

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



Prepared by the
New England Fishery Management Council

APPENDIX II

DRAFT

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 | | | | |
| 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

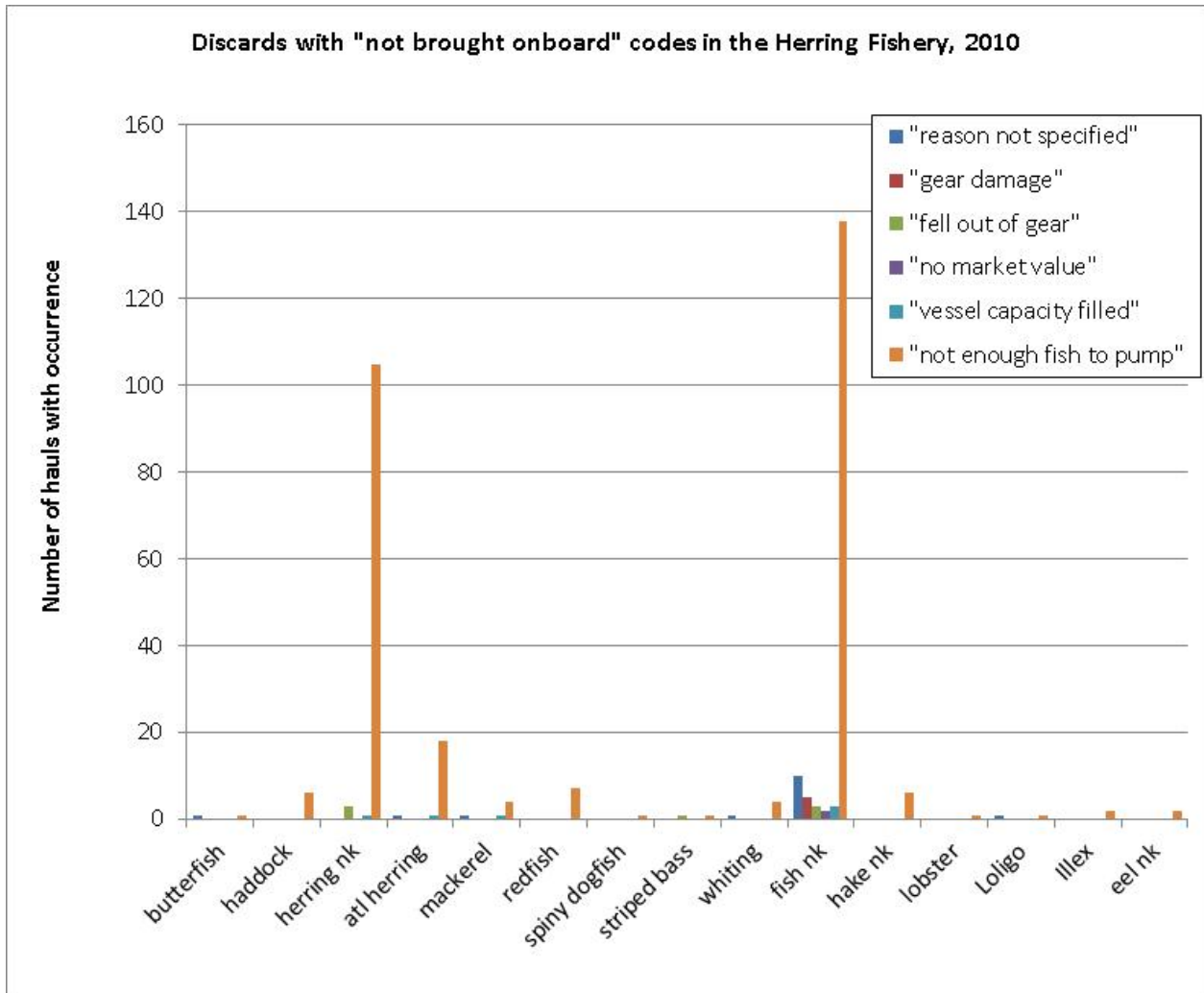


Figure 2 Observed Events on Limited Access Herring Vessels (by Estimated Weight of Fish in Pounds) with Fish Not Brought on Board in 2010

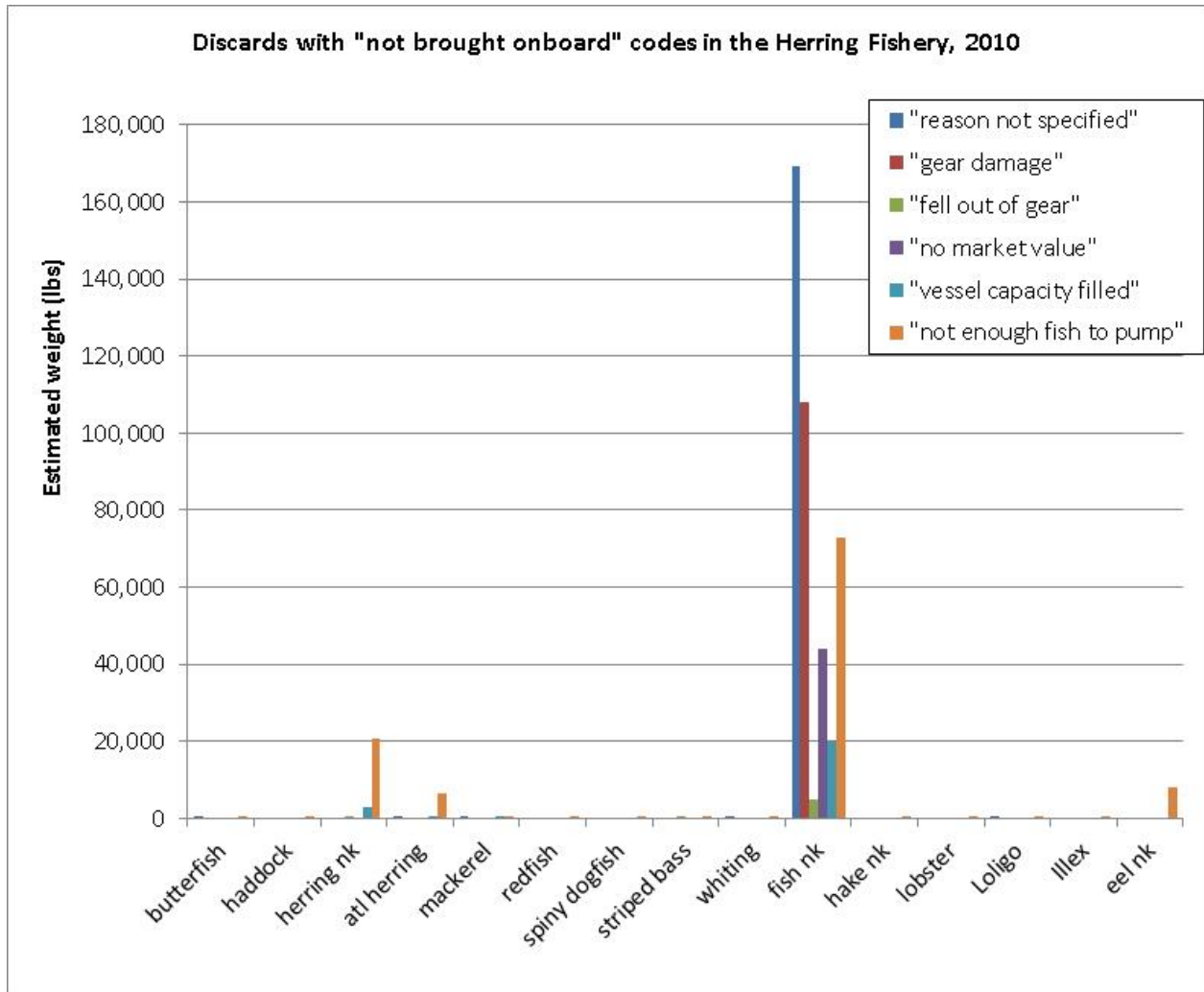


Table 4, Figure 3, and Figure 4 (see the following pages) summarize data for the observer records (1140 unique hauls) in 2011 on limited access declared herring trips that included *catch not brought on board*. About 198 of these hauls (17.4%) were documented with *operational discards*. The total weight 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.

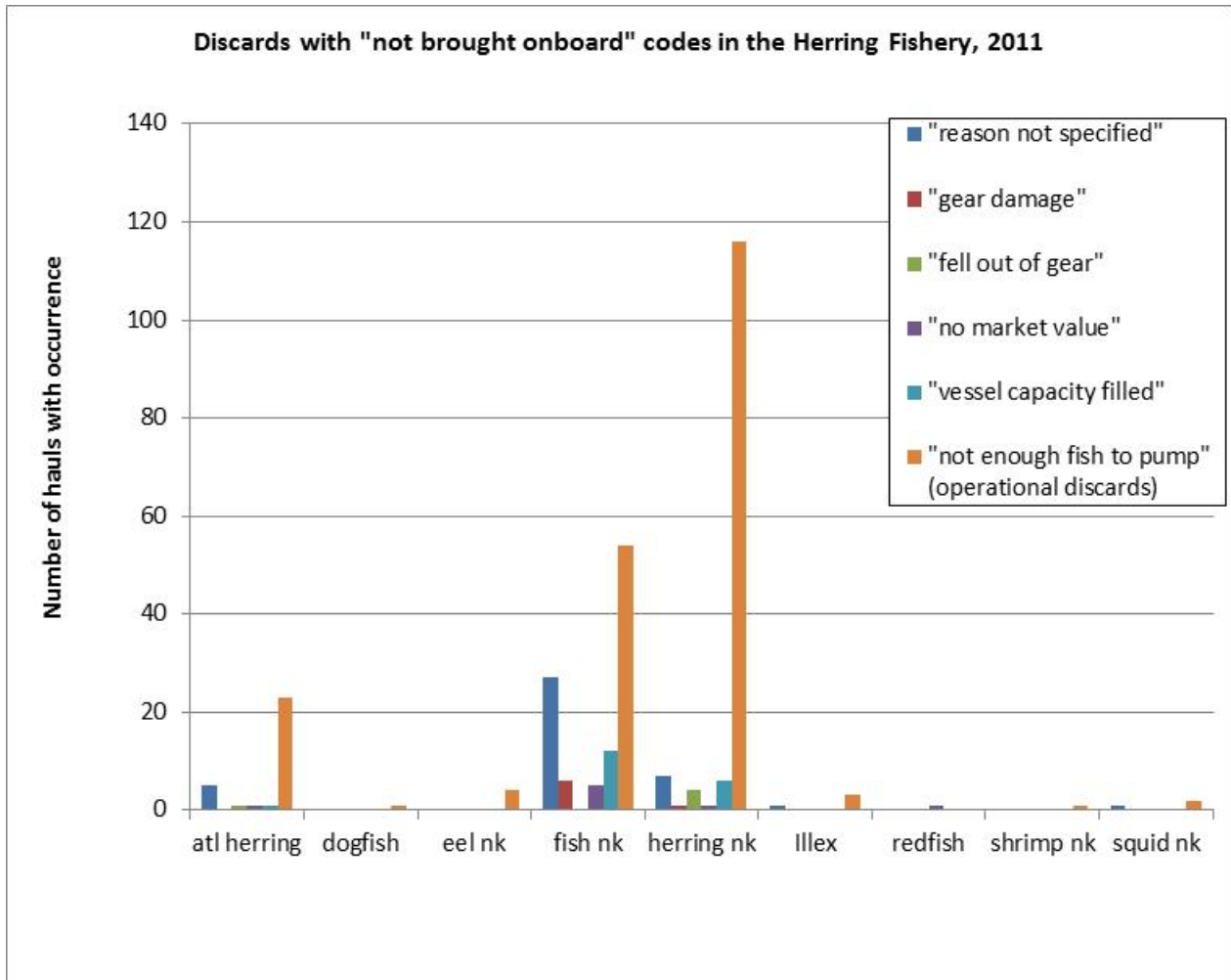
in 2011, 78 out of 1,140 hauls (6.8%) observed on limited access declared herring trips experienced full or partial slippage events (catch not brought on board, not including operational discards). The ratio of total estimated catch not brought on board compared to the total observed catch on these vessels 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 |

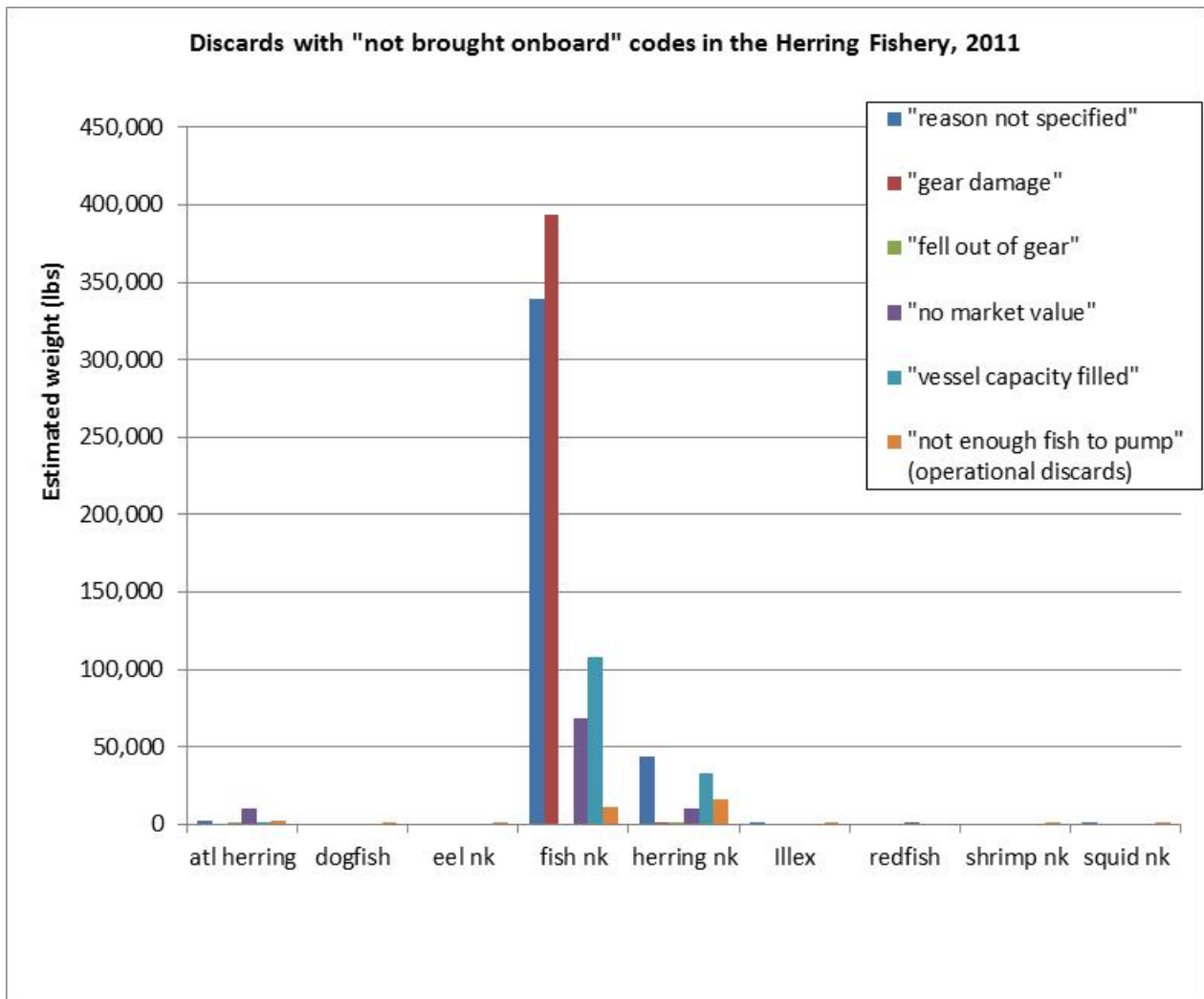
Note: Information in all columns except for the far right (“not enough fish to pump” (operational discards)) represents partial/full slippage events.

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.

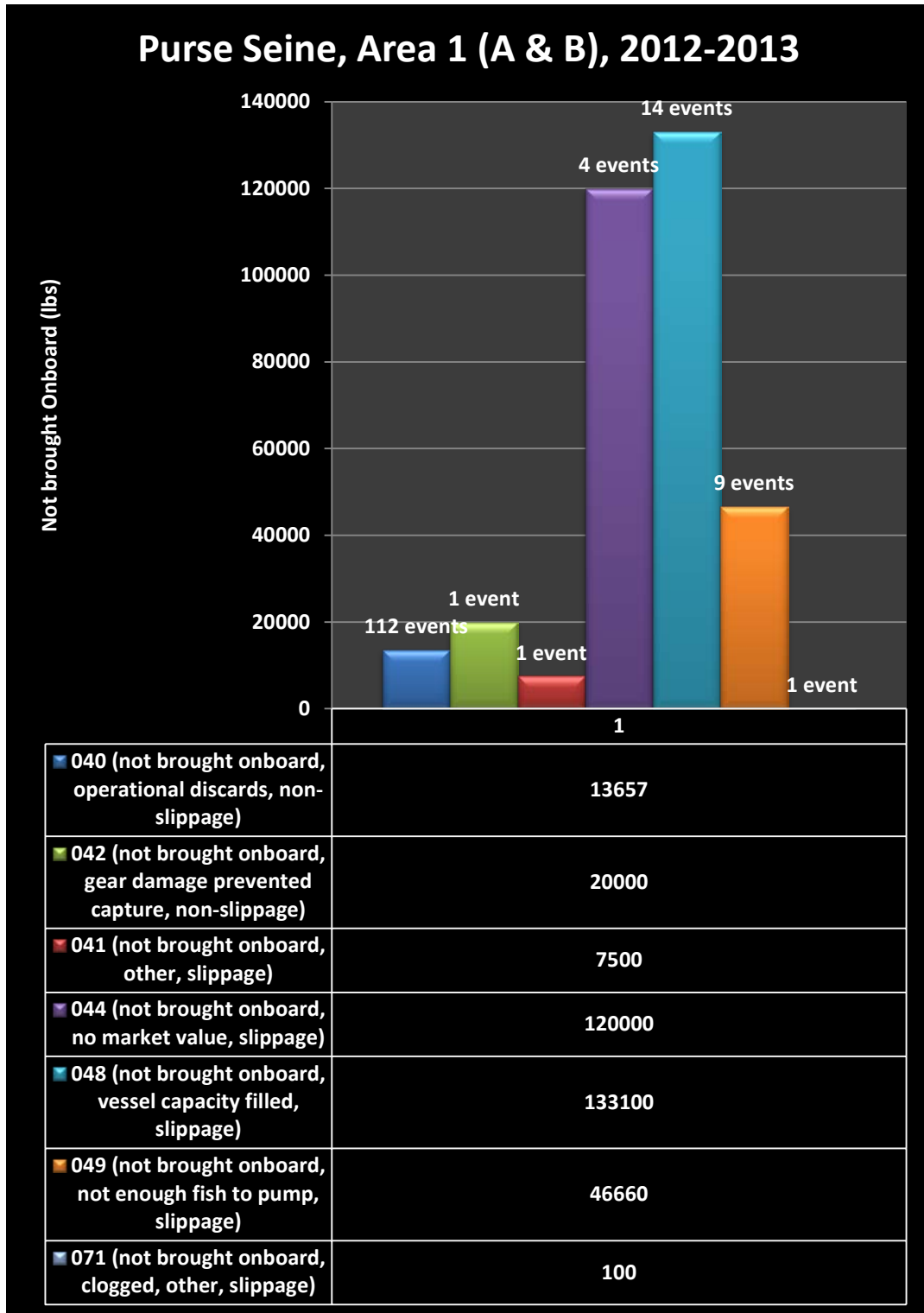
Small Mesh Bottom Trawl Vessels

- 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



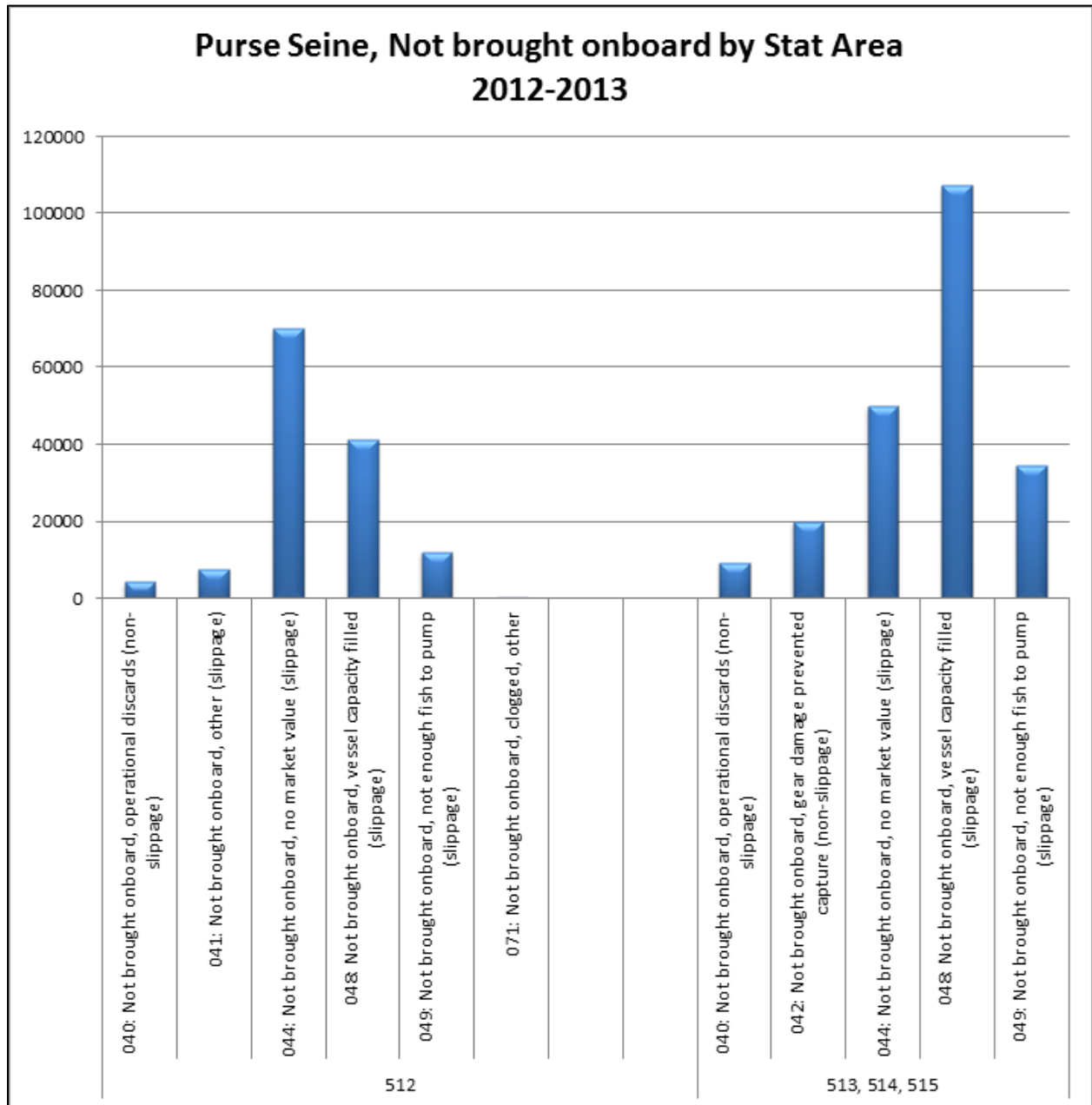
Note: In Framework 4, the Council is clarifying regulations pertaining to catch not brought on board under disposition codes 040 and 042.

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

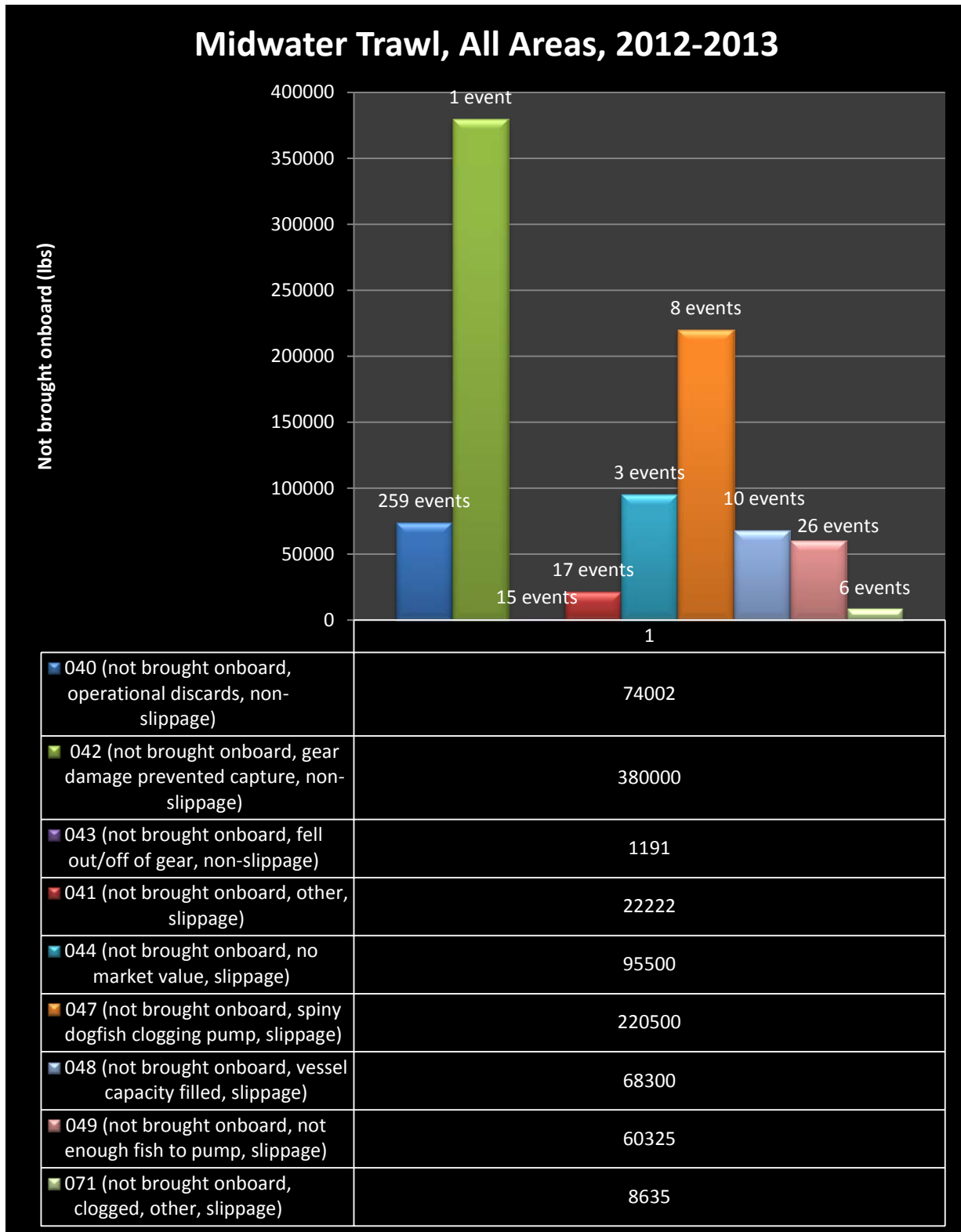


Figure 8 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Midwater Trawl Trips in Area 2

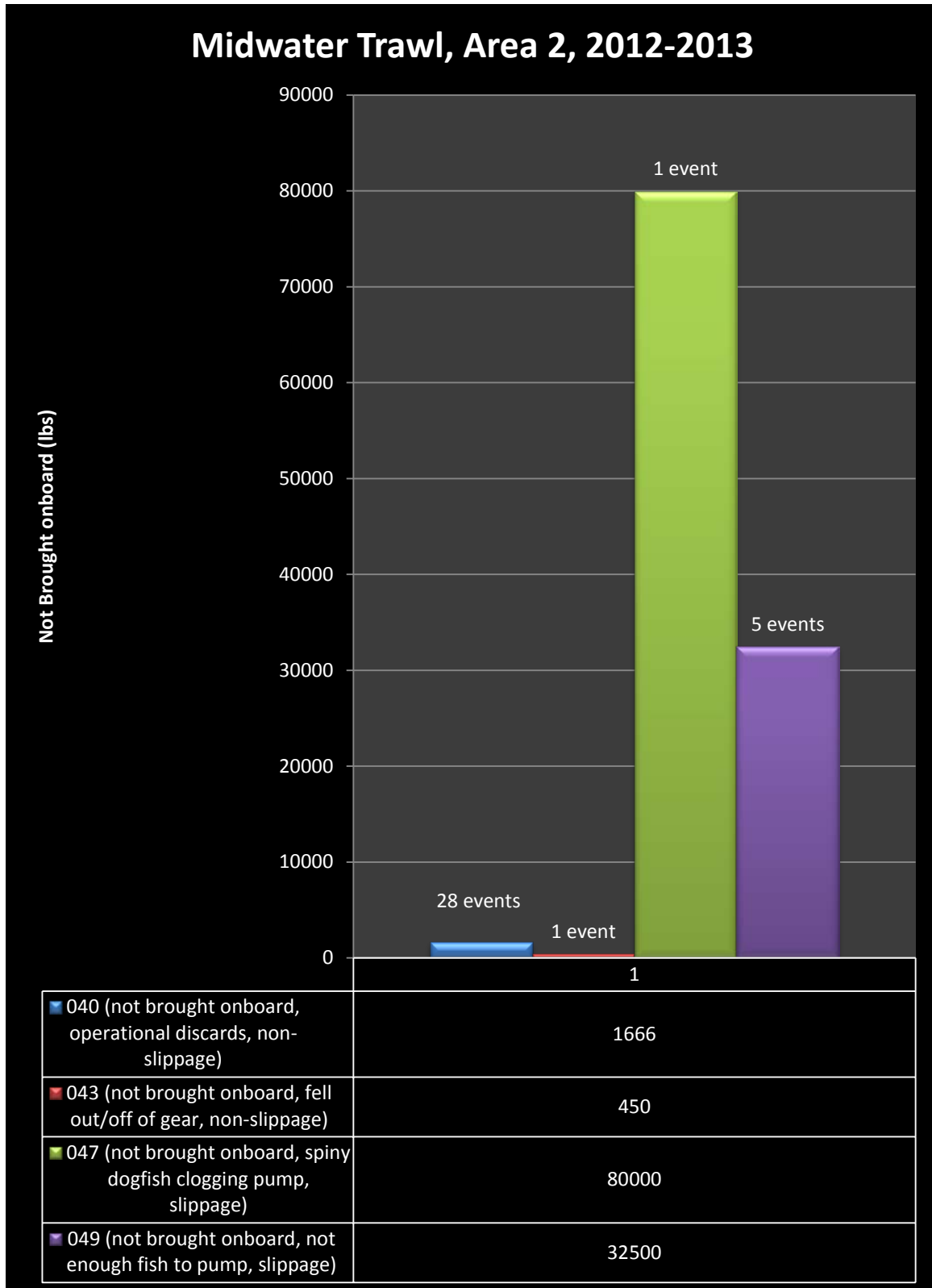
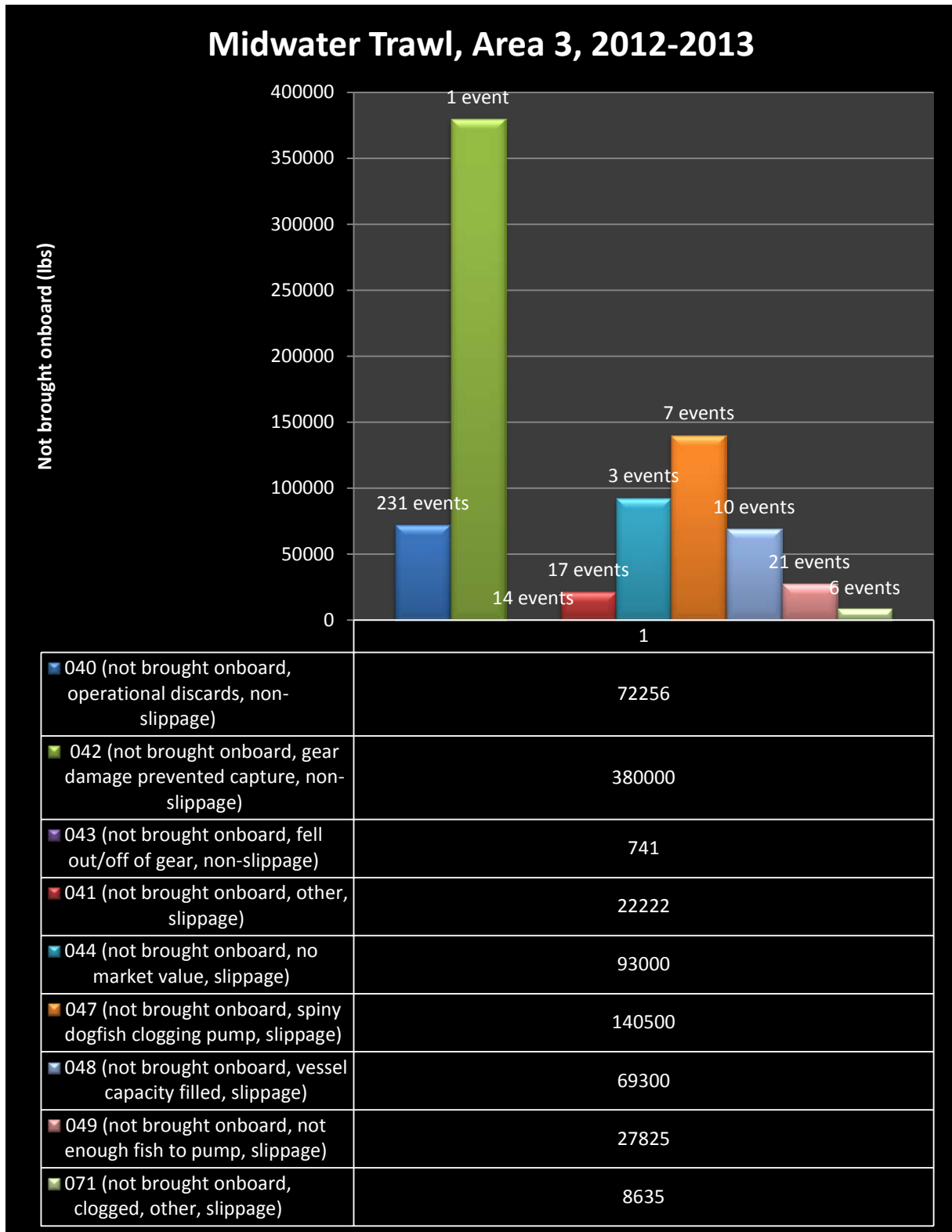


Figure 9 Number of Events and Estimated Weight of Catch Not Brought on Board by Disposition Code, 2012-2013 Observed Midwater Trawl Trips in Area 3



**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

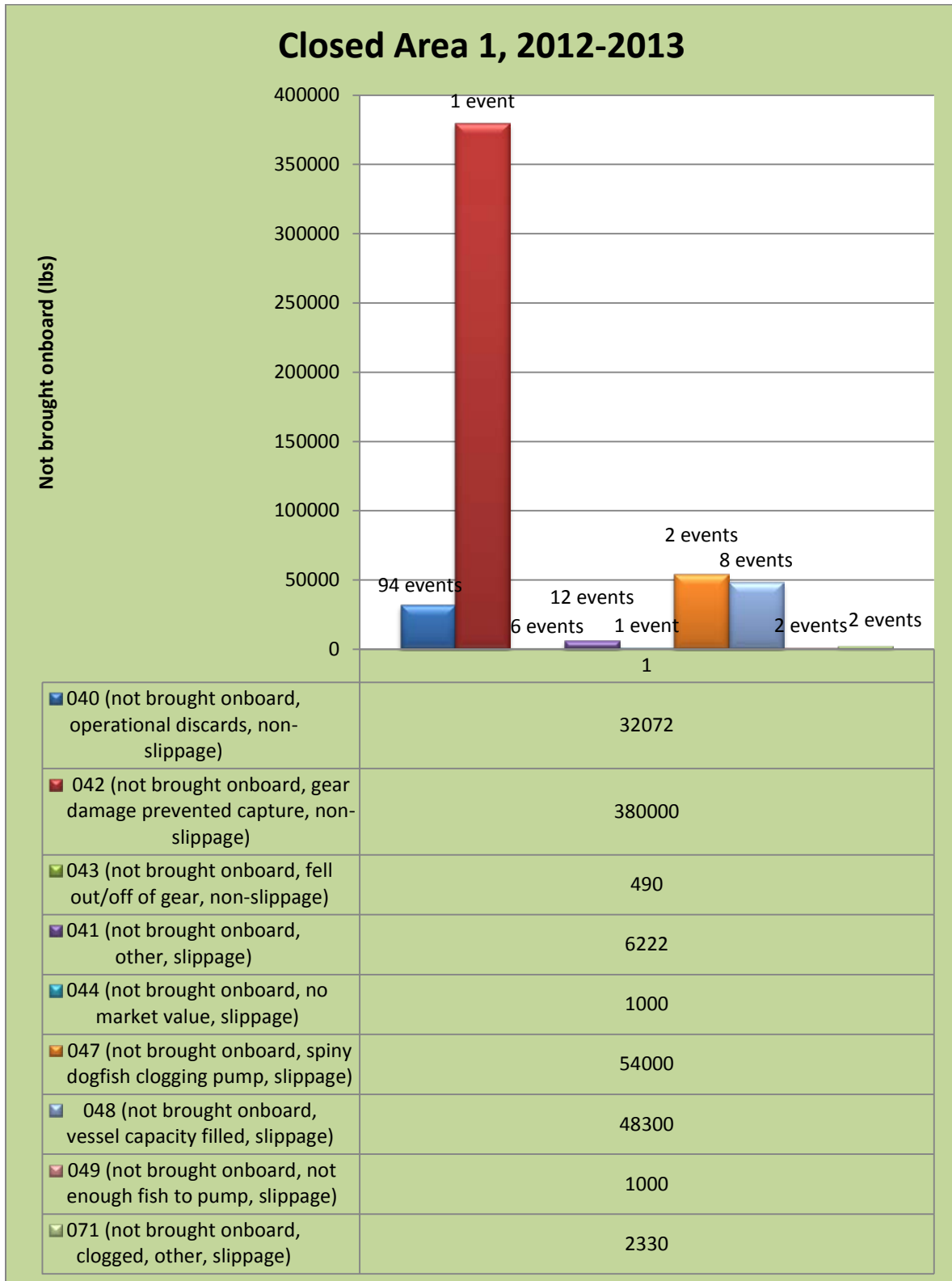


Table 13 Summary of NEFOP Observer Data for Catch Not Brought on Board by Disposition Code and Statistical Area, 2012-2013 Observed Midwater Trawl Trips (Single and Paired)

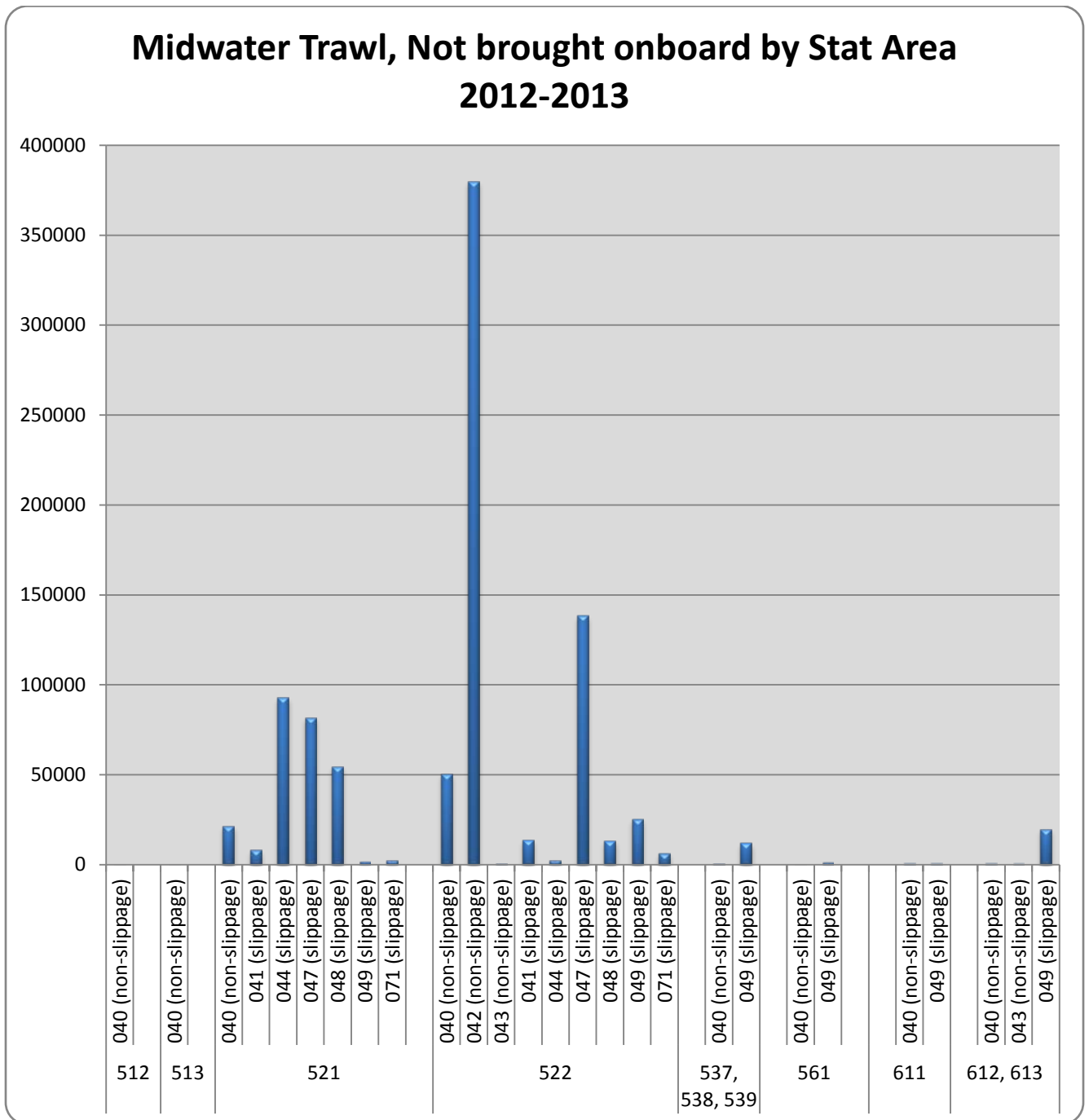
MIDWATER TRAWL, PAIRED & SINGLE

| 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% |