

NOAA's National Marine Fisheries Service (NMFS)



DRAFT (Framework 3)

## APPENDIX I: BACKGROUND DATA

Atlantic Herring PDT Request:  
Information to Develop Draft  
Framework 3 2014 and 2015 River  
Herring/Shad Catch Cap Options

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## Background & Purpose

Lori Steele requested data for the Atlantic herring PDT to assess as part of the Draft Framework 3 2014 and 2015 river herring/shad (RH/S) catch cap options. The data request was finalized at a meeting between Lori Steele and APSD on 7/23/2013.

## Information Provided

- Excel spreadsheets containing the requested data.

## Analysis Parameters

Parameters agreed upon by the Matt Cieri and APSD are summarized below:

- Lori Steele provided table templates for APSD to fill in with the requested data;
- Some of the tables were modified slightly by APSD based on data suitability.

## Results

- Please see attached excel sheets for the requested data;
- Background information can be found at:

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## Analysis Accuracy Check

Michael Lanning

## METHODS:

The data in Appendix I represent catch reported or observed on Atlantic herring Cap Trips (>6,600 lb. of Atlantic herring) stratified by year, gear, and area. Data were queried from the Data Management Imputation System (DMIS) and Northeast Fisheries Science Center observer program databases (OBDBS). The river herring and shad (RHS) bycatch ratio was calculated using the following formula:

$$(\text{Observed RHS catch} / \text{Observed kept all}) * \text{Vessel kept all}$$

DMIS is a Northeast Regional Office data record matching system. The purpose of the system is to provide timely fishery trip-level data in support of weekly catch and landing reports, and analysis to support, improve, and evaluate the region's fishery management decisions and programs. DMIS contains trip information for federally permitted vessels from January 1, 2007. The data for the current fishing year is updated weekly with plans to update daily. Past years are updated periodically.

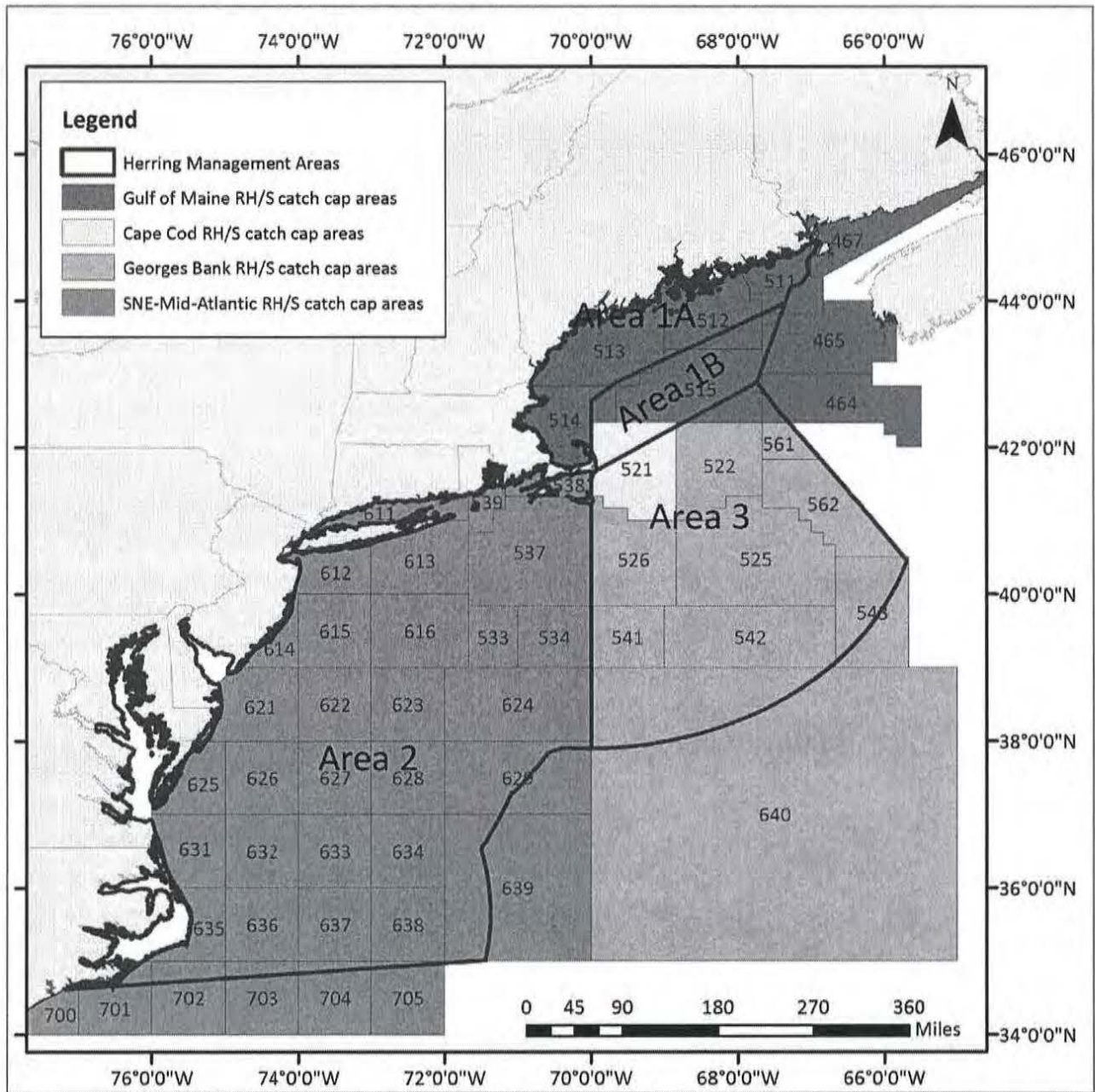
The DMIS system consists of three major parts: (1) building a map of matched data sets; (2) classifying match data into individual trips; and (3) applying FMP business rules to the individual trips. Missing data including area fished, gear type, amount of species landed and discarded is estimated through an imputation procedure based on fully matched historical data within the DMIS data set. DMIS is NERO's strongest data matching tool and that aspect is used to support catch monitoring in many fisheries. Primary data sources include Allocation Management System (AMS) Database, Vessel Trip Reports (VTRs), Dealer Reports, Vessel Monitoring System (VMS) Catch Reports, Observer Reports, Vessel Permit Database, and the MQRS database which tracks limited access fishing eligibilities.

The five-year summary tables for each area present values summed by year and gear. Descriptive statistics in these tables were determined using the distribution platform in JMP statistical software (SAS 2010).

A bootstrap algorithm using trip-level data with 10,000 iterations was performed with R software to generate the sample population used to calculate the descriptive statistics presented in the tables for each individual year (mean, median, 75<sup>th</sup> percentile, high, low, standard deviation (standard error of the statistic), and coefficient of variation (CV)). Bootstrapping assumes that the sample data is representative of the underlying population. As the original sample size ( $n$ ) approaches the population size ( $N$ ), this makes intuitive sense. Caution should be used when  $n$  is both small and  $n/N < 5\%$ .



**Figure 1 Proposed RH/S Catch Cap Areas**





## Gulf of Maine (GOM) RH/S Cap Area : 464, 465, 467, 511, 512, 513, 514, 515

YEAR	Gear	A Total Atlantic herring landings (lb) on Cap trips (>6,600 lb)	B Total landings (lb) all species on Cap trips	C Total # Cap trips	D # of observed Cap trips	E % of Cap trips that were observed (D/C)	F RH/S Ratio RH/S catch vs. kept catch on obs Cap trips	G Estimated RH/S catch (lb) (butterfish cap method) (B x F)	H Estimated RH/S catch (mt) (butterfish cap method) (G / 2204.62262)	I ANNUAL ACL (mt)	J ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / I)	K Estimated RH/S catch scaled for 2013-2015 herring ACL (107,800 mt) (H x J)
2008	TOTAL ALL GEARS	93,546,349	94,036,600	335	36	11%	0.0053	501,470	227	143,350	0.75	171
2008	PURSE SEINE	55,084,505	55,556,565	243	22	9%	0.0001	4,493	2	143,350	0.75	2
2008	MWT	38,390,684	38,408,875	87	14	16%	0.0087	332,414	151	143,350	0.75	113
2008	BOTTOM TRAWL	71,160	71,160	5	0	0%	0.0000	0	0	143,350	0.75	0
2009	TOTAL ALL GEARS	98,085,412	98,135,910	358	65	18%	0.0027	267,036	121	143,350	0.75	91
2009	PURSE SEINE	47,797,473	47,827,473	225	33	15%	0.0001	5,282	2	143,350	0.75	2
2009	MWT	50,079,874	50,091,370	115	32	28%	0.0042	208,621	95	143,350	0.75	71
2009	BOTTOM TRAWL	208,065	217,067	18	0	0%	0.0000	0	0	143,350	0.75	0
2010	TOTAL ALL GEARS	59,444,637	59,543,683	338	55	16%	0.0067	399,736	181	91,200	1.18	214
2010	PURSE SEINE	18,235,973	18,235,973	205	20	10%	0.0004	6,404	3	91,200	1.18	3
2010	MWT	40,978,674	41,067,939	109	35	32%	0.0073	299,434	136	91,200	1.18	161
2010	BOTTOM TRAWL	229,990	239,771	24	0	0%	0.0000	0	0	91,200	1.18	0
2011	TOTAL ALL GEARS	66,206,681	66,215,113	338	69	20%	0.0003	17,081	8	93,905	1.15	9
2011	PURSE SEINE	37,481,227	37,481,434	265	47	18%	0.0000	234	0	93,905	1.15	0
2011	MWT	28,664,954	28,664,954	66	21	32%	0.0004	12,752	6	93,905	1.15	7
2011	BOTTOM TRAWL	60,500	68,725	7	1	14%	0.0068	465	0	93,905	1.15	0
2012	TOTAL ALL GEARS	52,113,819	52,128,563	326	41	13%	0.0001	6,512	3	90,683	1.19	4
2012	PURSE SEINE	42,483,970	42,484,460	275	32	12%	0.0001	2,533	1	90,683	1.19	1
2012	MWT	9,387,149	9,388,149	25	7	28%	0.0004	3,721	2	90,683	1.19	2
2012	BOTTOM TRAWL	242,700	255,954	26	2	8%	0.0008	217	0	90,683	1.19	0
MEAN	TOTAL ALL GEARS	73,879,380	74,011,974	339	53.2	16%	0.0030	238,367	108	112,498	1.00	98
MEAN	PURSE SEINE	40,216,630	40,317,181	242.6	30.8	13%	0.0001	3,789	2	112,498	1.00	2
MEAN	MWT	33,500,267	33,524,257	80.4	21.8	27%	0.0042	171,388	78	112,498	1.00	71
MEAN	BOTTOM TRAWL	162,483	170,535	16	0.6	4%	0.0015	136	0	112,498	1.00	0
MEDIAN	TOTAL ALL GEARS	66,206,681	66,215,113	338	55	16%	0.0027	267,036	121	93,905	1.15	91
MEDIAN	PURSE SEINE	42,483,970	42,484,460	243	32	12%	0.0001	4,493	2	93,905	1.15	2
MEDIAN	MWT	38,390,684	38,408,875	87	21	28%	0.0042	208,621	95	93,905	1.15	71
MEDIAN	BOTTOM TRAWL	208,065	217,067	18	0	0%	0.0000	0	0	93,905	1.15	0
75th Percentile	TOTAL ALL GEARS	95,815,881	96,086,255	338	67	18%	0.0060	450,603	204	143,350	1.19	193
75th Percentile	PURSE SEINE	51,440,989	51,692,019	265	40	15%	0.0002	5,843	3	143,350	1.19	3
75th Percentile	MWT	50,079,874	50,091,370	115	32	28%	0.0064	270,518	123	143,350	1.17	92
75th Percentile	BOTTOM TRAWL	236,345	247,863	24	1.5	8%	0.0038	341	0	143,350	1.19	0
HIGH	TOTAL ALL GEARS	98,085,412	98,135,910	358	69	20%	0.0067	501,470	227	143,350	1.19	214
HIGH	PURSE SEINE	55,084,505	55,556,565	275	47	18%	0.0004	6,404	3	143,350	1.19	3
HIGH	MWT	50,079,874	50,091,370	115	35	32%	0.0087	332,414	151	143,350	1.19	161
HIGH	BOTTOM TRAWL	242,700	255,954	26	2	14%	0.0068	465	0	143,350	1.19	0
LOW	TOTAL ALL GEARS	52,113,819	52,128,563	326	36	11%	0.0001	6,512	3	90,683	0.75	4
LOW	PURSE SEINE	18,235,973	18,235,973	205	20	9%	0.0000	234	0	90,683	0.75	0
LOW	MWT	9,387,149	9,388,149	25	7	16%	0.0004	3,721	2	90,683	0.75	2
LOW	BOTTOM TRAWL	60,500	68,725	5	0	0%	0.0000	0	0	90,683	0.75	0
Standard Deviation	TOTAL ALL GEARS	20,698,390	20,808,388	11.70	14.46	0.04	0.00	222,940	101	28,191	0.23	95
Standard Deviation	PURSE SEINE	13,913,082	14,044,230	28.61	10.76	0.04	0.00	2,438	1	28,191	0.23	1
Standard Deviation	MWT	17,043,615	17,049,032	36.52	11.03	0.07	0.00	141,713	64	27,988	0.23	48
Standard Deviation	BOTTOM TRAWL	89,177	92,865	9.62	0.89	0.06	0.00	206	0	28,191	0.23	0
CV	TOTAL ALL GEARS	0	0	0.03	0.27	0.25	0.98	1	1	0	0.23	1
CV	PURSE SEINE	0	0	0.12	0.35	0.29	1.10	1	1	0	0.23	1
CV	MWT	1	1	0.45	0.51	0.24	0.81	1	1	0	0.23	1
CV	BOTTOM TRAWL	1	1	0.60	1.49	1.47	1.94	2	2	0	0.23	1





Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Gulf of Maine (GOM) RH/S Cap Area : 464, 465, 467, 511, 512, 513, 514, 515

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D / 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (E x G)
2008	Mean	279,990	281,449	0.0052	1,458	1	143,350	1.33	1
	Total	279,990	281,449	0.0052	1,458	1	143,350	1.33	1
	Purse Seine	226,685	228,628	0.0001	18	0	143,350	1.33	0
	MWT	441,272	441,481	0.0086	3,800	2	143,350	1.33	2
Median	Total	198,630	198,630	0.0050	999	0	143,350	1.33	1
	Purse Seine	185,000	185,200	0.0001	15	0	143,350	1.33	0
	MWT	345,205	345,205	0.0083	2,852	1	143,350	1.33	2
	Bottom Trawl	13,320	13,320	0	0	0	143,350	1.33	0
75th Percentile	Total	419,325	424,400	0.0014	599	0	143,350	1.33	0
	Purse Seine	341,400	355,000	0.0000	0	0	143,350	1.33	0
	MWT	682,703	682,703	0.0025	1,674	1	143,350	1.33	1
	Bottom Trawl	17,380	17,380	0	0	0	143,350	1.33	0
High	Total	1,396,350	1,396,350	0.0277	38,696	18	143,350	1.33	23
	Purse Seine	744,800	744,800	0.0004	267	0	143,350	1.33	0
	MWT	1,396,350	1,396,350	0.0412	57,488	26	143,350	1.33	35
	Bottom Trawl	20,760	20,760	0	0	0	143,350	1.33	0
Low	Total	10,000	10,000	0.0000	0	0	143,350	1.33	0
	Purse Seine	10,000	10,000	0.0000	0	0	143,350	1.33	0
	MWT	32,200	32,200	0.0000	0	0	143,350	1.33	0
	Bottom Trawl	10,000	10,000	0	0	0	143,350	1.33	0
Standard Deviation	Total	239,710	239,602	0.0040	956	0	143,350	1.33	1
	Purse Seine	168,977	169,254	0.0001	12	0	143,350	1.33	0
	MWT	322,961	323,037	0.0064	2,080	1	143,350	1.33	1
	Bottom Trawl	3,960	3,960	0	0	0	143,350	1.33	0
CV	Total	0.86	0.85	0.77	0.66	0.00	143,350	1.33	0.00
	Purse Seine	0.75	0.74	0.91	0.67	0.00	143,350	1.33	0.00
	MWT	0.73	0.73	0.75	0.55	0.00	143,350	1.33	0.00
	Bottom Trawl	0.28	0.28	0	0.00	0.00	143,350	1.33	0.00

\* Information in this table is based on:

- Total: Cap trips n = 335; Observed Cap trips 36; % of Cap trips observed 11%
- Purse Seine: Cap trips: n = 243; Observed Cap trips 22; % of Cap trips observed 9%
- MWT: Cap trips n = 87; Observed Cap trips 87; % of Cap trips observed 16%
- Bottom Trawl: Cap trips n = 5; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Gulf of Maine (GOM) RH/S Cap Area : 464, 465, 467, 511, 512, 513, 514, 515

		A	B	C	D	E	F	G	H
Year	2009	Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D / 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (E x G)
Mean	Total	273,315	273,467	0.0027	742	0	143,350	1	0
	Purse Seine	212,433	212,567	0.0001	24	0	143,350	1	0
	MWT	435,477	435,577	0.0042	1,820	1	143,350	1	1
	Bottom Trawl	11,559	12,281		0	0	143,350	1	0
Median	Total	176,000	176,000	0.0026	456	0	143,350	1	0
	Purse Seine	152,670	152,670	0.0001	16	0	143,350	1	0
	MWT	422,224	422,224	0.0040	1,691	1	143,350	1	1
	Bottom Trawl	10,925	11,492		0	0	143,350	1	0
75th Percentile	Total	419,200	419,200	0.0019	781	0	143,350	1	0
	Purse Seine	253,325	253,325	0.0001	18	0	143,350	1	0
	MWT	650,729	650,729	0.0029	1,859	1	143,350	1	1
	Bottom Trawl	15,250	16,250		0	0	143,350	1	0
High	Total	1,204,785	1,204,785	0.0081	9,720	4	143,350	1	6
	Purse Seine	1,204,785	1,204,785	0.0004	459	0	143,350	1	0
	MWT	1,170,290	1,170,290	0.0120	14,080	6	143,350	1	8
	Bottom Trawl	18,000	19,208		0	0	143,350	1	0
Low	Total	7,000	7,000	0.0002	2	0	143,350	1	0
	Purse Seine	9,000	9,000	0.0000	0	0	143,350	1	0
	MWT	11,000	11,000	0.0003	4	0	143,350	1	0
	Bottom Trawl	7,000	7,000		0	0	143,350	1	0
Standard Deviation	Total	263,708	263,682	0.00	304	0	143,350	1	0
	Purse Seine	210,820	210,736	0.00	12	0	143,350	1	0
	MWT	293,073	293,222	0.00	524	0	143,350	1	0
	Bottom Trawl	3,894	3,878		0	0	143,350	1	0
CV	Total	0.96	0.96	0.42	0.41	0.00	143,350	1	0
	Purse Seine	0.99	0.99	0.50	0.49	0.00	143,350	1	0
	MWT	0.67	0.67	0.43	0.29	0.00	143,350	1	0
	Bottom Trawl	0.34	0.32		0.00	0.00	143,350	1	0

\* Information in this table is based on:

- Total: Cap trips n = 358; Observed Cap trips 65; % of Cap trips observed 18%
- Purse Seine: Cap trips: n = 225; Observed Cap trips 33; % of Cap trips observed 15%
- MWT: Cap trips n = 115; Observed Cap trips 32; % of Cap trips observed 28%
- Bottom Trawl: Cap trips n = 18; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Gulf of Maine (GOM) RH/S Cap Area : 464, 465, 467, 511, 512, 513, 514, 515

		A	B	C	D	E	F	G	H
Year	2010	Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D / 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (E x G)
Mean	Total	174,599	174,889	0	1,173	0.5323	91,200	0.85	0
	Purse Seine	88,956	88,956	0	31	0.0142	91,200	0.85	0
	MWT	375,951	376,770	0	2,744	1.2444	91,200	0.85	1
	Bottom Trawl	9,583	9,990	0	0	0.0000	91,200	0.85	0
Median	Total	80,300	80,300	0	527	0.2391	91,200	0.85	0
	Purse Seine	54,500	54,500	0	18	0.0081	91,200	0.85	0
	MWT	373,724	373,724	0	2,676	1.2136	91,200	0.85	1
	Bottom Trawl	9,000	9,000	0	0	0.0000	91,200	0.85	0
75th Percentile	Total	228,000	228,000	0	1,196	0.5427	91,200	0.85	0
	Purse Seine	120,399	120,399	0	24	0.0108	91,200	0.85	0
	MWT	510,843	512,950	0	2,938	1.3327	91,200	0.85	1
	Bottom Trawl	10,443	10,443	0	0	0.0000	91,200	0.85	0
High	Total	1,309,650	1,309,650	0	22,542	10.2248	91,200	0.85	9
	Purse Seine	399,700	399,700	0	531	0.2411	91,200	0.85	0
	MWT	1,309,650	1,309,650	0	23,602	10.7059	91,200	0.85	9
	Bottom Trawl	25,000	25,000	0	0	0.0000	91,200	0.85	0
Low	Total	6,800	7,000	0	7	0.0033	91,200	0.85	0
	Purse Seine	7,000	7,000	0	0	0.0000	91,200	0.85	0
	MWT	25,000	25,000	0	32	0.0144	91,200	0.85	0
	Bottom Trawl	6,800	7,000	0	0	0.0000	91,200	0.85	0
Standard Deviation	Total	219,407.67	219,750.56	0.00	445.93	0.20	91,200	0.85	0
	Purse Seine	84,199.08	84,199.08	0.00	17.37	0.01	91,200	0.85	0
	MWT	276,931.52	277,238.74	0.00	601.54	0.27	91,200	0.85	0
	Bottom Trawl	3,896.00	4,136.02	0.00	0.00	0.00	91,200	0.85	0
CV	Total	1.26	1.26	0.30	0.38	0.00	91,200	0.85	0
	Purse Seine	0.95	0.95	0.59	0.56	0.00	91,200	0.85	0
	MWT	0.74	0.74	0.30	0.22	0.00	91,200	0.85	0
	Bottom Trawl	0.41	0.41	0.00	0.00	0.00	91,200	0.85	0

\* Information in this table is based on:

Total: Cap trips n = 338; Observed Cap trips 55; % of Cap trips observed 16%

Purse Seine: Cap trips: n = 205; Observed Cap trips 20; % of Cap trips observed 10%

MWT: Cap trips n = 109; Observed Cap trips 35; % of Cap trips observed 32%

Bottom Trawl: Cap trips n = 24; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

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Mean	<b>Total</b>	<b>195,878</b>	<b>195,903</b>	<b>0.0003</b>	<b>49</b>	<b>0</b>	<b>93,905</b>	<b>0.87</b>	<b>0</b>
	Purse Seine	141,439	141,439	0.0000	1	0	93,905	0.87	0
	MWT	434,317	434,317	0.0004	194	0	93,905	0.87	0
	Bottom Trawl	8,643	9,880		0	0	93,905	0.87	0
Median	<b>Total</b>	<b>148,875</b>	<b>148,875</b>	<b>0.0002</b>	<b>36</b>	<b>0</b>	<b>93,905</b>	<b>0.87</b>	<b>0</b>
	Purse Seine	125,000	125,000	0.0000	1	0	93,905	0.87	0
	MWT	369,665	369,665	0.0004	157	0	93,905	0.87	0
	Bottom Trawl	8,000	9,938		0	0	93,905	0.87	0
75th Percentile	<b>Total</b>	<b>268,938</b>	<b>268,938</b>	<b>0.0002</b>	<b>45</b>	<b>0</b>	<b>93,905</b>	<b>0.87</b>	<b>0</b>
	Purse Seine	210,350	210,350	0.0000	0	0	93,905	0.87	0
	MWT	574,628	574,628	0.0003	173	0	93,905	0.87	0
	Bottom Trawl	10,000	11,194		0	0	93,905	0.87	0
High	<b>Total</b>	<b>1,343,800</b>	<b>1,343,800</b>	<b>0.0007</b>	<b>984</b>	<b>0</b>	<b>93,905</b>	<b>0.87</b>	<b>0</b>
	Purse Seine	502,400	502,400	0.0001	27	0	93,905	0.87	0
	MWT	1,343,800	1,343,800	0.0014	1,905	1	93,905	0.87	1
	Bottom Trawl	10,800	13,328		0	0	93,905	0.87	0
Low	<b>Total</b>	<b>7,000</b>	<b>7,000</b>	<b>0.0000</b>	<b>0</b>	<b>0</b>	<b>93,905</b>	<b>0.87</b>	<b>0</b>
	Purse Seine	8,000	8,000	0.0000	0	0	93,905	0.87	0
	MWT	32,000	32,000	0.0000	0	0	93,905	0.87	0
	Bottom Trawl	7,000	7,000		0	0	93,905	0.87	0
Standard Deviation	<b>Total</b>	<b>202,180</b>	<b>202,157</b>	<b>0.0001</b>	<b>23</b>	<b>0</b>	<b>93,905</b>	<b>0.87</b>	<b>0</b>
	Purse Seine	108,504	108,503	0.0000	1	0	93,905	0.87	0
	MWT	300,878	300,878	0.0002	60	0	93,905	0.87	0
	Bottom Trawl	1,463	1,899		0	0	93,905	0.87	0
CV	<b>Total</b>	<b>1.03</b>	<b>1.03</b>	<b>0.4582</b>	<b>0.47</b>	<b>0.00</b>	<b>93,905.00</b>	<b>0.87</b>	<b>0.00</b>
	Purse Seine	0.06	0.77	1.0308	0.79	0.00	93,905.00	0.87	0.00
	MWT	0.69	0.69	0.4474	0.31	0.00	93,905.00	0.87	0.00
	Bottom Trawl	0.17	0.19		0.00	0.00	93,905.00	0.87	0.00

\* Information in this table is based on:

Total: Cap trips n = 338; Observed Cap trips 69; % of Cap trips observed 20%  
Purse Seine: Cap trips: n = 265; Observed Cap trips 47; % of Cap trips observed 18%  
MWT: Cap trips n = 66; Observed Cap trips 21; % of Cap trips observed 32%  
Bottom Trawl: Cap trips n = 7; Observed Cap trips 1; % of Cap trips Observed 14%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Gulf of Maine (GOM) RH/S Cap Area : 464, 465, 467, 511, 512, 513, 514, 515

Year		A	B	C	D	E	F	G	H
2012		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D / 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (E x G)
Mean	Total	159,858	159,904	0.0001	20	0	90,683	1	0
	Purse Seine	154,487	154,489	0.0001	9	0	90,683	1	0
	MWT	375,486	375,526	0.0005	193	0	90,683	1	0
	Bottom Trawl	9,335	9,844	0.0009	9	0	90,683	1	0
Median	Total	125,785	125,785	0.0001	15	0	90,683	1	0
	Purse Seine	134,400	134,400	0.0001	8	0	90,683	1	0
	MWT	307,806	307,806	0.0004	117	0	90,683	1	0
	Bottom Trawl	8,850	9,925	0.0008	8	0	90,683	1	0
75th Percentile	Total	225,408	225,408	0.0001	16	0	90,683	1	0
	Purse Seine	223,600	223,600	0.0000	3	0	90,683	1	0
	MWT	409,975	409,975	0.0001	57	0	90,683	1	0
	Bottom Trawl	11,000	11,200	0.0008	9	0	90,683	1	0
High	Total	1,397,750	1,397,750	0.0005	687	0	90,683	1	0
	Purse Seine	858,433	858,433	0.0004	321	0	90,683	1	0
	MWT	1,397,750	1,397,750	0.0086	12,067	5	90,683	1	5
	Bottom Trawl	13,500	14,100	0.0020	28	0	90,683	1	0
Low	Total	6,650	6,650	0.0000	0	0	90,683	1	0
	Purse Seine	6,650	6,650	0.0000	0	0	90,683	1	0
	MWT	28,800	28,800	0.0000	0	0	90,683	1	0
	Bottom Trawl	7,000	7,200	0.0000	0	0	90,683	1	0
Standard Deviation	Total	167,467	167,435	0.0001	12	0	90,683	1	0
	Purse Seine	127,667	127,667	0.0001	7	0	90,683	1	0
	MWT	346,972	346,970	0.0006	191	0	90,683	1	0
	Bottom Trawl	1,926	2,036	0.0007	1	0	90,683	1	0
CV	Total	1.05	1.05	0.5756	0.60	0.00	90,683.00	0.84	0.00
	Purse Seine	0.83	0.83	0.8448	0.70	0.00	90,683.00	0.84	0.00
	MWT	0.92	0.92	1.0737	0.99	0.00	90,683.00	0.84	0.00
	Bottom Trawl	0.21	0.21	0.7665	0.16	0.00	90,683.00	0.84	0.00

\* Information in this table is based on:

Total: Cap trips n = 326; Observed Cap trips 41; % of Cap trips observed 13%

Purse Seine: Cap trips: n = 275; Observed Cap trips 32; % of Cap trips observed 12%

MWT: Cap trips n = 25; Observed Cap trips 7; % of Cap trips observed 28%

Bottom Trawl: Cap trips n = 26; Observed Cap trips 2; % of Cap trips Observed 8%



## Cape Cod (CC) RH/S Cap Area : 521

YEAR	Gear	A Total Atlantic herring landings (lb) on Cap trips (>6,600 lb)	B Total landings (lb) all species on Cap trips	C Total # Cap trips	D # of observed Cap trips	E % of Cap trips that were observed (D/C)	F RH/S Ratio RH/S catch vs. kept catch on obs Cap trips	G Estimated RH/S catch (lb) (butterfish cap method) (B x F)	H Estimated RH/S catch (mt) (butterfish cap method) (G / 2204.62262)	I ANNUAL ACL (mt)	J ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / I)	K Estimated RH/S catch scaled for 2013-2015 herring ACL (107,800 mt) (H x J)
2008	TOTAL ALL GEARS	15,904,241	15,908,341	39	11	0	0.0050	79,293	36	143,350	0.75	27
2008	PURSE SEINE	0	0	0	0		0.0000	0	0	143,350	0.75	0
2008	MWT	15,904,241	15,908,341	39	11	0	0.0050	79,293	36	143,350	0.75	27
2008	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	143,350	0.75	0
2009	TOTAL ALL GEARS	6,182,407	6,185,269	16	9	1	0.0000	0	0	143,350	0.75	0
2009	PURSE SEINE	0	0	0	0		0.0000	0	0	143,350	0.75	0
2009	MWT	6,182,407	6,185,269	16	9	1	0.0000	0	0	143,350	0.75	0
2009	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	143,350	0.75	0
2010	TOTAL ALL GEARS	12,071,117	12,184,339	42	23	1	0.0001	1,458	1	91,200	1.18	1
2010	PURSE SEINE	20,000	20,000	1	0	0	0.0000	0	0	91,200	1.18	0
2010	MWT	12,051,117	12,164,339	41	23	1	0.0001	1,455	1	91,200	1.18	1
2010	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	91,200	1.18	0
2011	TOTAL ALL GEARS	12,666,644	12,719,394	28	11	0	0.0015	19,484	9	93,905	1.15	10
2011	PURSE SEINE	0	0	0	0		0.0000	0	0	93,905	1.15	0
2011	MWT	12,666,644	12,719,394	28	11	0	0.0015	19,484	9	93,905	1.15	10
2011	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	93,905	1.15	0
2012	TOTAL ALL GEARS	27,159,523	27,317,585	52	36	1	0.0045	122,449	56	90,683	1.19	66
2012	PURSE SEINE	0	0	0	0		0.0000	0	0	90,683	1.19	0
2012	MWT	27,159,523	27,317,585	52	36	1	0.0045	122,449	56	90,683	1.19	66
2012	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	90,683	1.19	0
MEAN	TOTAL ALL GEARS	14,796,786	14,862,986	35	18	0	0.0022	44,537	20	112,498	1.00	21
MEAN	PURSE SEINE	4,000	4,000	0	0		0.0000	0	0	112,498	1.00	0
MEAN	MWT	14,792,786	14,858,986	35	18	0	0.0022	44,536	20	112,498	1.00	21
MEAN	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	112,498	1.00	0
MEDIAN	TOTAL ALL GEARS	12,666,644	12,719,394	39	11	1	0.0015	19,484	9	93,905	1.15	10
MEDIAN	PURSE SEINE	0	0	0	0		0.0000	0	0	93,905	1.15	0
MEDIAN	MWT	12,666,644	12,719,394	39	11	1	0.0015	19,484	9	93,905	1.15	10
MEDIAN	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	93,905	1.15	0
75th Percentile	TOTAL ALL GEARS	21,531,882	21,612,963	42	30	1	0.0047	100,871	46	143,350	1.19	47
75th Percentile	PURSE SEINE	10,000	10,000	0	0		0.0000	0	0	143,350	1.19	0
75th Percentile	MWT	21,531,882	21,612,963	39	24	1	0.0047	100,871	46	143,350	1.17	47
75th Percentile	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	143,350	1.19	0
HIGH	TOTAL ALL GEARS	27,159,523	27,317,585	52	36	1	0.0050	122,449	56	143,350	1.19	66
HIGH	PURSE SEINE	20,000	20,000	1	0		0.0000	0	0	143,350	1.19	0
HIGH	MWT	27,159,523	27,317,585	52	36	1	0.0050	122,449	56	143,350	1.19	66
HIGH	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	143,350	1.19	0
LOW	TOTAL ALL GEARS	6,182,407	6,185,269	16	9	0	0.0000	0	0	90,683	0.75	0
LOW	PURSE SEINE	0	0	0	0		0.0000	0	0	90,683	0.75	0
LOW	MWT	6,182,407	6,185,269	16	9	0	0.0000	0	0	90,683	0.75	0
LOW	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	90,683	0.75	0
Standard Deviation	TOTAL ALL GEARS	7,749,807	7,798,761	14	11	0	0.0024	54,188	25	28,191	0.23	28
Standard Deviation	PURSE SEINE	8,944	8,944	0	0		0.0000	0	0	28,191	0.23	0
Standard Deviation	MWT	8,661,422	8,720,845	14	12	0	0.0024	54,481	25	27,988	0.23	28
Standard Deviation	BOTTOM TRAWL	0	0	0	0		0.0000	0	0	28,191	0.23	0
CV	TOTAL ALL GEARS	0.52	0.52	0.39	0.64	0.32	1.07	1.22	1.22	0.25	0.23	1.32
CV	PURSE SEINE	2.24	2.24	2.24						0.25	0.23	
CV	MWT	0.59	0.59	0.39	0.65	0.32	1.08	1.22	1.22	0.25	0.23	1.33
CV	BOTTOM TRAWL									0.25	0.23	





Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Cape Cod (CC) RH/S Cap Area : 521

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC)	Estimated RH/S catch (mt) (butterfish cap method) (D/2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
2008	Mean	407,801	407,906	0.0050	2,057	1	143,350	1.33	1
	Total	407,801	407,906	0.0050	2,057	1	143,350	1.33	1
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	407,801	407,906	0.0052	2,103	1	143,350	1.33	1
Median	Total	344,597	344,597	0.0047	1,632	1	143,350	1.33	1
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	344,597	344,597	0.0048	1,666	1	143,350	1.33	1
	Bottom Trawl	0	0		0	0	143,350	1.33	0
75th Percentile	Total	615,600	615,600	0.0008	514	0	143,350	1.33	0
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	615,600	615,600	0.0008	521	0	143,350	1.33	0
	Bottom Trawl	0	0		0	0	143,350	1.33	0
High	Total	1,032,810	1,033,038	0.0263	27,124	12	143,350	1.33	16
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	1,032,810	1,033,038	0.0254	26,208	12	143,350	1.33	16
	Bottom Trawl	0	0		0	0	143,350	1.33	0
Low	Total	35,697	35,697	0.0000	0	0	143,350	1.33	0
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	35,697	35,697	0.0000	0	0	143,350	1.33	0
	Bottom Trawl	0	0		0	0	143,350	1.33	0
Standard Deviation	Total	249,444	249,419	0.0042	1,042	0	143,350	1.33	1
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	249,444	249,419	0.0042	1,049	0	143,350	1.33	1
	Bottom Trawl	0	0		0	0	143,350	1.33	0
CV	Total	0.61	0.61	0.83	0.51	0.00	143,350	1.33	0
	Purse Seine						143,350	1.33	
	MWT	0.61	0.61	0.82	0.50	0.00	143,350	1.33	0
	Bottom Trawl						143,350	1.33	

\* Information in this table is based on:

Total: Cap trips n = 39; Observed Cap trips 11; % of Cap trips observed 28%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 39; Observed Cap trips 11; % of Cap trips observed 28%

Bottom Trawl: Cap trips n = 1; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Cape Cod (CC) RH/S Cap Area : 521

		A	B	C	D	E	F	G	H
		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Year	2009								
Mean	Total	386400.44	386579.32	0.0000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	386400.44	386579.32	0.0000	0	0	143350	1.33	0
	Bottom Trawl	0	0		0	0	143350	1.33	0
Median	Total	348450	348518	0.0000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	348450	348518	0.0000	0	0	143350	1.33	0
	Bottom Trawl	0	0		0	0	143350	1.33	0
75th Percentile	Total	525261	525455	0.0000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	525261	525455	0.0000	0	0	143350	1.33	0
	Bottom Trawl	0	0		0	0	143350	1.33	0
High	Total	853075	853323	0.0000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	853075	853323	0.0000	0	0	143350	1.33	0
	Bottom Trawl	0	0		0	0	143350	1.33	0
Low	Total	43000	43000	0.0000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	43000	43000	0.0000	0	0	143350	1.33	0
	Bottom Trawl	0	0		0	0	143350	1.33	0
Standard Deviation	Total	234485.95	234712.39	0.0000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	234485.95	234712.39	0.0000	0	0	143350	1.33	0
	Bottom Trawl	0	0		0	0	143350	1.33	0
CV	Total	0.61	0.61		0	0	143350	1.33	0
	Purse Seine						143350	1.33	
	MWT	0.61	0.61		0	0	143350	1.33	0
	Bottom Trawl						143350	1.33	

\* Information in this table is based on:

- Total: Cap trips n = 16; Observed Cap trips 9; % of Cap trips observed 56%
- Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%
- MWT: Cap trips n = 16; Observed Cap trips 9; % of Cap trips observed 56%
- Bottom Trawl: Cap trips n = 0; Observed Cap trips 0; % of Cap trips Observed 0%

Cape Cod (CC) RH/S Cap Area : 521

Year		A	B	C	D	E	F	G	H
2010		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	287,408	290,103	0.0001	35	0.0159	91200	0.85	0
	Purse Seine	20,000	20,000		0	0.0000	91200	0.85	0
	MWT	293,930	386,579	0.0001	47	0.0214	91200	0.85	0
	Bottom Trawl	0	0		0	0.0000	91200	0.85	0
Median	Total	251,700	252,005	0.0001	29	0.0132	91200	0.85	0
	Purse Seine	20,000	20,000		0	0.0000	91200	0.85	0
	MWT	253,300	348,518	0.0001	41	0.0184	91200	0.85	0
	Bottom Trawl	0	0		0	0.0000	91200	0.85	0
75th Percentile	Total	427,042	428,495	0.0001	36	0.0162	91200	0.85	0
	Purse Seine	20,000	20,000		0	0.0000	91200	0.85	0
	MWT	428,905	525,455	0.0001	44	0.0202	91200	0.85	0
	Bottom Trawl	0	0		0	0.0000	91200	0.85	0
High	Total	769,485	791,485	0.0004	288	0.1306	91200	0.85	0
	Purse Seine	20,000	20,000		0	0.0000	91200	0.85	0
	MWT	769,485	853,323	0.0004	350	0.1588	91200	0.85	0
	Bottom Trawl	0	0		0	0.0000	91200	0.85	0
Low	Total	20,000	20,000	0.0000	0	0.0000	91200	0.85	0
	Purse Seine	20,000	20,000		0	0.0000	91200	0.85	0
	MWT	32,400	43,000	0.0000	0	0.0001	91200	0.85	0
	Bottom Trawl	0	0		0	0.0000	91200	0.85	0
Standard Deviation	Total	197,364.52	197,714.37	0.0001	10	0.0047	91200	0.85	0
	Purse Seine	0.00	0.00		0	0.0000	91200	0.85	0
	MWT	195,180.17	234,712.39	0.0001	12	0.0056	91200	0.85	0
	Bottom Trawl	0.00	0.00		0	0.0000	91200	0.85	0
CV	Total	0.69	0.68	0.43	0.29	0.0001	91200	0.85	0.00
	Purse Seine	0.00	0.00		0.00	0.0000	91200	0.85	0.00
	MWT	0.66	0.61	0.43	0.26	0.0001	91200	0.85	0.00
	Bottom Trawl						91200	0.85	

\* Information in this table is based on:

- Total: Cap trips n = 42; Observed Cap trips 23; % of Cap trips observed 55%
- Purse Seine: Cap trips: n = 1; Observed Cap trips 0; % of Cap trips observed 0%
- MWT: Cap trips n = 41; Observed Cap trips 23; % of Cap trips observed 56%
- Bottom Trawl: Cap trips n = 0; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Cape Cod (CC) RH/S Cap Area : 521

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
2011	Mean	452,380	454,264	0	734	0.3330	93905	0.87	0
	Total	452,380	454,264	0	734	0.3330	93905	0.87	0
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	452,380	454,264	0	736	0.3339	93905	0.87	0
2011	Median	337,951	337,951	0	484	0.2194	93905	0.87	0
	Total	337,951	337,951	0	484	0.2194	93905	0.87	0
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	337,951	337,951	0	488	0.2213	93905	0.87	0
2011	75th Percentile	721,327	721,352	0	577	0.2618	93905	0.87	0
	Total	721,327	721,352	0	577	0.2618	93905	0.87	0
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	721,327	721,352	0	571	0.2589	93905	0.87	0
2011	High	1,107,700	1,107,700	0	9,298	4.2176	93905	0.87	4
	Total	1,107,700	1,107,700	0	9,298	4.2176	93905	0.87	4
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	1,107,700	1,107,700	0	8,817	3.9992	93905	0.87	3
2011	Low	105,798	105,798	0	0	0.0000	93905	0.87	0
	Total	105,798	105,798	0	0	0.0000	93905	0.87	0
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	105,798	105,798	0	0	0.0000	93905	0.87	0
2011	Standard Deviation	303,063	301,632	0	329	0.1494	93905	0.87	0
	Total	303,063	301,632	0	329	0.1494	93905	0.87	0
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	303,063	301,632	0	331	0.1501	93905	0.87	0
2011	CV	0.67	0.66	0.68	0.45	0.0002	93905	0.87	0
	Total	0.67	0.66	0.68	0.45	0.0002	93905	0.87	0
	Purse Seine	0	0	0	0	0.0000	93905	0.87	0
	MWT	0.67	0.66	0.68	0.45	0.0002	93905	0.87	0

\* Information in this table is based on:

Total: Cap trips n = 28; Observed Cap trips 11; % of Cap trips observed 39%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 28; Observed Cap trips 11; % of Cap trips observed 39%

Bottom Trawl: Cap trips n = 0; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Cape Cod (CC) RH/S Cap Area : 521

		A	B	C	D	E	F	G	H
Year	2012	Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	532,540	525,338	0	2,352	1.0668	90683	0.84	1
	Purse Seine	0	0		0	0.0000	90683	0.84	0
	MWT	532,540	525,338	0	2,369	1.0744	90683	0.84	1
	Bottom Trawl	0	0		0	0.0000	90683	0.84	0
Median	Total	512,180	499,690	0	2,074	0.9406	90683	0.84	1
	Purse Seine	0	0		0	0.0000	90683	0.84	0
	MWT	512,180	499,690	0	2,077	0.9422	90683	0.84	1
	Bottom Trawl	0	0		0	0.0000	90683	0.84	0
75th Percentile	Total	742,463	726,623	0	1,719	0.7795	90683	0.84	1
	Purse Seine	0	0		0	0.0000	90683	0.84	0
	MWT	742,463	726,623	0	1,707	0.7743	90683	0.84	1
	Bottom Trawl	0	0		0	0.0000	90683	0.84	0
High	Total	1,443,575	1,443,575	0	30,680	13.9162	90683	0.84	12
	Purse Seine	0	0		0	0.0000	90683	0.84	0
	MWT	1,443,575	1,443,575	0	27,564	12.5029	90683	0.84	11
	Bottom Trawl	0	0		0	0.0000	90683	0.84	0
Low	Total	25,000	25,000	0	0	0.0000	90683	0.84	0
	Purse Seine	0	0		0	0.0000	90683	0.84	0
	MWT	25,000	25,000	0	0	0.0001	90683	0.84	0
	Bottom Trawl	0	0		0	0.0000	90683	0.84	0
Standard Deviation	Total	324,385	331,834	0	865	0.3923	90683	0.84	0
	Purse Seine	0	0		0	0.0000	90683	0.84	0
	MWT	324,385	331,834	0	873	0.3961	90683	0.84	0
	Bottom Trawl	0	0		0	0.0000	90683	0.84	0
CV	Total	0.61	0.63	0.58	0.37	0.0002	90683	0.84	0.00
	Purse Seine						90683	0.84	
	MWT	0.61	0.63	0.58	0.37	0.0002	90683	0.84	0.00
	Bottom Trawl						90683	0.84	

\* Information in this table is based on:

Total: Cap trips n = 52; Observed Cap trips 36; % of Cap trips observed 69%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 52; Observed Cap trips 36; % of Cap trips observed 69%

Bottom Trawl: Cap trips n = 0; Observed Cap trips 0; % of Cap trips Observed 0%



Data queried from DMIS and OBDBS databases on 7/24/2013

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Georges Bank (GB) RH/S Cap Area : 522, 525, 526, 541, 542, 543, 561, 562

		A	B	C	D	E	F	G	H	I	J	K
YEAR	Gear	Total Atlantic herring landings (lb) on Cap trips (>6,600 lb)	Total landings (lb) all species on Cap trips	Total # Cap trips	# of observed Cap trips	% of Cap trips that were observed (D/C)	RH/S Ratio RH/S catch vs. kept catch on obs Cap trips	Estimated RH/S catch (lb) (butterfish cap method) (B x F)	Estimated RH/S catch (mt) (butterfish cap method) (G / 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / I)	Estimated RH/S catch scaled for 2013-2015 herring ACL (107,800 mt) (H x J)
2008	TOTAL ALL GEARS	15,739,071	17,084,673	39	11	0	0.0000	0	0	143,350	0.75	0
2008	PURSE SEINE	147,000	147,000	1	0	0	0.0000	0	0	143,350	0.75	0
2008	MWT	15,592,071	16,674,664	36	11	0	0.0000	0	0	143,350	0.75	0
2008	BOTTOM TRAWL	0	263,009	2	0	0	0.0000	0	0	143,350	0.75	0
2009	TOTAL ALL GEARS	57,321,088	59,295,899	109	33	0	0.0000	0	0	143,350	0.75	0
2009	PURSE SEINE	0	0	0	0	0	0.0000	0	0	143,350	0.75	0
2009	MWT	57,124,225	58,873,736	104	33	0	0.0000	0	0	143,350	0.75	0
2009	BOTTOM TRAWL	196,863	422,163	5	0	0	0.0000	0	0	143,350	0.75	0
2010	TOTAL ALL GEARS	31,326,381	31,546,688	91	70	1	0.0001	2,295	1	91,200	1.18	1
2010	PURSE SEINE	145,300	145,300	1	0	0	0.0000	0	0	91,200	1.18	0
2010	MWT	31,181,081	31,398,286	89	70	1	0.0001	2,284	1	91,200	1.18	1
2010	BOTTOM TRAWL	0	3,102	1	0	0	0.0000	0	0	91,200	1.18	0
2011	TOTAL ALL GEARS	70,460,080	70,761,268	186	73	0	0.0000	2,016	1	93,905	1.15	1
2011	PURSE SEINE	0	0	0	0	0	0.0000	0	0	93,905	1.15	0
2011	MWT	70,411,376	70,644,119	183	73	0	0.0000	2,012	1	93,905	1.15	1
2011	BOTTOM TRAWL	48,704	117,149	3	0	0	0.0000	0	0	93,905	1.15	0
2012	TOTAL ALL GEARS	67,427,978	67,691,171	171	113	1	0.0000	691	0	90,683	1.19	0
2012	PURSE SEINE	196,900	196,900	2	0	0	0.0000	0	0	90,683	1.19	0
2012	MWT	67,231,078	67,494,271	169	113	1	0.0000	689	0	90,683	1.19	0
2012	BOTTOM TRAWL	0	0	0	0	0	0.0000	0	0	90,683	1.19	0
MEAN	TOTAL ALL GEARS	48,454,920	49,275,940	119	60	0	0.0000	1,000	0	112,498	1.00	1
MEAN	PURSE SEINE	97,840	97,840	1	0	0	0.0000	0	0	112,498	1.00	0
MEAN	MWT	48,307,966	49,017,015	116	60	0	0.0000	997	0	112,498	1.00	1
MEAN	BOTTOM TRAWL	49,113	161,084	2	0	0	0.0000	0	0	112,498	1.00	0
MEDIAN	TOTAL ALL GEARS	57,321,088	59,295,899	109	70	0	0.0000	691	0	93,905	1.15	0
MEDIAN	PURSE SEINE	145,300	145,300	1	0	0	0.0000	0	0	93,905	1.15	0
MEDIAN	MWT	57,124,225	58,873,736	104	70	0	0.0000	689	0	93,905	1.15	0
MEDIAN	BOTTOM TRAWL	0	117,149	2	0	0	0.0000	0	0	93,905	1.15	0
75th Percentile	TOTAL ALL GEARS	68,944,029	69,226,220	171	93	1	0.0001	2,156	1	143,350	1.19	1
75th Percentile	PURSE SEINE	171,950	171,950	1	0	0	0.0000	0	0	143,350	1.19	0
75th Percentile	MWT	68,821,227	69,069,195	169	93	0	0.0000	1,351	1	143,350	1.17	1
75th Percentile	BOTTOM TRAWL	122,784	342,586	3	0	0	0.0000	0	0	143,350	1.19	0
HIGH	TOTAL ALL GEARS	70,460,080	70,761,268	186	113	1	0.0001	2,295	1	143,350	1.19	1
HIGH	PURSE SEINE	196,900	196,900	2	0	0	0.0000	0	0	143,350	1.19	0
HIGH	MWT	70,411,376	70,644,119	183	113	1	0.0001	2,284	1	143,350	1.19	1
HIGH	BOTTOM TRAWL	196,863	422,163	5	0	0	0.0000	0	0	143,350	1.19	0
LOW	TOTAL ALL GEARS	15,739,071	17,084,673	39	11	0	0.0000	0	0	90,683	0.75	0
LOW	PURSE SEINE	0	0	0	0	0	0.0000	0	0	90,683	0.75	0
LOW	MWT	15,592,071	16,674,664	36	11	0	0.0000	0	0	90,683	0.75	0
LOW	BOTTOM TRAWL	0	0	0	0	0	0.0000	0	0	90,683	0.75	0
Standard Deviation	TOTAL ALL GEARS	23,908,819	23,726,271	60	39	0	0.0000	1,096	0	28,191	0.23	1
Standard Deviation	PURSE SEINE	91,689	91,689	1	0	0	0.0000	0	0	28,191	0.23	0
Standard Deviation	MWT	22,010,328	21,785,879	60	41	0	0.0000	875	0	27,988	0.23	0
Standard Deviation	BOTTOM TRAWL	85,244	181,237	2	0	0	0.0000	0	0	28,191	0.23	0
CV	TOTAL ALL GEARS	0.49	0.48	0.50	0.66	0.46	1.37	1.10	1.09	0.25	0.23	1.09
CV	PURSE SEINE	0.94	0.94	1.05						0.25	0.23	
CV	MWT	0.46	0.44	0.52	0.68	0.44	0.56	0.88	0.87	0.25	0.23	0.86
CV	BOTTOM TRAWL	1.74	1.13	0.87						0.25	0.23	





Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software

Georges Bank (GB) RH/S Cap Area : 522, 525, 526, 541, 542, 543, 561, 562

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
2008	Mean	425380.3	432981.82	0.000000000	0	0	143350	1.33	0
	Purse Seine	147000	147000		0	0	143350	1.33	0
	MWT	433113.08	463185.11	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	0	131504.35		0	0	143350	1.33	0
Median	Total	327154	335216	0.000000000	0	0	143350	1.33	0
	Purse Seine	147000	147000		0	0	143350	1.33	0
	MWT	335998.5	355624.07	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	0	131504		0	0	143350	1.33	0
75th Percentile	Total	607636.5	631873	0.000000000	0	0	143350	1.33	0
	Purse Seine	147000	147000		0	0	143350	1.33	0
	MWT	612169.25	658488	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	0	157189		0	0	143350	1.33	0
High	Total	1200950	1203228	0.000000000	0	0	143350	1.33	0
	Purse Seine	147000	147000		0	0	143350	1.33	0
	MWT	1200950	1203228	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	0	157189		0	0	143350	1.33	0
Low	Total	39600	52100	0.000000000	0	0	143350	1.33	0
	Purse Seine	147000	147000		0	0	143350	1.33	0
	MWT	39600	52100	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	0	105820		0	0	143350	1.33	0
Standard Deviation	Total	313169.04	312020.52	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	314008.47	314408.15	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	0	36323.58		0	0	143350	1.33	0
CV	Total	0.74	0.72		0.00	0	143350	1.33	0
	Purse Seine	0.00	0.00		0.00	0	143350	1.33	0
	MWT	0.73	0.68		0.00	0	143350	1.33	0
	Bottom Trawl		0.28		0.00	0	143350	1.33	0

\* Information in this table is based on:

Total: Cap trips n = 39; Observed Cap trips 11; % of Cap trips observed 28%

Purse Seine: Cap trips: n = 1; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 36; Observed Cap trips 11; % of Cap trips observed 31%

Bottom Trawl: Cap trips n = 2; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Georges Bank (GB) RH/S Cap Area : 522, 525, 526, 541, 542, 543, 561, 562

Year		A	B	C	D	E	F	G	H
2009		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	540764.98	539754.86	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	549271.39	566093.61	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	98431.485	84432.546		0	0	143350	1.33	0
Median	Total	543262	550398.67	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	552440	562146	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	98431	77136		0	0	143350	1.33	0
75th Percentile	Total	806531.5	811371	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	808772.5	817596.88	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	125605	154481		0	0	143350	1.33	0
High	Total	1417700	1417700	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	1417700	1417700	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	125605	183357		0	0	143350	1.33	0
Low	Total	22817	594.49997	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	22817	26400	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	71258	594		0	0	143350	1.33	0
Standard Deviation	Total	347089.83	350386.22	0.000000000	0	0	143350	1.33	0
	Purse Seine	0	0		0	0	143350	1.33	0
	MWT	344853.59	341871.89	0.000000000	0	0	143350	1.33	0
	Bottom Trawl	38429.153	72389.04		0	0	143350	1.33	0
CV	Total	0.64	0.65		0	0	143350	1.33	0
	Purse Seine						143350	1.33	
	MWT	0.63	0.60		0	0	143350	1.33	0
	Bottom Trawl	0.39	0.86		0	0	143350	1.33	0

\* Information in this table is based on:

Total: Cap trips n = 109; Observed Cap trips 33; % of Cap trips observed 30%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 104; Observed Cap trips 33; % of Cap trips observed 32%

Bottom Trawl: Cap trips n = 5; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Georges Bank (GB) RH/S Cap Area : 522, 525, 526, 541, 542, 543, 561, 562

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	345,626	344,024	0.0001	25	0	91,200	0.85	0
	Purse Seine	145,300	145,300		0	0	91,200	0.85	0
	MWT	347,852	350,020	0.0001	25	0	91,200	0.85	0
	Bottom Trawl	0	3,102		0	0	91,200	0.85	0
Median	Total	336,600	333,974	0.0001	24	0	91,200	0.85	0
	Purse Seine	145,300	145,300		0	0	91,200	0.85	0
	MWT	340,800	343,655	0.0001	24	0	91,200	0.85	0
	Bottom Trawl	0	3,102		0	0	91,200	0.85	0
75th Percentile	Total	478,200	477,313	0.0001	26	0	91,200	0.85	0
	Purse Seine	145,300	145,300		0	0	91,200	0.85	0
	MWT	480,471	480,471	0.0001	26	0	91,200	0.85	0
	Bottom Trawl	0	3,102		0	0	91,200	0.85	0
High	Total	1,327,500	1,327,500	0.0002	259	0	91,200	0.85	0
	Purse Seine	145,300	145,300		0	0	91,200	0.85	0
	MWT	1,327,500	1,327,500	0.0002	248	0	91,200	0.85	0
	Bottom Trawl	0	3,102		0	0	91,200	0.85	0
Low	Total	24,800	3,102	0.0000	0	0	91,200	0.85	0
	Purse Seine	145,300	145,300		0	0	91,200	0.85	0
	MWT	24,800	25,420	0.0000	0	0	91,200	0.85	0
	Bottom Trawl	0	3,102		0	0	91,200	0.85	0
Standard Deviation	Total	236,007	239,957	0.0000	6	0	91,200	0.85	0
	Purse Seine	0	0		0	0	91,200	0.85	0
	MWT	236,367	238,930	0.0000	6	0	91,200	0.85	0
	Bottom Trawl	0	0		0	0	91,200	0.85	0
CV	Total	0.68	0.70	0.35	0.24	0.00	91,200	0.85	0
	Purse Seine	0.00	0.00		0.00	0.00	91,200	0.85	0
	MWT	0.68	0.68	0.35	0.24	0.00	91,200	0.85	0
	Bottom Trawl	0.00	0.00		0.00	0.00	91,200	0.85	0

\* Information in this table is based on:

Total: Cap trips n = 91; Observed Cap trips 70; % of Cap trips observed 77%

Purse Seine: Cap trips: n = 1; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 89; Observed Cap trips 70; % of Cap trips observed 79%

Bottom Trawl: Cap trips n = 1; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software

Georges Bank (GB) RH/S Cap Area : 522, 525, 526, 541, 542, 543, 561, 562

Year		A	B	C	D	E	F	G	H
2011		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	379387.53	378618.32	0.0000	11	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	384761.62	386033.44	0.0000	11	0	93,905	0.87	0
	Bottom Trawl	24352.1	39049.698		0	0	93,905	0.87	0
Median	Total	339470	336890	0.0000	9	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	342200	342200	0.0000	9	0	93,905	0.87	0
	Bottom Trawl	24352	39225		0	0	93,905	0.87	0
75th Percentile	Total	495187.5	492250	0.0000	8	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	504000	504833	0.0000	8	0	93,905	0.87	0
	Bottom Trawl	28624	40357		0	0	93,905	0.87	0
High	Total	1435450	1435450	0.0001	160	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	1435450	1435450	0.0001	160	0	93,905	0.87	0
	Bottom Trawl	28624	40357		0	0	93,905	0.87	0
Low	Total	20000	20000	0.0000	0	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	20000	20000	0.0000	0	0	93,905	0.87	0
	Bottom Trawl	20081	37567		0	0	93,905	0.87	0
Standard Deviation	Total	268251.96	269801.01	0.0000	5	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	267058.39	267969.71	0.0000	4	0	93,905	0.87	0
	Bottom Trawl	6040.9122	1403.3581		0	0	93,905	0.87	0
CV	Total	0.71	0.71	0.58	0.41	0.00	93,905	0.87	0
	Purse Seine						93,905	0.87	
	MWT	0.69	0.69	0.58	0.40	0.00	93,905	0.87	0
	Bottom Trawl	0.25	0.04		0.00	0.00	93,905	0.87	0

\* Information in this table is based on:

Total: Cap trips n = 186; Observed Cap trips 73; % of Cap trips observed 39%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 183; Observed Cap trips 73; % of Cap trips observed 40%

Bottom Trawl: Cap trips n = 3; Observed Cap trips 0; % of Cap trips Observed 0%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Georges Bank (GB) RH/S Cap Area : 522, 525, 526, 541, 542, 543, 561, 562

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013 2015 herring ACL (107,800 mt) (ExG)
2012	Mean Total	391,041	391,275	0.0000	4	0	90683	0.84	0
	Purse Seine	98,450	98,450		0	0	90683	0.84	0
	MWT	394,503	396,058	0.0000	4	0	90683	0.84	0
	Bottom Trawl	0	0		0	0	90683	0.84	0
	Median Total	330,700	329,850	0.0000	3	0	90683	0.84	0
Purse Seine	98,450	98,450		0	0	90683	0.84	0	
MWT	335,010	336,800	0.0000	3	0	90683	0.84	0	
Bottom Trawl	0	0		0	0	90683	0.84	0	
75th Percentile Total	529,600	529,900	0.0000	4	0	90683	0.84	0	
Purse Seine	177,500	177,500		0	0	90683	0.84	0	
MWT	529,800	533,502	0.0000	4	0	90683	0.84	0	
Bottom Trawl	0	0		0	0	90683	0.84	0	
High Total	1,399,900	1,399,900	0.0000	45	0	90683	0.84	0	
Purse Seine	177,500	177,500		0	0	90683	0.84	0	
MWT	1,399,900	1,399,900	0.0000	48	0	90683	0.84	0	
Bottom Trawl	0	0		0	0	90683	0.84	0	
Low Total	12,000	12,000	0.0000	0	0	90683	0.84	0	
Purse Seine	19,400	19,400		0	0	90683	0.84	0	
MWT	12,000	12,000	0.0000	0	0	90683	0.84	0	
Bottom Trawl	0	0		0	0	90683	0.84	0	
Standard Deviation Total	280,356	280,488	0.0000	1	0	90683	0.84	0	
Purse Seine	111,794	111,794		0	0	90683	0.84	0	
MWT	280,053	280,473	0.0000	1	0	90683	0.84	0	
Bottom Trawl	0	0		0	0	90683	0.84	0	
CV Total	0.72	0.72	0.40	0	0	90683	0.84	0	
Purse Seine	1.14	1.14		0	0	90683	0.84	0	
MWT	0.71	0.71	0.41	0	0	90683	0.84	0	
Bottom Trawl						90683	0.84	0	

\* Information in this table is based on:

Total: Cap trips n = 171; Observed Cap trips 113; % of Cap trips observed 66%

Purse Seine: Cap trips: n = 169; Observed Cap trips 113; % of Cap trips observed 67%

MWT: Cap trips n = 87; Observed Cap trips 87; % of Cap trips observed 16%

Bottom Trawl: Cap trips n = 0; Observed Cap trips 0; % of Cap trips Observed 0%



Data queried from DMIS and OBDBS databases on 7/24/2013

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Southern New England/Mid-Atlantic (SNE/MA) RH/S Cap Area : 533, 534, 537, 538, 539, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639

		A	B	C	D	E	F	G	H	I	J	K
YEAR	Gear	Total Atlantic herring landings (lb) on Cap trips (>6,600 lb)	Total landings (lb) all species on Cap trips	Total # Cap trips	# of observed Cap trips	% of Cap trips that were observed (D/C)	RH/S Ratio RH/S catch vs. kept catch on obs Cap trips	Estimated RH/S catch (lb) (butterfish cap method) (B x F)	Estimated RH/S catch (mt) (butterfish cap method) (G / 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / I)	Estimated RH/S catch scaled for 2013-2015 herring ACL (107,800 mt) (H x J)
2008	TOTAL ALL GEARS	48,696,941	72,965,086	225	20	9%	0.0127	925,672	420	143,350	0.75	316
2008	PURSE SEINE	0	1,674,880	0	0	0%	0.0000	0	0	143,350	0.75	0
2008	MWT	44,300,576	63,048,065	154	19	12%	0.0128	805,513	365	143,350	0.75	275
2008	BOTTOM TRAWL	4,396,365	8,242,140	71	1	1%	0.0000	0	0	143,350	0.75	0
2009	TOTAL ALL GEARS	62,328,662	94,589,836	323	33	10%	0.0030	287,469	130	143,350	0.75	98
2009	PURSE SEINE	0	0	0	0	0%	0.0000	0	0	143,350	0.75	0
2009	MWT	53,161,019	81,304,505	189	25	13%	0.0026	209,503	95	143,350	0.75	71
2009	BOTTOM TRAWL	9,167,643	13,285,331	134	8	6%	0.0147	195,523	89	143,350	0.75	67
2010	TOTAL ALL GEARS	42,304,459	59,151,621	214	32	15%	0.0013	75,178	34	91,200	1.18	40
2010	PURSE SEINE	0	0	0	0	0%	0.0000	0	0	91,200	1.18	0
2010	MWT	34,039,015	48,849,723	116	27	23%	0.0012	56,437	26	91,200	1.18	30
2010	BOTTOM TRAWL	8,265,444	10,301,898	98	5	5%	0.0027	27,933	13	91,200	1.18	15
2011	TOTAL ALL GEARS	30,433,370	32,284,447	197	42	21%	0.0025	80,661	37	93,905	1.15	42
2011	PURSE SEINE	0	0	0	0	0%	0.0000	0	0	93,905	1.15	0
2011	MWT	21,262,957	21,602,375	77	30	39%	0.0025	53,962	24	93,905	1.15	28
2011	BOTTOM TRAWL	9,170,413	10,682,072	120	12	10%	0.0025	26,726	12	93,905	1.15	14
2012	TOTAL ALL GEARS	46,970,035	52,920,953	241	32	13%	0.0090	474,170	215	90,683	1.19	256
2012	PURSE SEINE	0	0	0	0	0%	0.0000	0	0	90,683	1.19	0
2012	MWT	37,004,723	40,600,665	151	19	13%	0.0125	508,294	231	90,683	1.19	274
2012	BOTTOM TRAWL	9,965,312	12,320,288	90	13	14%	0.0007	9,223	4	90,683	1.19	5
MEAN	TOTAL ALL GEARS	46,146,693	62,382,388	240	31.8	14%	0.0057	368,630	167	112,498	1.00	150
MEAN	PURSE SEINE	0	334,976	0	0	0%	0.0000	0	0	112,498	1.00	0
MEAN	MWT	37,953,658	51,081,067	137.4	24	20%	0.0063	326,742	148	112,498	1.00	136
MEAN	BOTTOM TRAWL	8,193,035	10,966,346	102.6	7.8	7%	0.0041	51,881	24	112,498	1.00	20
MEDIAN	TOTAL ALL GEARS	46,970,035	59,151,621	225	32	13%	0.0030	287,469	130	93,905	1.15	98
MEDIAN	PURSE SEINE	0	0	0	0	0%	0.0000	0	0	93,905	1.15	0
MEDIAN	MWT	37,004,723	48,849,723	151	25	13%	0.0026	209,503	95	93,905	1.15	71
MEDIAN	BOTTOM TRAWL	9,167,643	10,682,072	98	8	6%	0.0025	26,726	12	93,905	1.15	14
75th Percentile	TOTAL ALL GEARS	55,512,802	83,777,461	241	37.5	15%	0.0108	699,921	317	143,350	1.19	286
75th Percentile	PURSE SEINE	0	837,440	0	0	0%	0.0000	0	0	143,350	1.19	0
75th Percentile	MWT	53,161,019	81,304,505	189	27.5	13%	0.0127	656,904	298	143,350	1.17	274
75th Percentile	BOTTOM TRAWL	9,567,863	12,802,810	120	12.5	10%	0.0087	111,728	51	143,350	1.19	41
HIGH	TOTAL ALL GEARS	62,328,662	94,589,836	323	42	21%	0.0127	925,672	420	143,350	1.19	316
HIGH	PURSE SEINE	0	1,674,880	0	0	0%	0.0000	0	0	143,350	1.19	0
HIGH	MWT	53,161,019	81,304,505	189	30	39%	0.0128	805,513	365	143,350	1.19	275
HIGH	BOTTOM TRAWL	9,965,312	13,285,331	134	13	14%	0.0147	195,523	89	143,350	1.19	67
LOW	TOTAL ALL GEARS	30,433,370	32,284,447	197	20	9%	0.0013	75,178	34	90,683	0.75	40
LOW	PURSE SEINE	0	0	0	0	0%	0.0000	0	0	90,683	0.75	0
LOW	MWT	21,262,957	21,602,375	77	19	12%	0.0012	53,962	24	90,683	0.75	28
LOW	BOTTOM TRAWL	4,396,365	8,242,140	71	1	1%	0.0000	0	0	90,683	0.75	0
Standard Deviation	TOTAL ALL GEARS	11,518,562.00	23,211,828.00	49.09	7.82	0.05	0.00	352,513.05	159.90	28,190.83	0.23	127.51
Standard Deviation	PURSE SEINE	0.00	749,029.11	0.00	0.00	0.00	0.00	0.00	0.00	28,190.83	0.23	0.00
Standard Deviation	MWT	13,315,037.00	26,164,341.00	42.51	4.67	0.12	0.01	299,748.19	135.96	27,987.72	0.23	120.39
Standard Deviation	BOTTOM TRAWL	2,206,016.80	1,946,435.90	24.84	4.97	0.05	0.01	81,164.41	36.82	28,190.83	0.23	26.78
CV	TOTAL ALL GEARS	0.25	0.37	0.20	0.25	0.36	0.86	0.96	0.96	0.25	0.23	0.85
CV	PURSE SEINE		2.24							0.25	0.23	
CV	MWT	0.35	0.51	0.31	0.19	0.57	0.88	0.92	0.92	0.25	0.23	0.89
CV	BOTTOM TRAWL	0.27	0.18	0.24	0.64	0.68	1.46	1.56	1.56	0.25	0.23	1.33





Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Southern New England/Mid-Atlantic (SNE/MA) RH/S Cap Area : 533, 534, 537, 538, 539, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639

Year		A	B	C	D	E	F	G	H
		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap trips	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	214,264	288,225	0.0141	4,061	2	143,350	1.33	2
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	287,666	379,695	0.0141	5,340	2	143,350	1.33	3
	Bottom Trawl	61,850	99,742	0.0000	0	0	143,350	1.33	0
Median	Total	113,910	178,835	0.0136	2,425	1	143,350	1.33	1
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	200,296	306,232	0.0135	4,133	2	143,350	1.33	2
	Bottom Trawl	48,600	52,000	0.0000	0	0	143,350	1.33	0
75th Percentile	Total	289,691	456,822	0.0087	3,978	2	143,350	1.33	2
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	432,243	540,673	0.0087	4,688	2	143,350	1.33	3
	Bottom Trawl	81,000	93,800	0.0000	0	0	143,350	1.33	0
High	Total	1,524,419	1,601,245	0.0469	75,020	34	143,350	1.33	45
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	1,524,419	1,601,245	0.0556	88,975	40	143,350	1.33	54
	Bottom Trawl	432,236	744,260	0.0000	0	0	143,350	1.33	0
Low	Total	7,000	7,000	0.0003	2	0	143,350	1.33	0
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	7,700	10,000	0.0004	4	0	143,350	1.33	0
	Bottom Trawl	7,000	7,000	0.0000	0	0	143,350	1.33	0
Standard Deviation	Total	244,767.74	291,666.76	0.01	2,095.55	0.95	143,350.00	1.33	1.26
	Purse Seine	0.00	0.00		0.00	0.00	143,350.00	1.33	0.00
	MWT	265,784.59	302,000.17	0.01	2,162.73	0.98	143,350.00	1.33	1.30
	Bottom Trawl	57,888.14	140,408.30	0.00	0.00	0.00	143,350.00	1.33	0.00
CV	Total	1.14	1.01	0.51	0.52	0.00	143,350.00	1.33	0.00
	Purse Seine						143,350.00	1.33	
	MWT	0.92	0.80	0.51	0.41	0.00	143,350.00	1.33	0.00
	Bottom Trawl	0.94	1.41		0.00	0.00	143,350.00	1.33	0.00

\* Information in this table is based on:

- Total: Cap trips n = 225; Observed Cap trips 20; % of Cap trips observed 9%
- Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%
- MWT: Cap trips n = 154; Observed Cap trips 19; % of Cap trips observed 1%
- Bottom Trawl: Cap trips n = 71; Observed Cap trips 1; % of Cap trips Observed 1%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Southern New England/Mid-Atlantic (SNE/MA) RH/S Cap Area : 533, 534, 537, 538, 539, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	194821.18	287121.65	0.0029	831	0	143,350	1.33	1
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	282,771	421,271	0.0025	1,061	0	143,350	1.33	1
	Bottom Trawl	69,980	95,658	0.0137	1,309	1	143,350	1.33	1
Median	Total	101,450	177,887	0.0027	475	0	143,350	1.33	0
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	209,558	391,978	0.0023	903	0	143,350	1.33	1
	Bottom Trawl	52,600	58,125	0.0124	719	0	143,350	1.33	0
75th Percentile	Total	249,900	456,230	0.0017	792	0	143,350	1.33	0
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	389,100	577,282	0.0012	716	0	143,350	1.33	0
	Bottom Trawl	90,000	94,313	0.0084	796	0	143,350	1.33	0
High	Total	2,231,600	2,231,600	0.0116	25,961	12	143,350	1.33	16
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	2,231,600	2,231,600	0.0120	26,694	12	143,350	1.33	16
	Bottom Trawl	450,000	574,320	0.0423	24,316	11	143,350	1.33	15
Low	Total	6,660	6,660	0.0005	3	0	143,350	1.33	0
	Purse Seine	0	0		0	0	143,350	1.33	0
	MWT	7,920	21,600	0.0002	5	0	143,350	1.33	0
	Bottom Trawl	6,660	2,653	0.0006	1	0	143,350	1.33	0
Standard Deviation	Total	236,489.63	280,083.72	0.00	410.58	0.19	143,350.00	1.33	0.25
	Purse Seine	0.00	0.00		0.00	0.00	143,350.00	1.33	0.00
	MWT	272,042.60	284,284.22	0.00	433.69	0.20	143,350.00	1.33	0.26
	Bottom Trawl	60,321.01	113,603.37	0.01	804.17	0.36	143,350.00	1.33	0.49
CV	Total	1.21	0.98	0.51	0.49	0.00	143,350.00	1.33	0.00
	Purse Seine						143,350.00	1.33	
	MWT	0.96	0.67	0.61	0.41	0.00	143,350.00	1.33	0.00
	Bottom Trawl	0.86	1.19	0.52	0.61	0.00	143,350.00	1.33	0.00

\* Information in this table is based on:

Total: Cap trips n = 323; Observed Cap trips 33; % of Cap trips observed 10%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 189; Observed Cap trips 25; % of Cap trips observed 13%

Bottom Trawl: Cap trips n = 134; Observed Cap trips 8; % of Cap trips Observed 6%

Southern New England/Mid-Atlantic (SNE/MA) RH/S Cap Area : 533, 534, 537, 538, 539, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	<b>Total</b>	197,673	273,664	0.0013	353	0	91,200	0.85	0
	Purse Seine	0	0		0	0	91,200	0.85	0
	MWT	293,440	421,118	0.0012	491	0	91,200	0.85	0
	Bottom Trawl	84,316	101,452	0.0045	455	0	91,200	0.85	0
Median	<b>Total</b>	97,895	152,199	0.0013	191	0	91,200	0.85	0
	Purse Seine	0	0		0	0	91,200	0.85	0
	MWT	211,064	354,088	0.0011	404	0	91,200	0.85	0
	Bottom Trawl	45,000	47,817	0.0029	139	0	91,200	0.85	0
75th Percentile	<b>Total</b>	267,015	451,583	0.0011	477	0	91,200	0.85	0
	Purse Seine	0	0		0	0	91,200	0.85	0
	MWT	438,622	567,669	0.0009	532	0	91,200	0.85	0
	Bottom Trawl	90,312	91,987	0.0016	150	0	91,200	0.85	0
High	<b>Total</b>	1,384,647	1,487,435	0.0029	4,371	2	91,200	0.85	2
	Purse Seine	0	0		0	0	91,200	0.85	0
	MWT	1,384,647	1,487,435	0.0033	4,941	2	91,200	0.85	2
	Bottom Trawl	579,156	602,805	0.0378	22,776	10	91,200	0.85	9
Low	<b>Total</b>	7,000	7,000	0.0004	2	0	91,200	0.85	0
	Purse Seine	0	0		0	0	91,200	0.85	0
	MWT	13,600	15,000	0.0003	5	0	91,200	0.85	0
	Bottom Trawl	7,000	7,000	0.0001	1	0	91,200	0.85	0
Standard Deviation	<b>Total</b>	232,118.30	291,677.65	0.00	95.72	0.04	91,200.00	0.85	0.04
	Purse Seine	0.00	0.00		0.00	0.00	91,200.00	0.85	0.00
	MWT	263,262.41	305,158.00	0.00	99.68	0.05	91,200.00	0.85	0.04
	Bottom Trawl	110,422.50	144,192.57	0.00	607.56	0.28	91,200.00	0.85	0.23
CV	<b>Total</b>	1.17	1.07	0.25	0.27	0.00	91,200.00	0.85	0.00
	Purse Seine						91,200.00	0.85	
	MWT	0.90	0.72	0.28	0.20	0.00	91,200.00	0.85	0.00
	Bottom Trawl	1.31	1.42	0.94	1.33	0.00	91,200.00	0.85	0.00

\* Information in this table is based on:

Total: Cap trips n = 323; Observed Cap trips 32; % of Cap trips observed 10%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 189; Observed Cap trips 27; % of Cap trips observed 14%

Bottom Trawl: Cap trips n = 134; Observed Cap trips 5; % of Cap trips Observed 4%

Data queried on 8/5/2013 from DMIS

Descriptive stats provided by running the DMIS data through JMP software and R bootstrap models

Southern New England/Mid-Atlantic (SNE/MA) RH/S Cap Area : 533, 534, 537, 538, 539, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639

		A	B	C	D	E	F	G	H
Year		Total Atlantic herring landings (lb) on cap trips (>6,600 lbs)	Total landings (lb) all species on cap trips	RH/S Ratio RH/S Catch vs. kept catch on obs cap tirps	Estimated RH/S Catch (lb) (butterfish cap method (BXC))	Estimated RH/S catch (mt) (butterfish cap method) (D/ 2204.62262)	ANNUAL ACL (mt)	ANNUAL ACL PROPORTION OF 2013-2015 ACL (107,800 / F)	Estimated RH/S catch Scaled for 2013-2015 herring ACL (107,800 mt) (ExG)
Mean	Total	155,272	162,910	0.0026	420	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	276,142	280,550	0.0025	706	0	93,905	0.87	0
	Bottom Trawl	77,062	86,067	0.0034	291	0	93,905	0.87	0
Median	Total	76,600	79,463	0.0025	199	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	215,080	215,080	0.0025	528	0	93,905	0.87	0
	Bottom Trawl	47,310	49,965	0.0031	155	0	93,905	0.87	0
75th Percentile	Total	197,273	207,158	0.0020	417	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	419,150	429,115	0.0019	816	0	93,905	0.87	0
	Bottom Trawl	96,950	104,145	0.0023	238	0	93,905	0.87	0
High	Total	1,002,400	1,002,400	0.0071	7,076	3	93,905	0.87	3
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	1,002,400	1,002,400	0.0068	6,839	3	93,905	0.87	3
	Bottom Trawl	612,135	616,317	0.0146	8,972	4	93,905	0.87	4
Low	Total	6,748	7,200	0.0006	4	0	93,905	0.87	0
	Purse Seine	0	0		0	0	93,905	0.87	0
	MWT	20,000	20,000	0.0003	6	0	93,905	0.87	0
	Bottom Trawl	6,748	7,200	0.0003	2	0	93,905	0.87	0
Standard Deviation	Total	183,924.37	187,995.83	0.00	147.25	0.07	93,905.00	0.87	0.06
	Purse Seine	0.00	0.00		0.00	0.00	93,905.00	0.87	0.00
	MWT	226,196.57	227,804.51	0.00	193.52	0.09	93,905.00	0.87	0.08
	Bottom Trawl	85,128.34	99,812.19	0.00	157.21	0.07	93,905.00	0.87	0.06
CV	Total	1.18	1.15	0.30	0.35	0.00	93,905.00	0.87	0.00
	Purse Seine						93,905.00	0.87	
	MWT	0.82	0.81	0.34	0.27	0.00	93,905.00	0.87	0.00
	Bottom Trawl	1.10	1.16	0.47	0.54	0.00	93,905.00	0.87	0.00

\* Information in this table is based on:

Total: Cap trips n = 197; Observed Cap trips 42; % of Cap trips observed 21%

Purse Seine: Cap trips: n = 0; Observed Cap trips 0; % of Cap trips observed 0%

MWT: Cap trips n = 77; Observed Cap trips 30; % of Cap trips observed 39%

Bottom Trawl: Cap trips n = 120; Observed Cap trips 12; % of Cap trips Observed 10%