

Framework Adjustment 4
to the
Atlantic Herring
Fishery Management Plan (FMP)



Prepared by the
New England Fishery Management Council

APPENDIX II

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Summary of Slippage Data
Observed Trips on Atlantic Herring Vessels
2010-2013

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Framework 4 to the Herring FMP
Summary of Slippage Data (NEFOP)
2010-2013

Note: 2010 and 2011 slippage data were provided in the FEIS for Amendment 5 to the Atlantic Herring FMP. While some portions are reproduced here, Section 6.3.2.1 of the Amendment 5 FEIS should be referenced for a more comprehensive summary of 2010 and 2011 information. This document updates the Amendment 5 analysis with information collected by Northeast Fisheries Observer Program (NEFOP) observers on Atlantic herring vessels in 2012 and 2013.

Overview

Information collected by observers about fish not brought on board during herring fishing operations has improved significantly in recent years. In 2010, the NEFOP updated its observer training program to address new requirements for herring vessel access to Closed Area I as well as general training for observing high volume fisheries. NEFOP personnel conducted three high-volume fishery training classes to recertify 70 observers. The program was designed to improve sampling in fisheries that pump fish on board and ensure that only experienced observers who have proven high data quality will be assigned to these fisheries. The program was developed to improve fishery-specific training and focuses on defining gear, understanding bycatch issues, knowing and identifying species of concern, subsampling methodology, common scenarios, safety, and the process of pumping fish on board.

The NEFOP also implemented a discard log in 2010 to obtain more detailed information regarding discards in high-volume fisheries. The discard log is being completed for every haul, and it includes fields to provide information on what kind of discard event may have occurred, whether or not the observer could see the contents of the codend when pumping stopped, why catch may have been discarded, information about the composition of discarded catch, and any challenges the observer may have experienced when observing the haul. Observers are also documenting released catch (including operational discards and slippage events) with photographs whenever possible, and bringing in samples of fish from every trip to confirm species identification. Operational discards have been confirmed by observers to be relatively small amounts of fish that may remain in the net following a successful haul/pump; these fish are usually caught in the net and/or cannot be pumped on board. Information collected by observers about operational discards has improved, and hauls with operational discards are considered to be “observed” hauls; the operational discards are estimated by the observers. Observers document operational discards as *Herring NK* if they are able to see the fish that are not pumped and confirm that the discards are all herring-bodied fish. Otherwise, the discards are documented as *Fish NK*.

Table 1 summarizes available slippage data collected on herring vessels by NEFOP observers during 2010-2013. Overall, slippage events (full or partial) have been documented on less than 10% of observed hauls since 2010. Operational discards are observed on a greater proportion of trips. Observed slippage events have averaged about 8,000 pounds over the time period, while observed operational discards have averaged about 240 pounds.

Table 1 Summary of Observed Slippage and Operational Discards on Limited Access Herring Vessels

Year	# Hauls Observed (% coverage)	# Hauls with Slippage (% of obs hauls)	Reasons for Slippage (# of slipped hauls)	Mean Weight Slipped Hauls (lbs)	# Hauls with Operational Discards (% of obs hauls)	Mean Weight Operational Discards (lbs)
2010*	929 (30-40%)	30 (3.2%)	<ul style="list-style-type: none"> • Not Specified (15) • Fell Out of Gear (7) • No Market Value (2) • Vessel Capacity Filled (6) 	8,071	297 (32%)	367
2011*	1,140 (~30%)	78 (6.8%)	<ul style="list-style-type: none"> • Not Specified (41) • Fell Out of Gear (5) • No Market Value (8) • Vessel Capacity Filled (19) 	7,902	198 (17.4%)	155
2012 and 2013**	1,126 (20-30%)	95 (8.4%)	<ul style="list-style-type: none"> • Not Specified/Other • Spiny Dogfish Clogging Pump (8) • No Market Value (7) • Vessel Capacity Filled (24) 	8,230	343 (30.5%)	198

**In 2010-2011, a few (5-7) additional hauls were observed to release fish due to gear damage.*

***In 2012-2013, there were two events in which gear damage prevented the catch from being brought on board. The estimated weight of catch not brought on board for these two events was 400,000 pounds.*

2010 and 2011 Observer Coverage and Slippage Information

Table 2 summarizes NEFOP observer coverage rates on trips landing greater than 2,000 pounds of Atlantic herring during the 2010 and 2011 fishing years. In 2010, observer coverage for the midwater trawl fleet was close to 30% fishery-wide and was even higher on Georges Bank (85% coverage by weight of fish landed). Overall, observers provided data for 929 hauls on limited access herring vessels during the 2010 fishing year. Forty six percent (46%) of total herring landings were observed during 2010. During the 2011 fishing year, the NEFOP covered trips for about 55% of all midwater trawl Atlantic herring landings, 45% of pair trawl landings, 25% of purse seine landings, and 13% of bottom trawl herring landings.

Table 2 NEFOP Observer Coverage Rates for Trips Landing Greater than 2,000 pounds of Atlantic Herring, 2010-2011

Year	Gear Type	Total Trips	Total Days	Total Herring Landed (lbs.)	Obs Trips	Obs Days	Obs Herring Kept (lbs.)	% trips obs	% days obs	% herring obs
2010	OTF	185	343	8,452,546	9	22	298,691	5%	6%	4%
2010	OTM	58	230	19,851,018	32	122	10,190,452	55%	53%	51%
2010	PTM	290	1129	98,165,321	128	545	47,528,352	44%	48%	48%
2010	PUR	222	506	18,799,340	24	58	1,850,818	11%	11%	10%
2011	OTF	175	368	9,449,163	24	59	1,208,293	14%	16%	13%
2011	OTM	61	165	17,647,500	27	91	9,758,411	44%	55%	55%
2011	PTM	295	1071	115,321,409	123	452	51,562,629	42%	42%	45%
2011	PUR	271	603	37,908,770	79	172	9,506,794	29%	29%	25%

OTF – small mesh bottom trawl; OTM – single midwater trawl; PTM – paired midwater trawl; PUR – purse seine

*Herring is Atl Herring or Unk Herring
Day defined as (date land - date sail) + 1
Landings data from Vessel Trip Reports*

Table 3, Figure 1, and Figure 2 provide data for the 332 observer records (287 unique hauls) in 2010 that included catch ***not brought on board***. The total weight of fish not brought on board estimated by observers in 2010 was about 460,000 pounds. Total herring landings for this fleet in 2010 were about 58 million pounds. About 290 of the observed hauls in 2010 were documented to have operational discards.

In 2010, 35 records (approximately 30 unique hauls) of 929 hauls (3.2%) that were observed on limited access herring vessels were documented to have experienced full or partial slippage events. The total estimated catch not brought on board compared to the total observed catch on these vessels in 2010 was about 0.7% (this does not include fish that were brought on board and then discarded).

Table 3 Summary of 2010 Observed Events on Limited Access Herring Vessels (by Number and Estimated Weight of Fish in Lbs.) with Fish Not Brought on Board

	species	"reason not specified"	"gear damage"	"fell out of gear"	"no market value"	"vessel capacity filled"	"not enough fish to pump"
Number of hauls with occurrence	butterfish	1					1
	haddock						6
	herring nk			3		1	105
	atl herring	1				1	18
	mackerel	1				1	4
	redfish						7
	spiny dogfish						1
	striped bass			1			1
	whiting	1					4
	fish nk	10	5	3	2	3	138
	hake nk						6
	lobster						1
	<i>Loligo</i>	1					1
	<i>Illex</i>						2
	eel nk						2
Estimated weight (lbs)	butterfish	5					1
	haddock						72
	herring nk			410		3,000	20,622
	atl herring	100				175	6,425
	mackerel	50				175	155
	redfish						38
	spiny dogfish						25
	striped bass			12			10
	whiting	10					372
	fish nk	169,450	108,000	4,700	44,000	20,050	72,766
	hake nk						215
	lobster						10
	<i>Loligo</i>	3					10
	<i>Illex</i>						13
	eel nk						8,150

Figure 1 Observed Events on Limited Access Herring Vessels (by Number of Hauls) with Fish Not Brought on Board in 2010

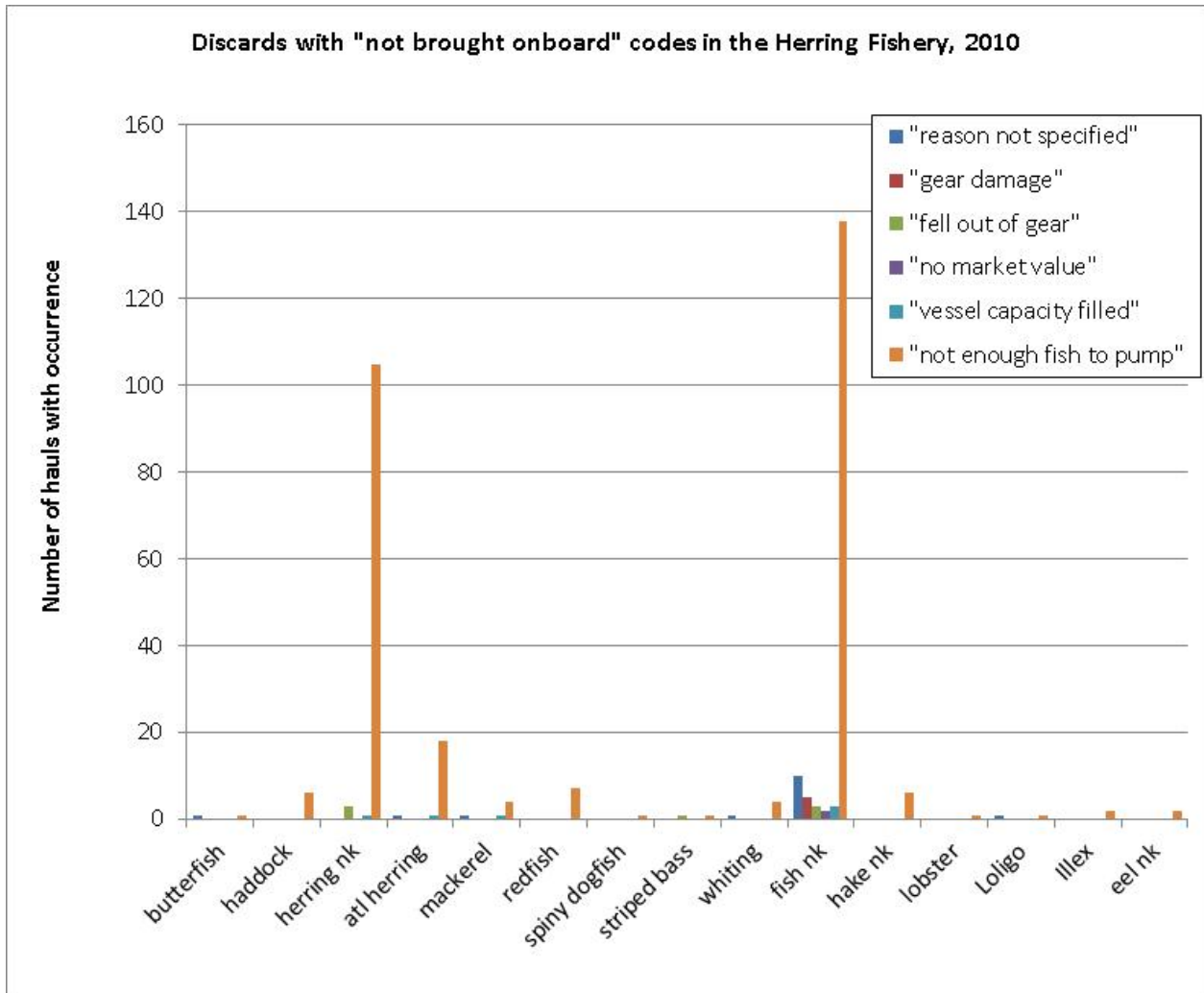


Figure 2 Observed Events on Limited Access Herring Vessels (by Estimated Weight of Fish in Pounds) with Fish Not Brought on Board in 2010

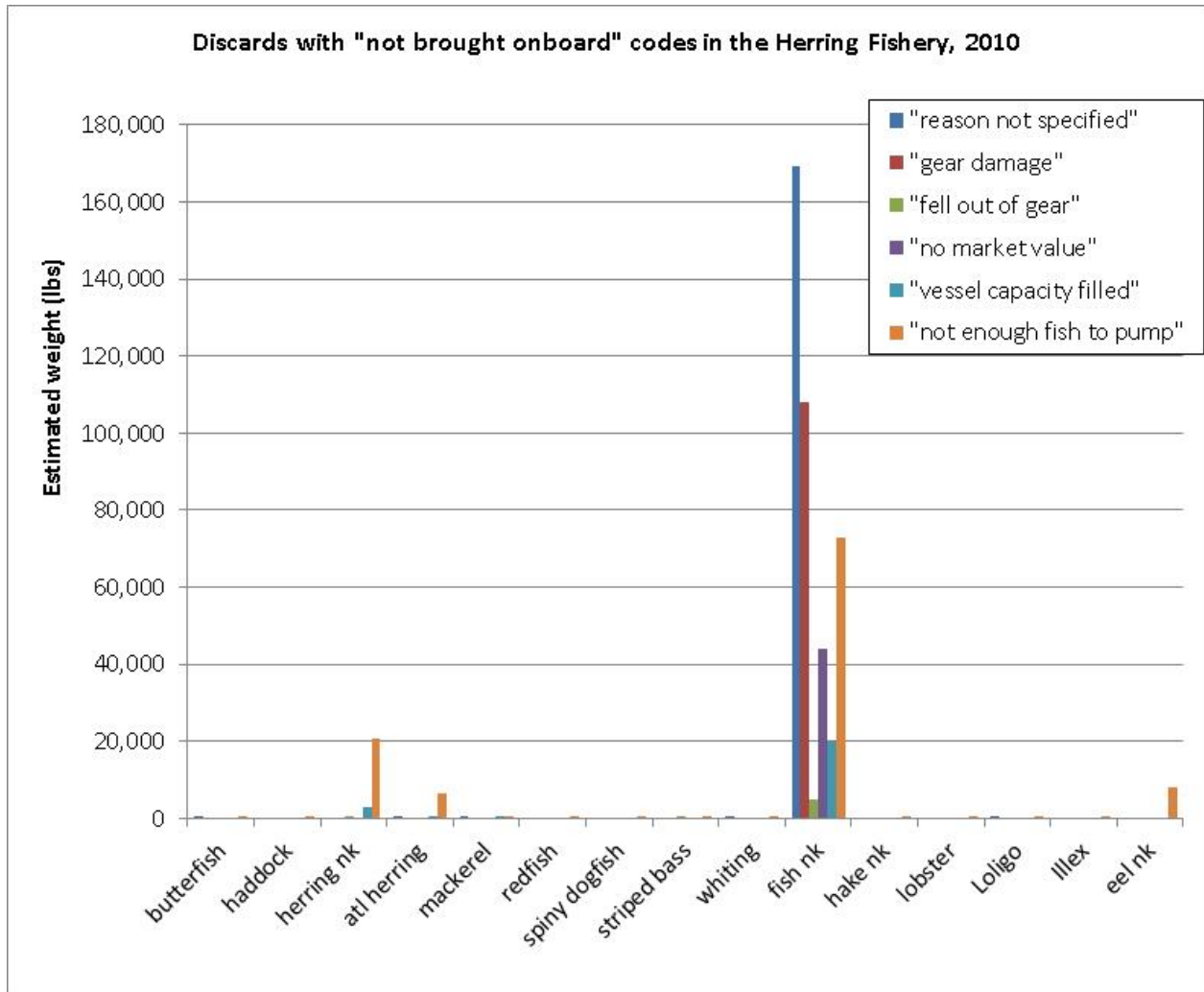


Table 4, Figure 3, and Figure 4 (see the following pages) summarize data for the observer records (1140 unique hauls) in 2011 on limited access declared herring trips that included *catch not brought on board*. About 198 of these hauls (17.4%) were documented with *operational discards*. The total weight of fish not brought on board estimated by observers in 2011 was 1,041,211 pounds; this includes operational discards, which, although more frequent, represent small amounts of fish.

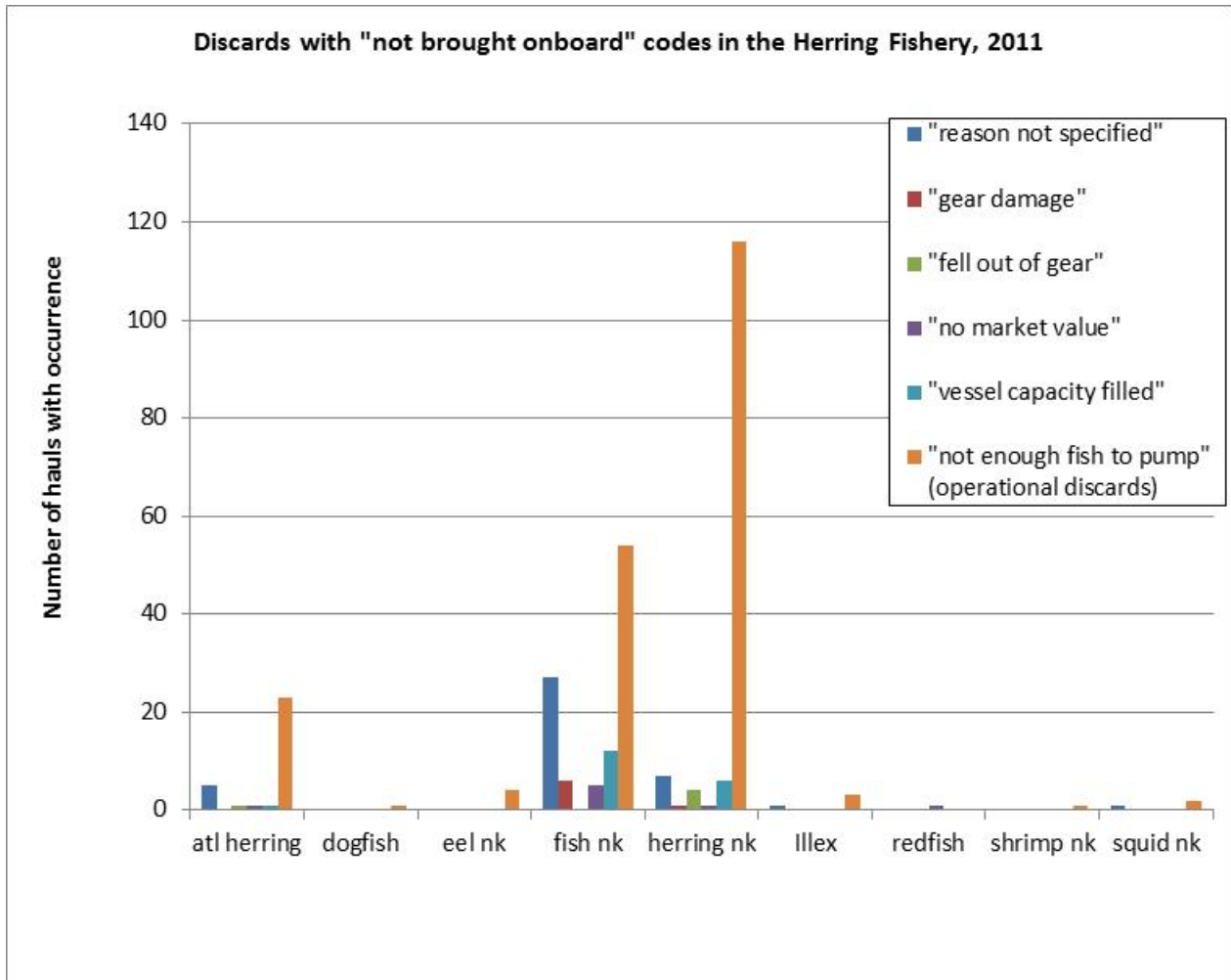
in 2011, 78 out of 1,140 hauls (6.8%) observed on limited access declared herring trips experienced full or partial slippage events (catch not brought on board, not including operational discards). The ratio of total estimated catch not brought on board compared to the total observed catch on these vessels in 2011 was about 1.4% (this does not include fish that were brought on board and then discarded). By gear type, this ratio translates to 0.16% for bottom otter trawl (all areas), 5.31% for purse seine (Area 1A), 2.19% single midwater trawl (all areas), 0.11% pair trawl (Area 1A), 0.53% pair trawl (Area 3), and 0.48% pair trawl (Area 2).

Table 4 Summary of 2011 Observed Events on Limited Access Herring Vessels – Declared Herring Trips (by Number and Estimated Weight of Fish in lbs.) with “Fish Not Brought on Board” Codes

	species	"reason not specified"	"gear damage"	"fell out of gear"	"no market value"	"vessel capacity filled"	"not enough fish to pump" (operational discards)
Number of hauls with occurrence	atl herring	5	0	1	1	1	23
	dogfish	0	0	0	0	0	1
	eel nk	0	0	0	0	0	4
	fish nk	27	6	0	5	12	54
	herring nk	7	1	4	1	6	116
	lllex	1	0	0	0	0	3
	redfish	0	0	0	1	0	0
	shrimp nk	0	0	0	0	0	1
	squid nk	1	0	0	0	0	2
Estimated weight (lbs)	atl herring	2,754	0	10	10,000	500	1,947
	dogfish	0	0	0	0	0	80
	eel nk	0	0	0	0	0	860
	fish nk	339,170	394,000	0	68,400	108,500	11,398
	herring nk	43,700	300	170	10,000	32,700	16,248
	lllex	3	0	0	0	0	30
	redfish	0	0	0	400	0	0
	shrimp nk	0	0	0	0	0	1
	squid nk	10	0	0	0	0	30

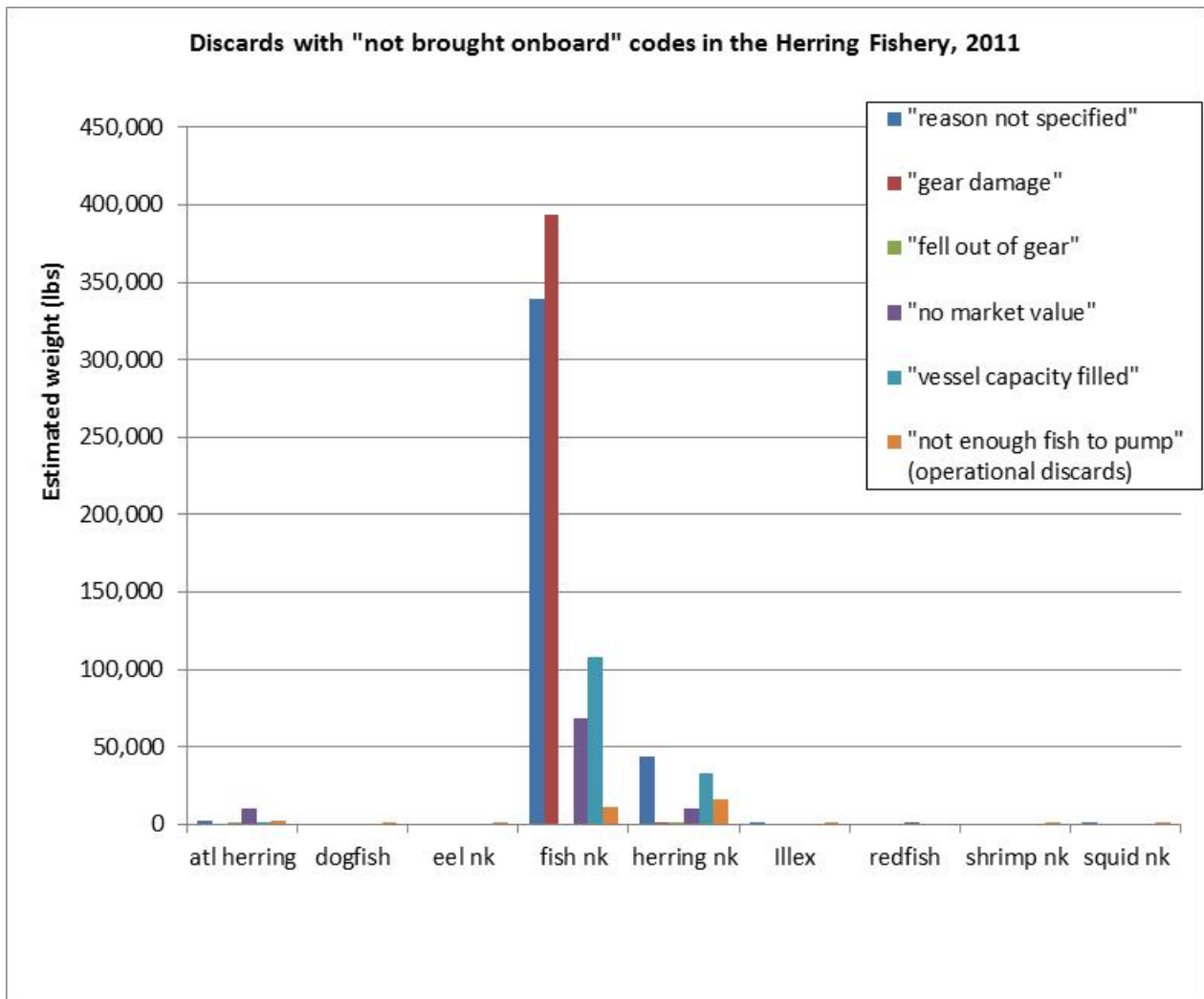
Note: Information in all columns except for the far right (“not enough fish to pump” (operational discards)) represents partial/full slippage events.

Figure 3 Observed Events on Limited Access Herring Vessels – Declared Herring Trips in 2011 with “Fish Not Brought on Board” Codes (by Species and Number of Hauls)



Note: All columns except for “not enough fish to pump’ (operational discards)” represent partial/full slippage events.

Figure 4 Observed Events on Limited Access Herring Vessels – Declared Herring Trips in 2011 with “Fish Not Brought on Board” Codes (By Species and Estimated Weight of Fish in Pounds)



Note: All columns except for “not enough fish to pump” (operational discards)” represent partial/full slippage events.

Table 5 and Table 6 provide 2011 observer data by gear type and management area, including observed hauls with catch not brought on board, separated into slippage events (shaded rows) and operational discards. Based on the ratio of slipped catch to total catch, purse seine vessels fishing in Area 1A had the highest observed slippage rates in the fishery during the 2011 fishing year. Observers documented full or partial slippage events on almost 30% of observed purse seine hauls in Area 1A during 2011. Single midwater trawl vessels were not observed to have many slippage events in 2011; only four slippage events were observed on single midwater trawl vessels across all management areas. Pair trawl vessels were observed to have 8 slippage events in Area 2 and 19 in Area 3 during 2011, with about 30% observer coverage across the fishery (although closer to 80% in Area 3). Single midwater trawl vessels, however, accounted for the largest slippage events, averaging about 50,000 pounds per observed event. Purse seine vessels averaged 15,190 pounds per observed slippage event, and pair trawl vessels in Area 3 averaged about 9,000 pounds per event.

Table 5 Summary of NEFOP 2011 Released Catch Data from Limited Access Vessels on Declared Herring Trips (Number of Hauls by Gear and Area)

	Bottom Trawl (All Areas)	Purse Seine (Area 1A)	Single MWT (All Areas)	Paired MWT (Area 1A)	Paired MWT (Area 3)	Paired MWT (Area 2)
# of Hauls (# w/catch)	366 (349)	133 (127)	51 (51)	65 (34)	313 (172)	122 (64)
Hauls w/ Kept	346	104	51	31	158	57
Hauls w/ Discards, after brought onboard	319	107	34	30	141	62
Hauls w/ Operational Discards	0	71	0	9	75	43
Hauls w/ "Not Brought Onboard" Slippage	6	37	4	4	19	8
	Bottom Trawl (All Areas)	Purse Seine (Area 1A)	Single MWT (All Areas)	Paired MWT (Area 1A)	Paired MWT (Area 3)	Paired MWT (Area 2)
# of Hauls (# w/ catch)	366 (349)	133 (127)	51 (51)	65 (34)	313 (172)	122 (64)
Hauls w/ Kept	95%	78%	100%	48%	50%	100
Hauls w/ Discards, after brought onboard	87%	80%	67%	46%	45%	109
Hauls w/ Operational Discards	0%	53%	0%	14%	24%	75%
Hauls w/ "Not Brought Onboard" Slippage	2%	28%	8%	6%	6%	14%

Table 6 Summary of NEFOP 2011 Released Catch Data from Limited Access Vessels on Declared Herring Trips (Number of Pounds by Gear and Area)

	Bottom Trawl (All Areas)	Purse Seine (Area 1A)	Single MWT (All Areas)	Paired MWT (Area 1A)	Paired MWT (Area 3)	Paired MWT (Area 2)
Pounds Kept	2,413,052	9,443,700	8,809,458	7,608,577	32,329,166	12,717,103
Pounds Discarded, On-Board	136,668	575,877	212,143	23,093	258,726	78,354
Pounds Operational Discards	0	8,549	0	1,460	15,973	4,612
Pounds "Not Brought On-Board" Slippage	4,140	562,037	202,000	8,200	172,740	61,500
	Bottom Trawl (All Areas)	Purse Seine (Area 1A)	Single MWT (All Areas)	Paired MWT (Area 1A)	Paired MWT (Area 3)	Paired MWT (Area 2)
Total Pounds Observed	2.55M	10.59M	9.22M	7.64M	32.78M	12.86M
% Discarded, On-Board	5.35%	5.44%	2.30%	0.30%	0.79%	0.61%
% Operational Discards	0	0.08%	0	0.02%	0.05%	0.04%
% "Not Brought On-Board" Slippage	0.16%	5.31%	2.19%	0.11%	0.53%	0.48%

2012 and 2013 Observer Coverage and Slippage Information

Observer coverage on midwater trawl vessels (single and paired) has been relatively high in recent years because midwater trawl vessels have been required to have 100% observer coverage when fishing in Groundfish Closed Area I (CAI). This requirement includes a pre-trip notification and has significantly increased observer coverage in the Area 3 herring fishery (Georges Bank), which is prosecuted only by midwater trawl vessels. Table 7 summarizes NEFOP observer coverage rates by gear type and herring management area during the 2012 fishing year for trips taken by the primary gears involved in the Atlantic herring fishery. Coverage rates in this table are calculated based on NEFOP observed herring pounds caught/VTR-reported herring pounds landed.

Table 7 2012 NEFOP Coverage Rates by Gear Type and Herring Management Area (Pounds Observed/Pounds Landed)

Gear Type	Atlantic Herring Management Area			
	1A	1B	2	3
Midwater Trawl (Single)	6.4%	0%	2.6%	71.2%
Pair Trawl	17.6%	36.5%	23.8%	75%
Purse Seine	16.3%	N/A	N/A	0%
Small Mesh Bottom Trawl	4.9%	0%	24.30%	0%

Note: 2012 NEFOP observer data are final; VTR data were preliminary when these estimates were generated.

Table 8 summarizes 2013 observer coverage rates on midwater trawl trips (single and paired) by month. As of November 2013, the Northeast Fisheries Observer Program (NEFOP) had achieved 526 midwater trawl sea days during the 2013 fishing year (360 sea days were tasked to this fishery for the entire 2013 year). By the end of the fishing year, NEFOP observers sampled a total of 127 midwater trawl trips (see Table 8). Observer coverage on midwater trawl vessels was relatively high during September and October 2013, but not as high as 2012. The average observer coverage rate for midwater trawl vessels (% of trips) in 2013 was 26%.

The percent of midwater trawl trips observed in 2013 is lower than in 2012 primarily because there were significantly less pre-trip notifications for CAI, which requires 100% coverage. In 2012, there were 158 trips that notified for CAI and were covered, thereby increasing the overall coverage on midwater trawl vessels. In 2013, there were far fewer trip notifications to CAI, and the Area 3 (Georges Bank) herring fishery closed in October. NEFOP personnel noted that call-in compliance was 100% over the 2013 summer season.

Table 8 2013 NEFOP Observer Coverage on Midwater Trawl Trips

	# Declared Trips	# Observed Trips	% Trips Covered
January	78	9	12
February	59	7	12
March	40	13	33
April	16	2	13
May	19	11	58
June	34	16	47
July	44	6	14
August	47	9	19
September	41	23	56
October	33	19	58
November	5	2	40
December	75	10	13

The tables and figures on the following pages summarize data collected by NEFOP observers regarding catch not brought on board on observed trips by herring vessels during the 2012 and 2013 fishing years. The data are summarized and presented by gear type, management area, statistical area, and catch disposition code. Data are from trips during 2012 and 2013 by midwater trawl (single and paired), purse seine (herring), and small mesh bottom trawl (herring identified as a target species) vessels with limited access herring permits.

When reviewing the data on the following pages, it is important to understand that an observed “event” is not synonymous with a “haul,” as multiple events may occur within a single haul. For example, a haul may have three different reasons for not bringing catch onboard the vessel: a species fell from the net into the water as the net is being reeled in; clearing a blockage during pumping caused additional fish to be released; and after pumping was completed, a small amount of fish remained in the net (operational discards).

The following bullets summarize the data presented in the following tables and figures.

Purse Seine Vessels

- Overall, 29 slippage events and 112 operational discard events were observed on 92 purse seine trips during 2012 and 2013.
- No observed slippage events were cited due to safety, mechanical failure, or spiny dogfish clogs during 2012 and 2013.
- Slippage on purse seine vessels was observed to be due primarily to vessel capacity filled (14) and not enough fish to pump (9). Slippage events due to no market value were lesser in number (4) but relatively high in terms of estimated amount of catch released.

Midwater Trawl Vessels (Single and Paired)

- Overall, 64 slippage events and 231 operational discard events were observed on 348 midwater trawl trips during 2012 and 2013. Twenty seven (27) of these events were observed to have occurred on tows that either started or ended in Closed Area I.
- One very large released catch event was observed in Area 3 and recorded to be due to gear damage (380,000 pounds); in this instance, the net tore and released a large catch before it could be brought on board. This event actually occurred in Closed Area I (see Table 12). The amount of fish estimated to be released during this event (380,000 pounds) totaled almost as much as the estimated slipped catch on all 64 observed slippage events on midwater trawl vessels over the two year time period (473,982 pounds).
- Of the 473,982 pounds estimated by observers to be slipped by midwater trawl vessels during 2012 and 2013, 29% of these fish was slipped on events that were due to spiny dogfish clogging the pump. Of the 112,852 pounds estimated by observers to be released in Closed Area I during 2012 and 2013, 48% was slipped on events that were due to spiny dogfish clogging the pump.
- Slippage events on midwater trawl vessels were documented by observers to be primarily due to not enough fish to pump (26), not specified (17), fell out of gear (15), and vessel capacity filled (10). Slippage events due to no market value were lesser in number (3) but relatively high in terms of estimated amount of catch released.

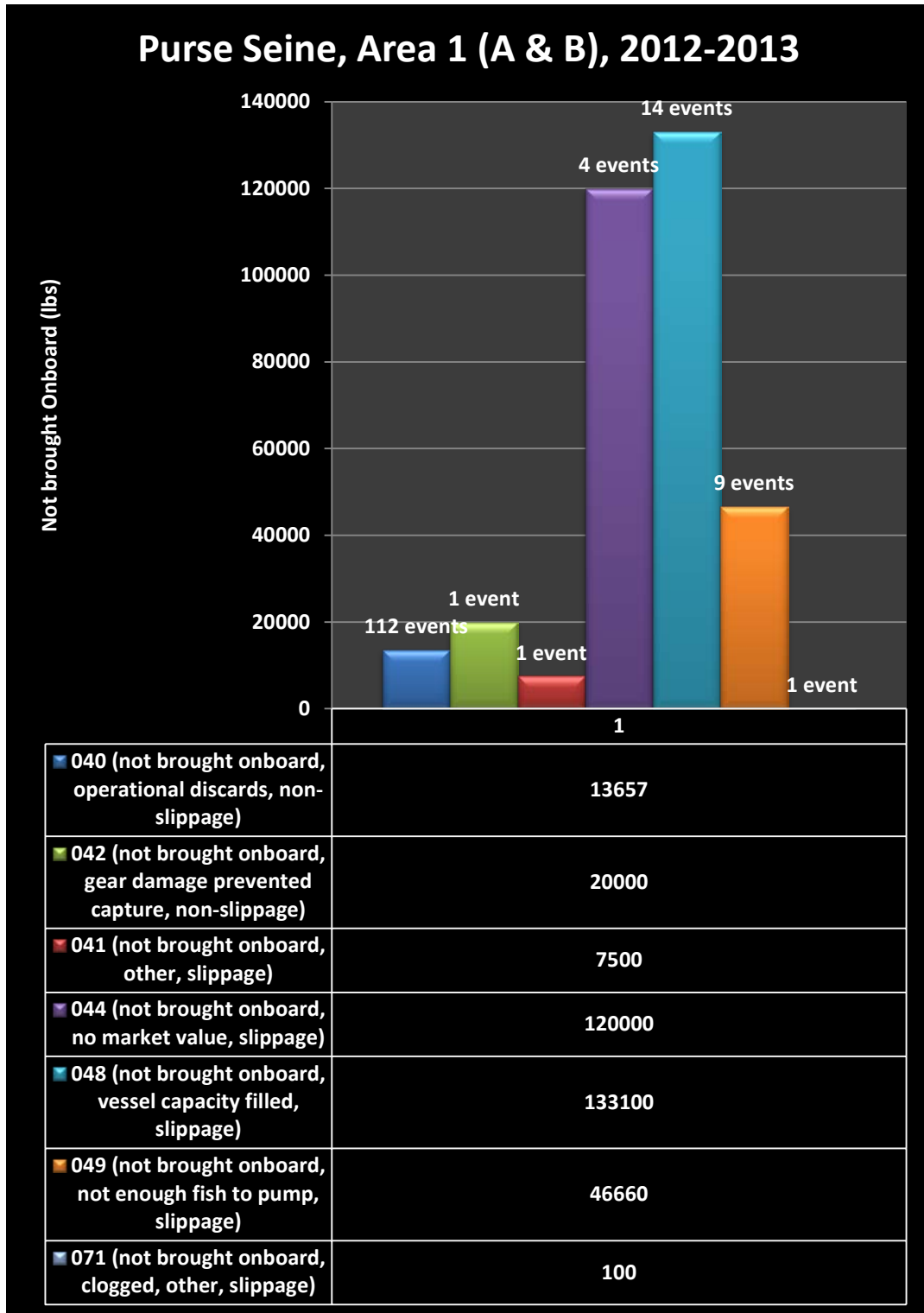
Small Mesh Bottom Trawl Vessels

- Two (2) slippage events were observed on 53 small mesh bottom trawl trips during 2012 and 2013; no operational discards were observed on these trips.
- No observed slippage events were cited due to safety, mechanical failure, or spiny dogfish clogs during 2012 and 2013.

**Table 9 Summary of NEFOP Observer Data for Catch Not Brought on Board, 2012-2013
Observed Purse Seine Trips**

PURSE SEINE (HERRING)			
HERRING MANAGEMENT AREA	NOT BROUGHT ONBOARD VESSEL		
	SLIPPAGE EVENTS		NON-SLIPPAGE EVENTS
			Other
Area 1 (both A & B)	29		113 112: Operational Discards 1: Gear damage
Total Trips	Total Observed Kept Atl. Herring	Total Observed Total Slipped Catch	Total Observed Non-slipped Catch
92	13,729,168 lbs	307,360 lbs	33,657lbs
Area 2	0		0
Total Trips	Total Observed Kept Atl. Herring	Total Observed Slipped Catch	Total Observed Non-slipped Catch
0	0	0	0
Area 3	0		0
Total Trips	Total Observed Kept Atl. Herring	Total Observed Slipped Catch	Total Observed Non-slipped Catch
0	0	0	0
	TOTAL (all areas)	TOTAL (all areas)	TOTAL (all areas)
	13,729,168 lbs	307,360 lbs	33,657 lbs
Total Slippage (or total non-slippage)/Total Kept	N/A	2.3%	0.3%
TOTAL SLIPPED CATCH (all areas)		307,360 lbs	
	% dogfish	0%	
	% safety	0%	
	% mechanical failure	0%	

Figure 5 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Purse Seine Trips



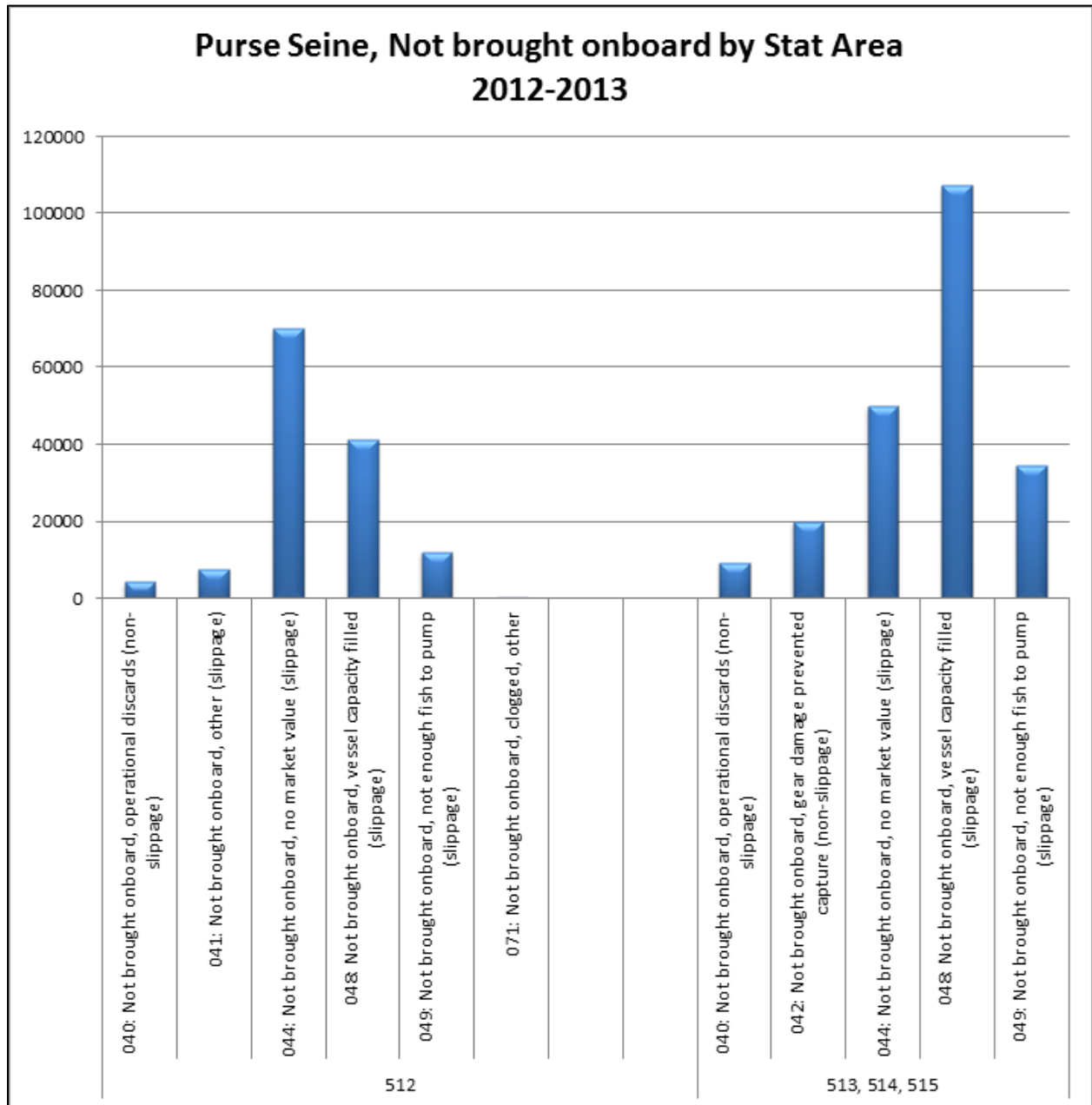
Note: In Framework 4, the Council is clarifying regulations pertaining to catch not brought on board under disposition codes 040 and 042.

Table 10 Summary of NEFOP Observer Data for Catch Not Brought on Board by Disposition Code and Statistical Area, 2012-2013 Observed Purse Seine Trips

STATISTICAL AREA	FISH DISPOSITION CODE	WEIGHT (lbs)
512	040: Not brought onboard, operational discards (non-slippage)	4335
	041: Not brought onboard, other (slippage)	7,600
	044: Not brought onboard, no market value (slippage)	70,050
	048: Not brought onboard, vessel capacity filled (slippage)	41,000
	049: Not brought onboard, not enough fish to pump (slippage)	12,050
	071: Not brought onboard, clogged, other	100
	100 & 110: Kept (herring)	6,517,150
	Total Non-Slippage	4,335
	Total Slippage	123,200
	Slippage/Kept Herring (%)	1.9%
	Total Not Brought Onboard/Kept Herring (%)	2%
513, 514, 515	040: Not brought onboard, operational discards (non-slippage)	9,322
	042: Not brought onboard, gear damage prevented capture (non-slippage)	20,000
	044: Not brought onboard, no market value (slippage)	50,000
	048: Not brought onboard, vessel capacity filled (slippage)	107,100
	049: Not brought onboard, not enough fish to pump (slippage)	34,610
	100 & 110: Kept (herring)	13,527,028
	Total Non-Slippage	29,332
	Total Slippage	191,710
	Slippage/Kept Herring (%)	1.4%
	Total Not Brought Onboard/Kept Herring (%)	1.6%

Note: In Framework 4, the Council is clarifying regulations pertaining to catch not brought on board under disposition codes 040 and 042.

Figure 6 Summary of NEFOP Observer Data for Catch Not Brought on Board by Disposition Code and Statistical Area, 2012-2013 Observed Purse Seine Trips



Note: In Framework 4, the Council is clarifying regulations pertaining to catch not brought on board under disposition codes 040 and 042.

**Table 11 Summary of NEFOP Observer Data for Catch Not Brought on Board, 2012-2013
Observed Midwater Trawl Trips (Single and Paired) in All Areas**

MIDWATER TRAWL, PAIRED & SINGLE			
NOT BROUGHT ONBOARD VESSEL			
HERRING MANAGEMENT AREA	SLIPPAGE EVENTS		NON-SLIPPAGE EVENTS
			Other
Area 1A	0		1 Operational Discards
Total Trips 8	Total Observed Kept Atl. Herring (lbs) 1,599,785	Total Observed Slipped Catch (lbs) 0	Total Observed Non- slipped Catch (lbs) 80
Area 1B	0		0
Total Trips 0			
Area 2	6		29 28: Operational discards 1: fell from gear
Total Trips 27	Total Observed Kept Atl. Herring (lbs) 8,205,974	Total Observed Slipped Catch (lbs) 112,500	Total Observed Non- slipped Catch (lbs) 2,116
Area 3 (Including CA1)	64		246 231: Operational discards 14: Fell from gear 1: Gear damage
Total Trips 313	Total Observed Kept Atl. Herring (lbs) 89,704,941	Total Observed Slipped Catch (lbs) 361,482	Total Observed Non- slipped Catch (lbs) 452,997
Total Trips 0	TOTAL (all areas) 99,510,700 lbs	TOTAL (all areas) 473,982 lbs	TOTAL (all areas) 455,193 lbs
Total Slippage (or non- slippage)/Total Kept	N/A	0.5%	0.5%
TOTAL SLIPPED CATCH (all areas)		473,982 lbs	
% dogfish		29%	
% safety		0%	
% mechanical failure		0%	

Figure 7 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Midwater Trawl Trips in All Areas

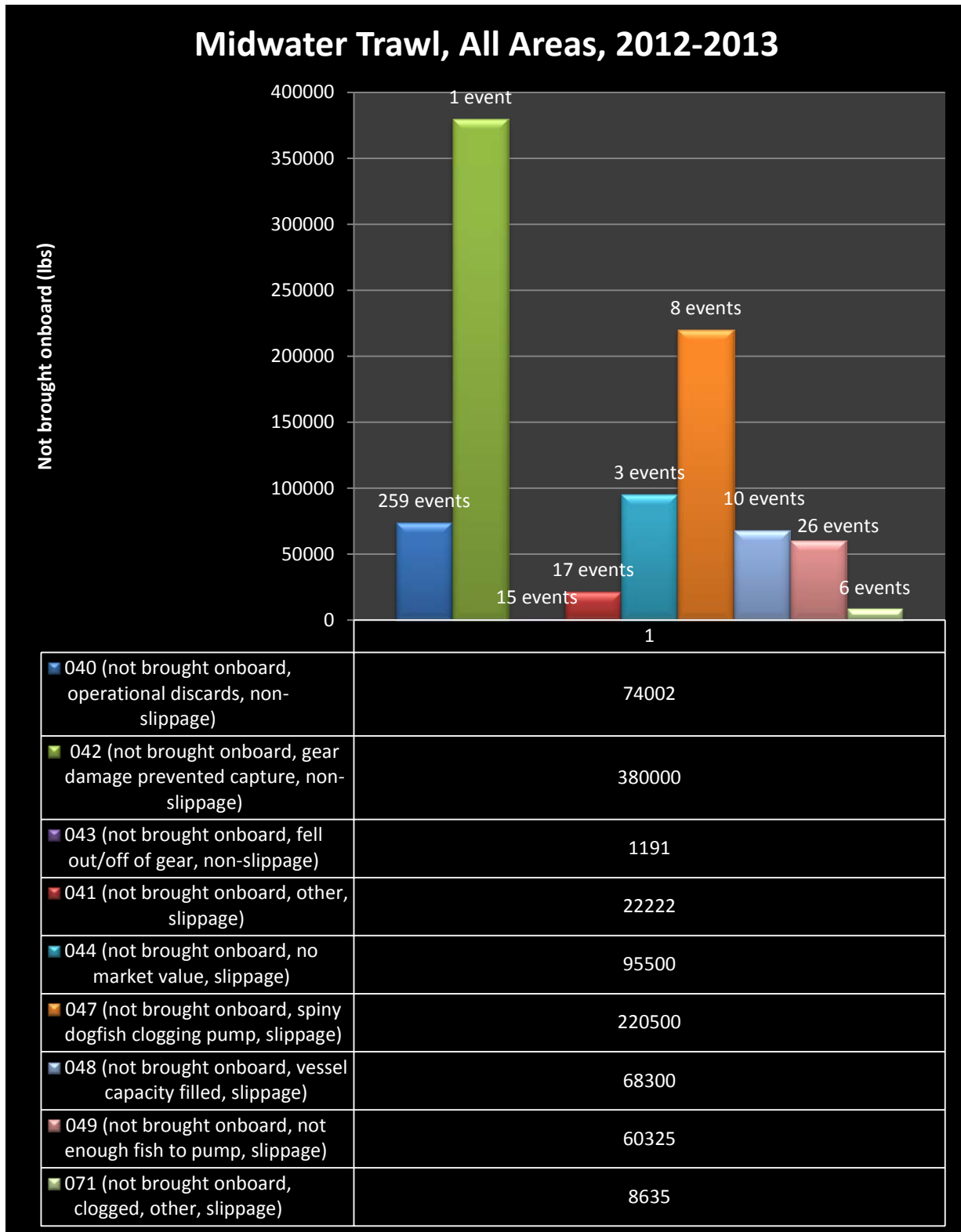


Figure 8 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Midwater Trawl Trips in Area 2

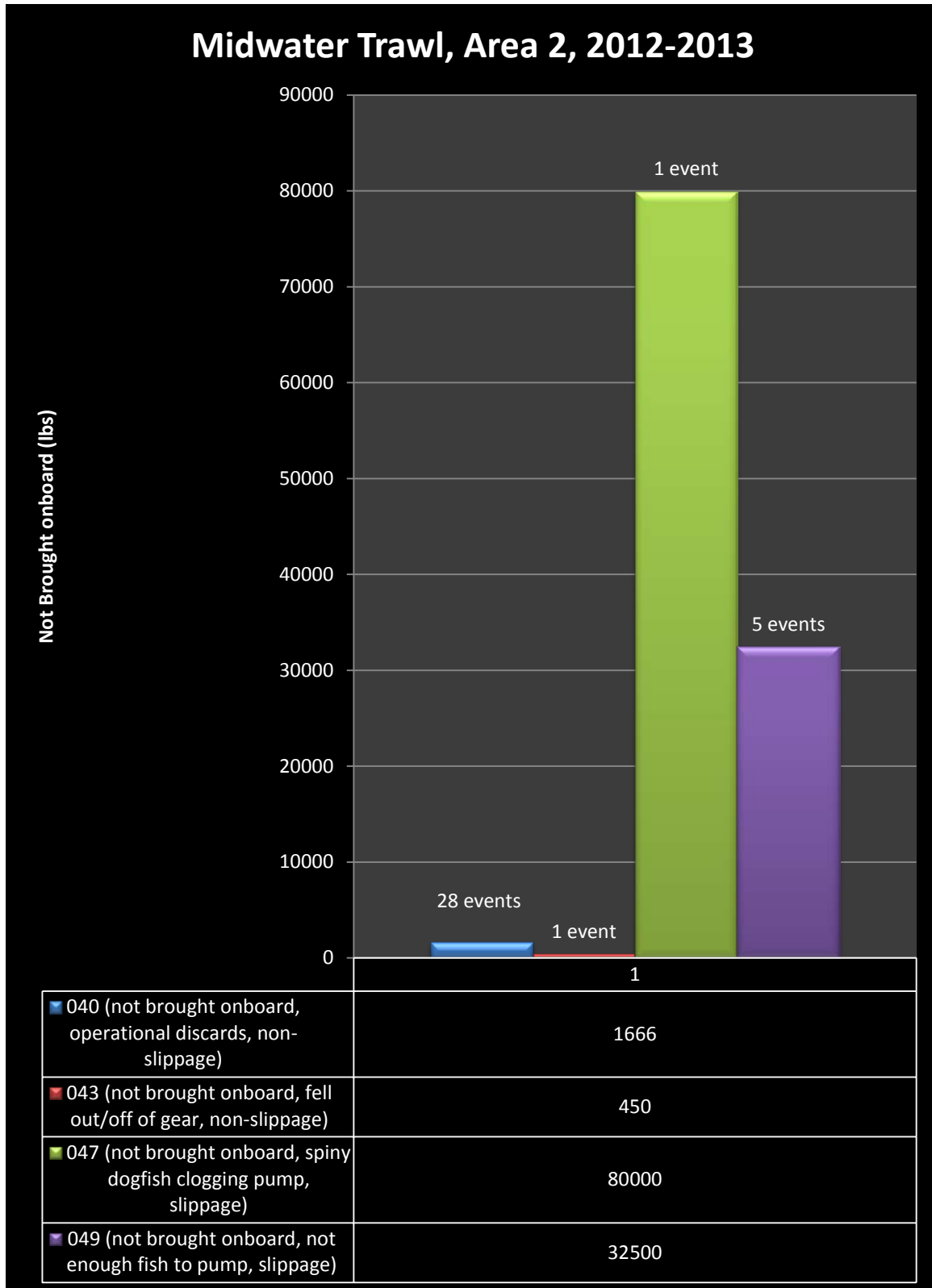
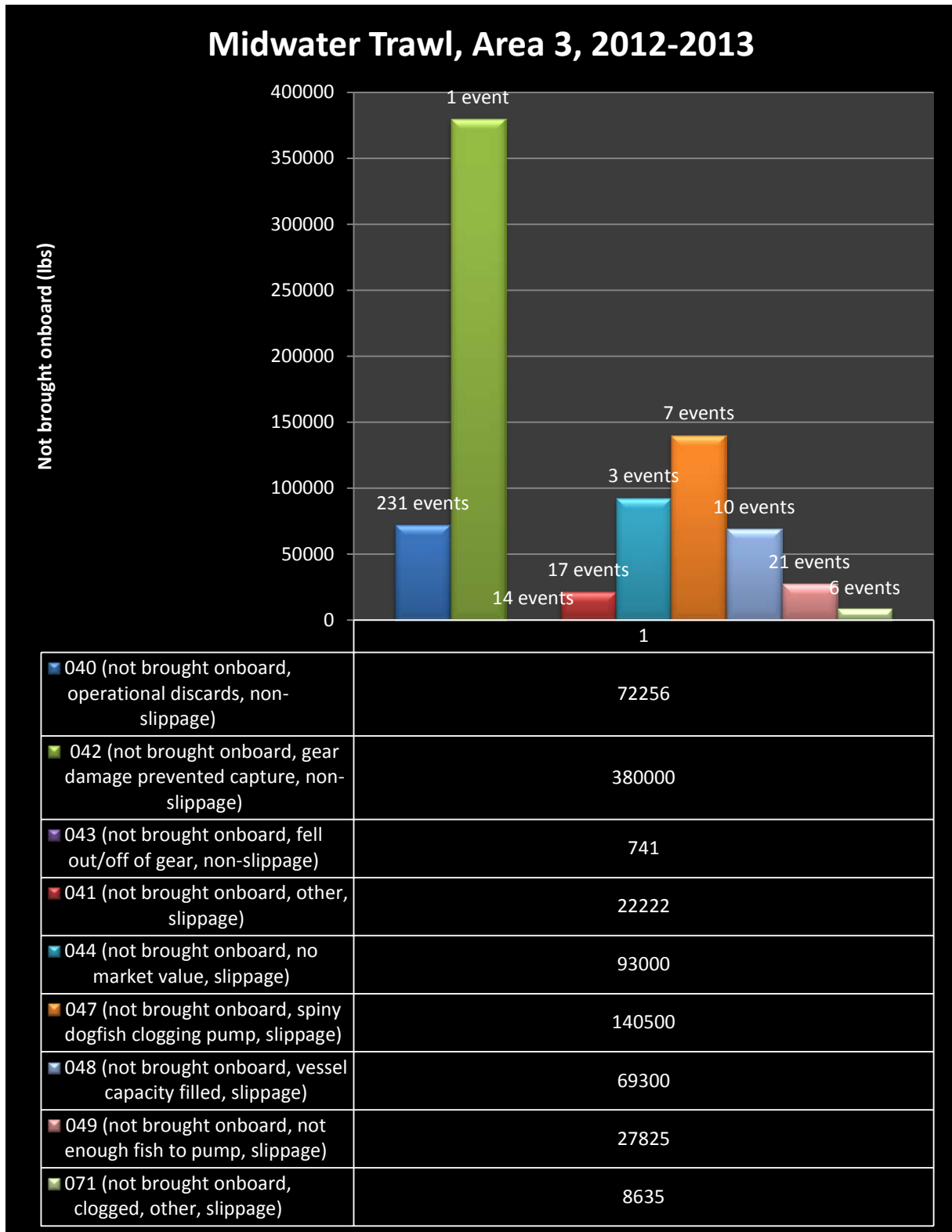


Figure 9 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Midwater Trawl Trips in Area 3



**Table 12 Summary of NEFOP Observer Data for Catch Not Brought on Board, 2012-2013
Observed Midwater Trawl Trips (Single and Paired) *in Closed Area I***

CLOSED AREA 1: Midwater trawl, paired & single			
		NOT BROUGHT ONBOARD	
AREA 3: CLOSED AREA 1	SLIPPAGE EVENTS		NON-SLIPPAGE EVENTS
			Other
Closed Area 1	27		94: Operational Discards 1: Gear damage 6: Fell from gear
Total Trips 91	Total Kept Atl. Herring 34,939,236 lbs	Total Slipped Catch 112,852 lbs	Total Non-slipped Catch 412,562 lbs
Total Slippage (or non-slippage)/Total Kept	N/A	0.3%	1%
TOTAL SLIPPED CATCH		112,852 lbs	
% dogfish	48%		
% safety	0%		
% mechanical failure	0%		

Figure 10 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Midwater Trawl Trips in Closed Area I

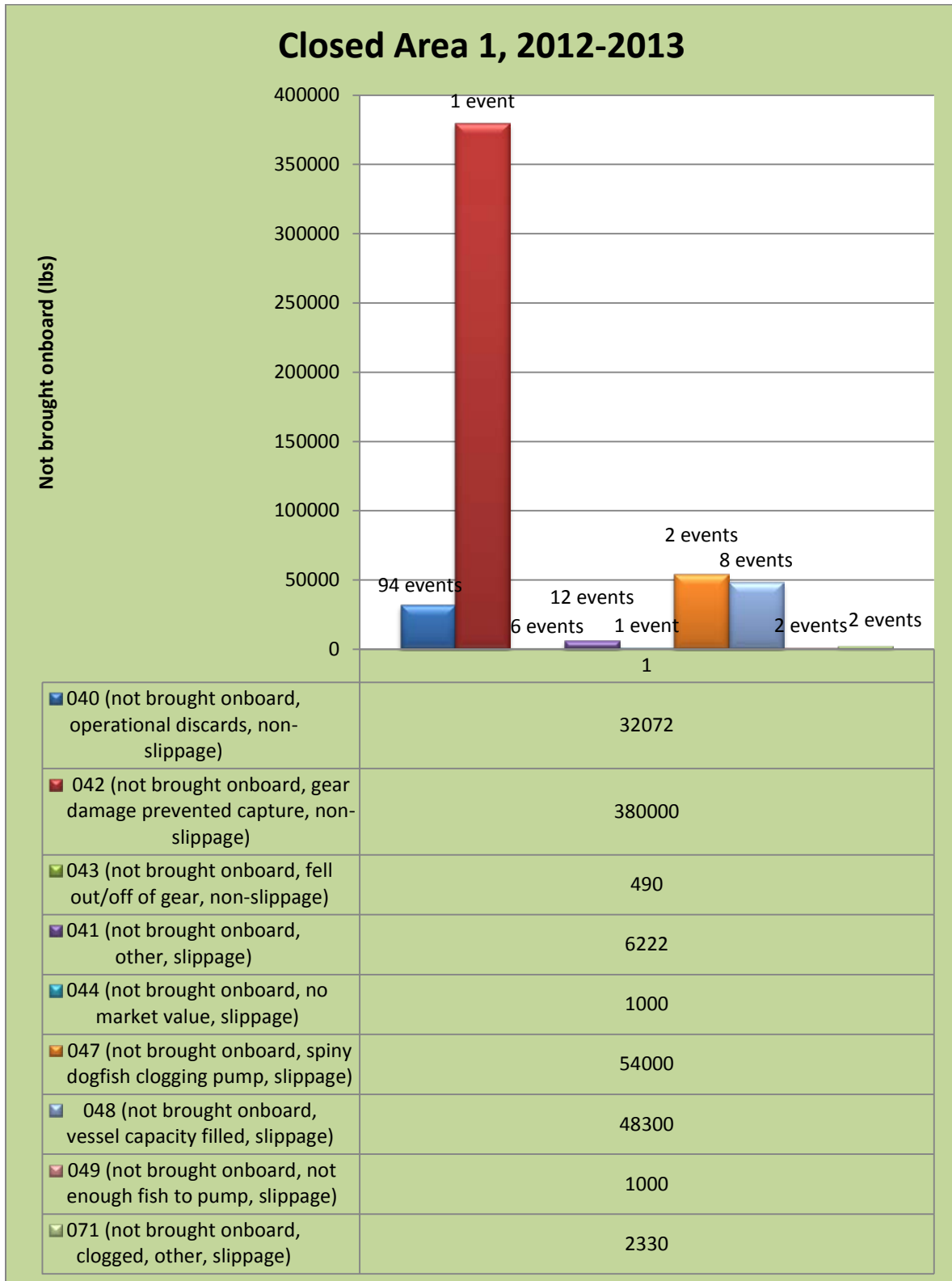


Table 13 Summary of NEFOP Observer Data for Catch Not Brought on Board by Disposition Code and Statistical Area, 2012-2013 Observed Midwater Trawl Trips (Single and Paired)

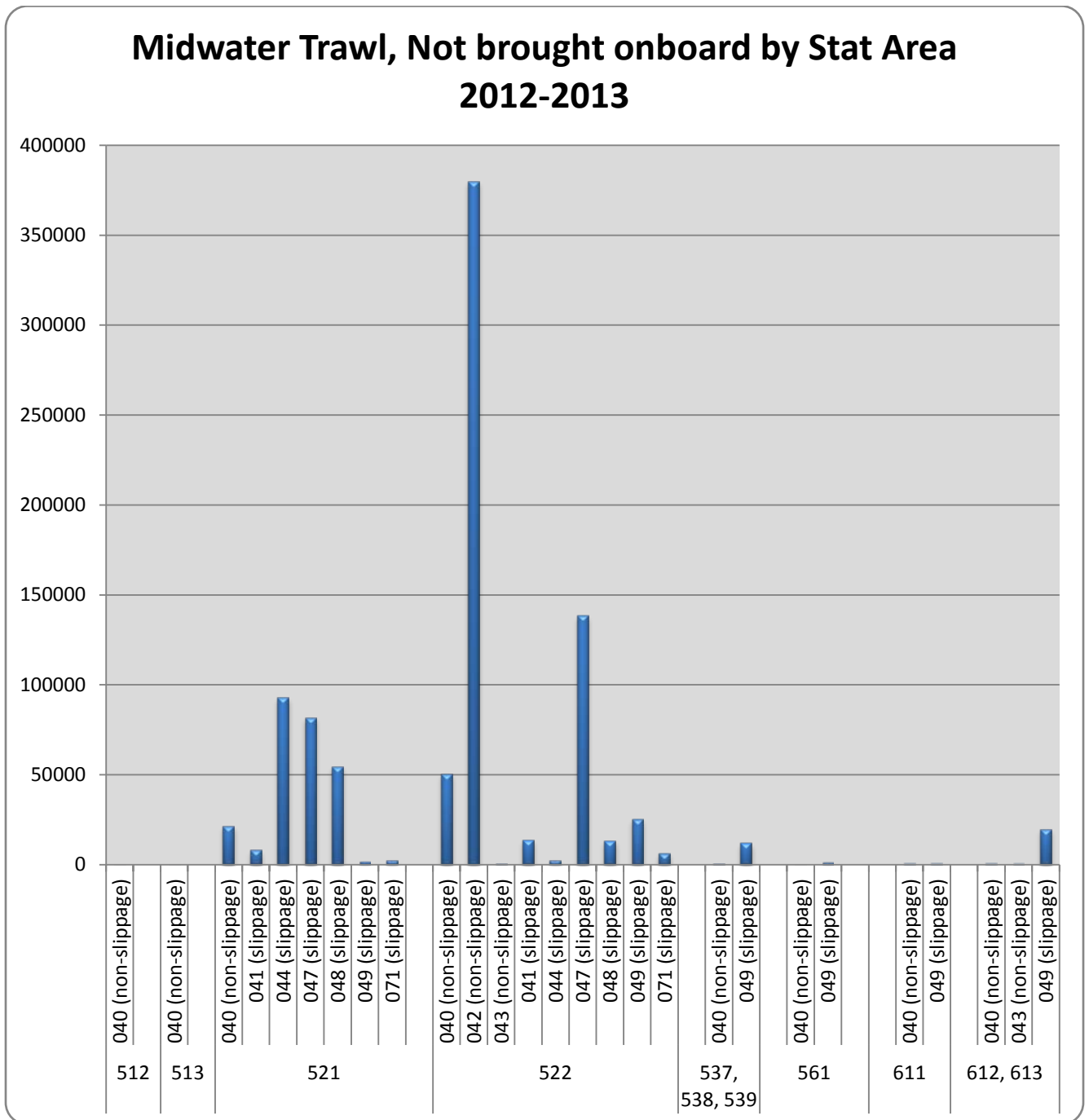
MIDWATER TRAWL, PAIRED & SINGLE

STAT AREA	FISH DISPOSITION CODE	WEIGHT (lbs)
512	040: Not brought onboard, operational discards (non-slippage)	55
	100: Kept (herring)	1,440,034
	Total Non-Slippage	55
	Total Slippage	0
	Slippage/Kept Herring (%)	0%
	Total Not Brought Onboard/Kept Herring (%)	0.004%
513	040: Not brought onboard, operational discards (non-slippage)	25
	100: Kept (herring)	147,190
	Total Non-Slippage	25
	Total Slippage	00
	Slippage/Kept Herring (%)	0%
	Total Not Brought Onboard/Kept Herring (%)	0.017%
521	040: Not brought onboard, operational discards (non-slippage)	21,475
	041: Not brought onboard, other (slippage)	8,213
	044: Not brought onboard, no market value (slippage)	93,000
	047: Not brought onboard, spiny dogfish clogging pump (slippage)	82,000
	048: Not brought onboard, vessel capacity filled (slippage)	54,800
	049: Not brought onboard, not enough fish to pump (slippage)	1,500
	071: Not brought onboard, clogged, other	2,330
	100: Kept (herring)	23,914,055
	Total Non-Slippage	21,475
	Total Slippage	241,843
	Slippage/Kept Herring (%)	1%
Total Not Brought Onboard/Kept Herring (%)	1.1%	
522	040: Not brought onboard, operational discards (non-slippage)	50,681
	042: Not brought onboard, gear damage prevented capture (non-slippage)	380,000
	043: Not brought onboard, fell from gear (non-slippage)	741
	041: Not brought onboard, other (slippage)	14,009
	044: Not brought onboard, no market value (slippage)	2,500
	047: Not brought onboard, spiny dogfish clogging pump (slippage)	138,500
	048: Not brought onboard, vessel capacity filled (slippage)	13,500
	049: Not brought onboard, not enough fish to pump (slippage)	25,325
	071: Not brought onboard, clogged, other	6,305
	100: Kept (herring)	61,425,678
	Total Non-Slippage	431,422
	Total Slippage	200,139
	Slippage/Kept Herring (%)	0.3%
Total Not Brought Onboard/Kept Herring (%)	1%	

Table 13 continued. Summary of NEFOP Observer Data for Catch Not Brought on Board by Disposition Code and Statistical Area, 2012-2013 Observed Midwater Trawl Trips (Single and Paired)

FISH DISPOSITION CODE		
537, 538, 539	040: Not brought onboard, operational discards (non-slippage)	662
	049: Not brought onboard, not enough fish to pump (slippage)	12,000
	100: Kept (herring)	4,318,982
	Total Non-Slippage	662
	Total Slippage	12,000
	Slippage/Kept Herring (%)	0.3%
Total Not Brought Onboard/Kept Herring (%)		0.3%
561	040: Not brought onboard, operational discards (non-slippage)	100
	049: Not brought onboard, not enough fish to pump (slippage)	1,000
	100: Kept (herring)	835,994
	Total Non-Slippage	100
	Total Slippage	1,000
	Slippage/Kept Herring (%)	0.1%
Total Not Brought Onboard/Kept Herring (%)		0.1%
611	040: Not brought onboard, operational discards (non-slippage)	500
	049: Not brought onboard, not enough fish to pump (slippage)	500
	100: Kept (herring)	676,838
	Total Non-Slippage	500
	Total Slippage	500
	Slippage/Kept Herring (%)	0.07%
Total Not Brought Onboard/Kept Herring (%)		0.1%
612, 613	040: Not brought onboard, operational discards (non-slippage)	504
	043: Not brought onboard, fell from gear (non-slippage)	450
	049: Not brought onboard, not enough fish to pump (slippage)	20,000
	100: Kept (herring)	1,296,642
	Total Non-Slippage	954
	Total Slippage	20,000
Slippage/Kept Herring (%)		1.5%
Total Not Brought Onboard/Kept Herring (%)		1.6%

Figure 11 Summary of NEFOP Observer Data for Catch Not Brought on Board by Disposition Code and Statistical Area, 2012-2013 Observed Midwater Trawl Trips (Single and Paired)



**Table 14 Summary of NEFOP Observer Data for Catch Not Brought on Board, 2012-2013
Observed Bottom Trawl Trips**

BOTTOM OTTER TRAWL_TARGET ATL.HERRING			
HERRING MANAGEMENT AREA	NOT BROUGHT ONBOARD VESSEL		
	SLIPPAGE EVENTS		NON-SLIPPAGE EVENTS
			Other
Area 1A	0		0
Total Trips	Total Observed Kept Atl. Herring	Total Observed Slipped Catch	Total Observed Non-slipped Catch
1	1,804 lbs	0 lbs	0 lbs
Area 1B	0		0
Total Trips	Total Observed Kept Atl. Herring	Total Observed Slipped Catch	Total Observed Non-slipped Catch
0	0 lbs	0 lbs	0 lbs
Area 2	2 (no market)		0
Total Trips	Total Observed Kept Atl. Herring	Total Observed Slipped Catch	Total Observed Non-slipped Catch
37	2,676,972 lbs	500 lbs	0
Area 3	0	0	0
Total Trips	Total Observed Kept Atl. Herring	Total Observed Slipped Catch	Total Observed Non-slipped Catch
0	0	0	10
Total Trips	TOTAL (all areas)	TOTAL (all areas)	TOTAL (all areas)
38	2,678,776 lbs	500 lbs	10 lbs
Total Slippage (or non-slippage)/Total Kept	N/A	0.01%	0
TOTAL SLIPPED CATCH (all areas)		500 lbs	
	% dogfish	0%	
	% safety	0%	
	% mechanical failure	0%	

**Table 15 Summary of NEFOP Observer Data for Catch Not Brought on Board by
Disposition Code and Statistical Area, 2012-2013 Observed Bottom Trawl Trips**

BOTTOM OTTER TRAWL

STAT AREA	FISH DISPOSITION CODE	WEIGHT (lbs)
513, 521, 522, 611, 612, 613, 615	Total Non-Slippage	0
	Total Slippage	0
	Slippage/Kept Herring (%)	0%
	Total Not Brought Onboard/Kept Herring (%)	0%
537, 539	043: Not brought onboard, fell from gear (non-slippage)	10
	044: Not brought onboard, no market value (slippage)	500
	100: Kept (herring)	2,676,972
	Total Non-Slippage	10
	Total Slippage	500
	Slippage/Kept Herring (%)	0.02%
	Total Not Brought Onboard/Kept Herring (%)	0.02%