	4112.280N	6711.113W	30.9	1.4	3	6.7	14.8
48	08/19/13	17:13	4115.672N	6700.654W	34.5	6.9	15.1	3.3	7.3
49	08/19/13	18:24	4115.613N	6653.158W	36.3	20.8	45.8	1.3	2.9
50	08/20/13	01:31	4118.145N	6628.548W	47.4	17.5	38.6	0	0
51	08/20/13	03:07	4115.266N	6633.861W	46.7	41.3	91.1	0	0
52	08/20/13	04:17	4115.181N	6635.343W	45.4	98.7	217.5	0	0
53	08/20/13	06:17	4117.053N	6643.259W	39.3	55.4	122.1	0	0
54	08/20/13	07:47	4120.560N	6648.449W	38	63	138.8	3.6	8
55	08/20/13	09:23	4123.566N	6650.116W	58.2	51	112.3	4.8	10.6
56	08/20/13	11:09	4123.237N	6655.511W	35.2	96.5	212.7	3.9	8.6
57	08/20/13	13:26	4116.100N	6704.493W	33.3	4.8	10.5	11.1	24.5
58	08/20/13	15:26	4115.682N	6650.668W	38.7	54.5	120.2	0	0
59	08/20/13	16:38	4118.910N	6647.194W	37.5	48.5	107	2.9	6.3
60	08/21/13	01:23	4121.630N	6632.636W	45.8	14.1	31.1	1.3	2.8
61	08/21/13	02:26	4122.441N	6636.256W	45.2	59	130	1.4	3.2
63	08/21/13	04:49	4124.334N	6644.401W	41.9	49.5	109.1	8	17.7
64	08/21/13	06:04	4123.545N	6640.424W	38.2	64.8	142.8	1	2.1
65	08/21/13	07:18	4126.123N	6640.957W	42.6	52.2	115.2	8.9	19.6
66	08/21/13	08:36	4128.921N	6640.755W	40.3	111.1	244.8	5.9	13.1
67	08/21/13	10:30	4129.449N	6636.221W	42.2	24.6	54.3	7.2	15.8
68	08/21/13	11:54	4133.074N	6643.928W	39.2	3.5	7.7	3.4	7.4

NOAA Fisheries Service Georges Bank Pilot Flatfish Survey
 F/V *Yankee Pride* Station Information

Station	Date	Time	Lat	Lon	Depth (Fm)	yellowtail flounder (kg)	yellowtail flounder (lbs)	winter flounder (kg)	winter flounder (lbs)
69	08/21/13	13:06	4134.381N	6650.315W	34.5	14.3	31.4	7.2	15.8
70	08/21/13	14:19	4134.120N	6655.158W	33.7	40.9	90.1	13.8	30.4
71	08/21/13	15:54	4131.138N	6656.012W	33.5	367.6	810.4	11.9	26.2
72	08/22/13	10:13	4126.420N	6657.448W	33.7	96.6	213	5.2	11.5
73	08/22/13	11:55	4123.932N	6700.992W	34.1	15	33	3.4	7.6
74	08/22/13	13:00	4127.759N	6704.066W	28.3	44.2	97.5	3.1	6.8
75	08/22/13	14:54	4134.867N	6703.477W	31.3	8.3	18.2	3.6	8
76	08/22/13	16:30	4136.471N	6707.998W	30.5	0	0	0	0
78	08/22/13	19:29	4137.794N	6654.356W	32.7	22.9	50.5	14.7	32.3
81	08/22/13	22:11	4136.034N	6648.716W	36.4	81	178.7	8.3	18.4
82	08/22/13	23:28	4135.086N	6646.102W	38.4	18.7	41.3	12.1	26.7
86	08/23/13	19:23	4206.187N	6720.573W		14.4	31.8	8.7	19.1
87	08/23/13	21:38	4205.868N	6724.177W	30.6	80.2	176.8	1.1	2.5
88	08/23/13	23:01	4206.603N	6727.247W	56.7	40	88.1	0	0
89	08/24/13	10:57	4203.288N	6736.221W	46	8.9	19.7	2.1	4.6
90	08/24/13	12:08	4200.618N	6740.633W	32.4	32.8	72.3	0.9	2.1
91	08/24/13	14:04	4155.185N	6751.959W	34.5	0.9	2	1.9	4.2
92	08/24/13	15:16	4152.752N	6756.925W	36.8	1.1	2.4	0	0
93	08/24/13	16:50	4149.561N	6803.597W	36.3	1.4	3.1	4	8.7
94	08/24/13	18:41	4145.846N	6811.977W	34.9	0.9	2.1	17.1	37.8
95	08/24/13	19:51	4146.681N	6815.167W	66.3	2.9	6.3	0	0
96	08/25/13	11:01	4128.104N	6824.193W	34.3	0.3	0.7	27.5	60.6
97	08/25/13	12:33	4125.265N	6832.211W	44.4	0.4	0.8	38.4	84.7
98	08/25/13	13:47	4122.311N	6832.106W	49	0.7	1.6	38.3	84.5
99	08/25/13	15:09	4121.627N	6825.166W	34.5	0	0	37.3	82.1
100	08/25/13	16:11	4121.987N	6820.974W	31.9	0	0	23	50.8

yellowtail flounder
NOAA Fisheries Service
Georges Bank Pilot Flatfish Survey
15 August – 26 August 2013

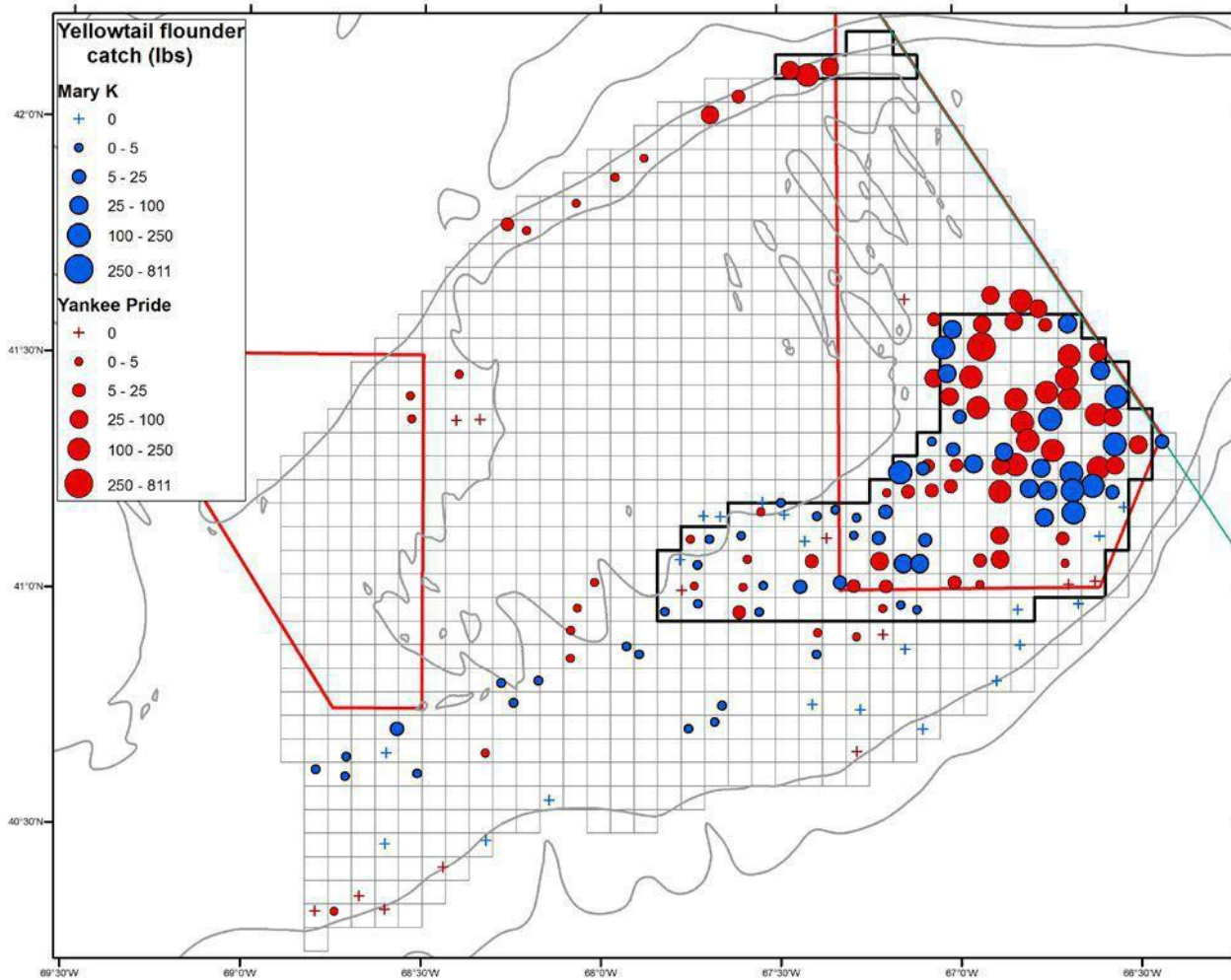


Figure 1. Station location map showing total catch weight (lbs) of yellowtail flounder captured during the Georges Bank Pilot Flatfish Survey. The thick black lines denote the high density stratum, while the red outlined areas denote Closed Areas I and II.

winter flounder
NOAA Fisheries Service
Georges Bank Pilot Flatfish Survey
15 August – 26 August 2013

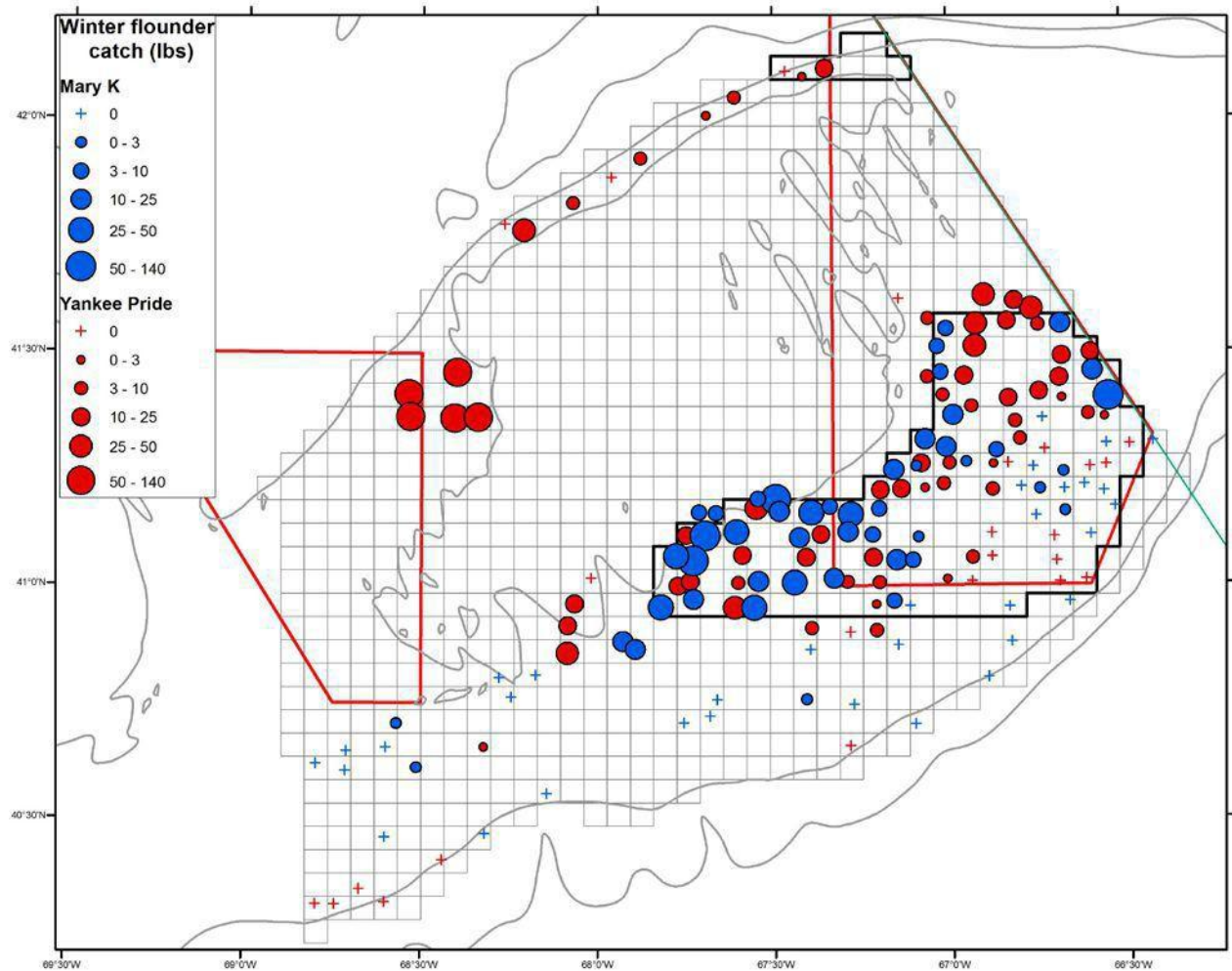
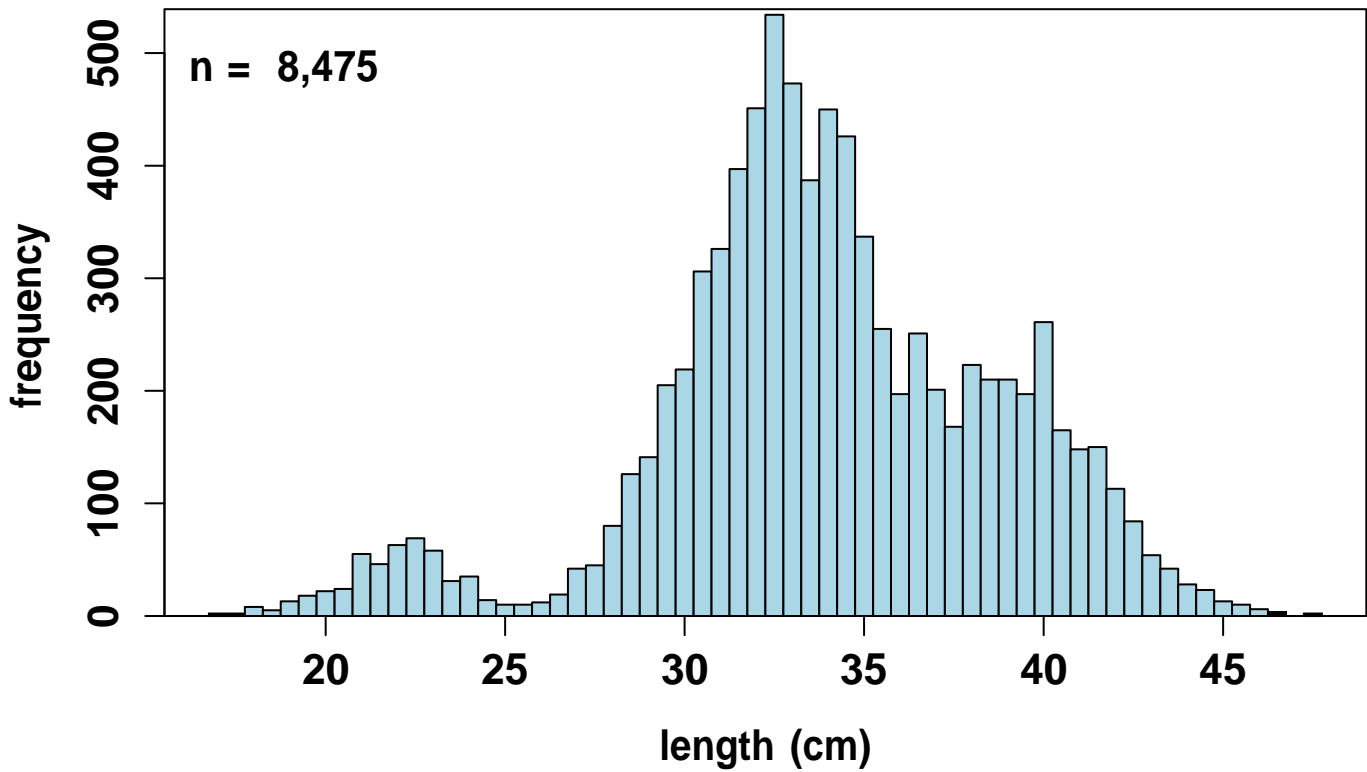


Figure 2. Station location map showing total catch weight (lbs) of winter flounder captured during the Georges Bank Pilot Flatfish Survey. The thick black lines denote the high density stratum, while the red outlined areas denote Closed Areas I and II.

yellowtail flounder combined length frequency



winter flounder combined length frequency

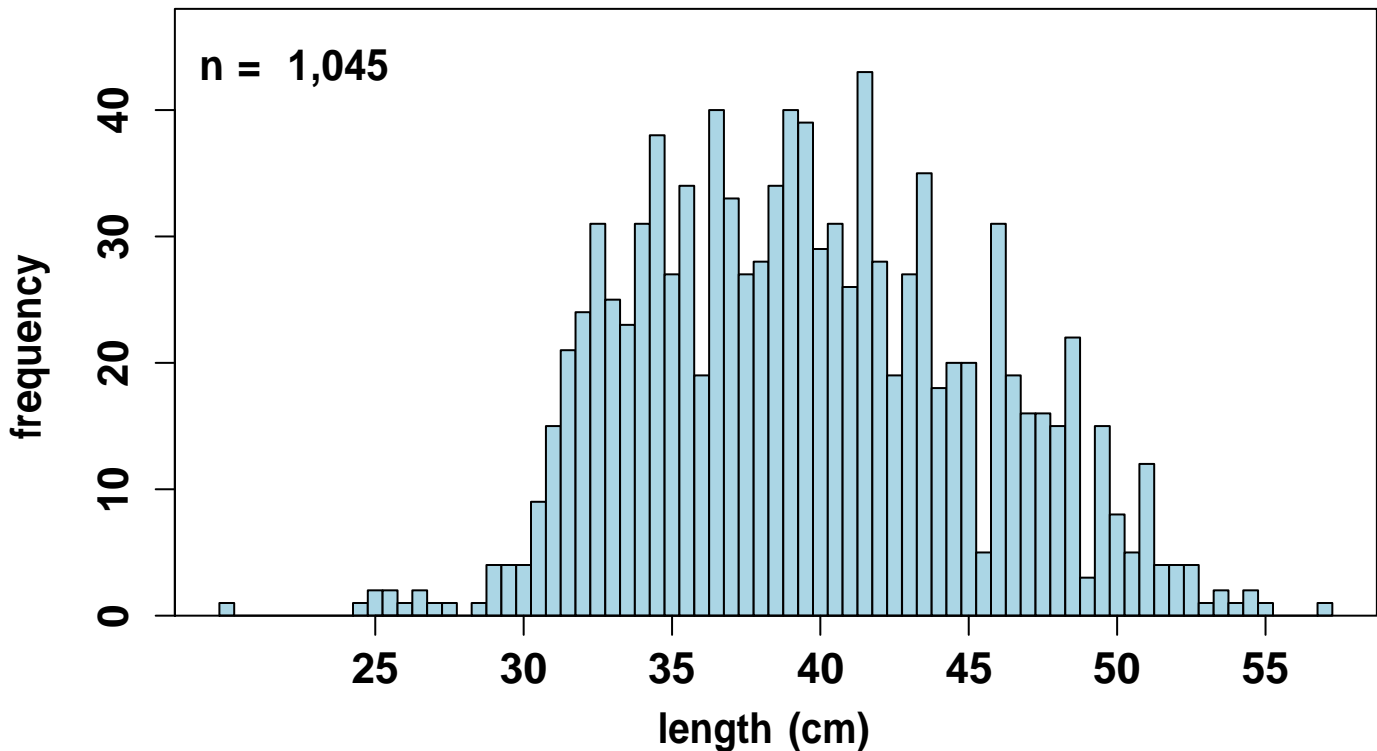


Figure 3. Length frequencies of yellowtail and winter flounder captured during the Georges Bank Pilot Flatfish Survey. The data from both vessels has been combined.

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