



Northeast Fisheries Science Center Reference Document 17-07

**2017 Discard Estimation, Precision, and  
Sample Size Analyses  
for 14 Federally Managed Species Groups  
in the Waters  
off the Northeastern United States**

by SE Wigley and C Tholke

January 2017

# **2017 Discard Estimation, Precision, and Sample Size Analyses for 14 Federally Managed Species Groups in the Waters off the Northeastern United States**

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**U.S. DEPARTMENT OF COMMERCE**  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northeast Fisheries Science Center  
Woods Hole, Massachusetts

February 2017

## Northeast Fisheries Science Center Reference Documents

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**Information Quality Act Compliance:** In accordance with section 515 of Public Law 106-554, the Northeast Fisheries Science Center completed both technical and policy reviews for this report. These predissemination reviews are on file at the NEFSC Editorial Office.

This document may be cited as:

Wigley SE, Tholke C. 2017. 2017 discard estimation, precision, and sample size analyses for 14 federally managed species groups in the waters off the northeastern United States. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 17-07; 170 p. Available from: <http://www.nefsc.noaa.gov/publications/>

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## **LIST OF ACRONYMS AND ABBREVIATIONS**

AA = Access area  
ASM = At-Sea Monitoring Program  
ASMFC = Atlantic States Marine Fisheries Commission  
CV = coefficient of variation  
d/k = discard/kept  
FED = finfish excluder device  
FMP = fishery management plan  
GEN = General category  
lg = large mesh  
LIM = Limited access category  
MA = Mid-Atlantic  
MRIP = Marine Recreational Information Program  
NE = New England  
NEFOP = Northeast Fisheries Observer Program  
NEFSC = Northeast Fisheries Science Center  
NMFS = National Marine Fisheries Service  
OPEN = Nonaccess area  
SBRM = Standardized Bycatch Reporting Methodology  
SE = standard error of the estimate  
sm = small mesh  
VTR = Vessel Trip Report  
xlg = extra large mesh

## EXECUTIVE SUMMARY

This report describes the analyses associated with the discard estimation of 14 federally managed fish and invertebrate species groups during the July 2015 through June 2016 time period and the expected coverage needed by at-sea observers for northeastern US fisheries for the April 2017 through March 2018 period using the Standardized Bycatch Reporting Methodology.

An estimated 69,691 mt (153,643,333 lb) of federally regulated species were discarded during the July 2015 through June 2016 time period. The predominant species groups discarded were skates (Rajidae) and sea scallop (*Placopecten magellanicus*). Across all species groups examined, “no market” was the reason reported for the majority of discards. Analyses also revealed that for fleets with observer coverage, the coverage within a fleet corresponded with the spatial and temporal patterns of fishing activity in terms of kept weight of all species. The discards reported in this document may not necessarily correspond directly with the discard estimates derived for individual stock assessments because of differences in stratification and data. Hence, the discard estimates are not definitive, but indicative of where discarding occurred among commercial fleets and for which species groups.

The sea days needed to achieve a precision-based performance standard (30% coefficient of variation of the discard estimate) were estimated to be 12,278 sea days for the 14 fish and invertebrate species groups across 56 fleets. The sea day analyses used a standardized protocol to account for the importance of the discarded species relative to the amount of discards by each fleet and total fishing mortality.

# INTRODUCTION

The Standardized Bycatch Reporting Methodology (SBRM) Omnibus Amendment (NEFMC 2007; NMFS 2008) was vacated by the US District Court of the District of Columbia on 15 September 2011 because of a deficiency associated with the prioritization process, an element of the amendment. The regulations implementing the SBRM were removed by the National Marine Fisheries Service (NMFS) on 29 December 2011 (NMFS 2011). A revised SBRM Omnibus Amendment was approved on 13 March 2015 and the final rule became effective 30 July 2015 (NEFMC 2015). This report provides some of the information required by the annual discard report specified in the SBRM amendment.

The SBRM discard estimation methods described in Wigley et al. 2007 are still applicable. The analyses conducted for 2017 are similar to those conducted in 2016 (Wigley et al. 2016) in which the sample size analyses are based on the assumption that the pattern of fishing activity observed in the prior year will be similar to that in the upcoming year.

This document presents the estimated discards and associated precision as well as the number of sea days needed to obtain a 30% coefficient of variation (CV) on the discard estimates for the 14 species groups associated with federal fishery management plans (FMPs) in northeastern US fleets<sup>1</sup>. Additionally, discard reasons associated with the discarded species are summarized. This document differs from SBRM documents prior to 2012 in that this document does not include a sea day prioritization<sup>2</sup> and does not contain information about sea turtles.

## METHODS

### Data Sources

The data sets used include July 2015 through June 2016 data from the Northeast Fisheries Observer Program<sup>3</sup> (NEFOP) database, the Vessel Trip Report (VTR; including logbooks from the surfclam [*Spisula solidissima*] and ocean quahog [*Arctica islandica*] fishery) database, the Northeast Fisheries Science Center (NEFSC) commercial landings database, and the National Oceanic and Atmospheric Administration Marine Recreational Information Program (MRIP) database.

The NEFOP is a comprehensive, multipurpose program that collects a broad range of data including information on all species, by disposition (retained and discarded), that are

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<sup>1</sup> “Fleet” is synonymous with “fishing mode.”

<sup>2</sup> The [observer sea day allocation documents](#) are available online.

<sup>3</sup> There were 880 At-Sea Monitoring Program (ASM) trips associated with New England hand line, longline, otter trawl, Ruhle trawl, and gillnet fleets in the July 2015 through June 2016 data. A comparison of discard rates derived from observer and at-sea monitor data in 2015 and 2016 revealed there were generally similar discard rates between the 2 data collection programs for the 18 fish species and 5 gear types (longline, large mesh otter trawl, large mesh Ruhle trawl, large mesh gillnet, and extra large mesh gillnet) where at-sea monitor data exist; hence NEFOP and ASM data were pooled. See Northeast Fisheries Observer Program (2013, 2016a, 2016b) for more information on ASM. The Atlantic States Marine Fisheries Commission (ASMFC) funded 81 otter trawl trips (84 trips when stratified by gear type and mesh size) in the July 2015 through June 2016 data. A comparison of discard rates derived from NEFOP-allocated and ASMFC-allocated trips revealed there were generally similar discard rates for the 3 fleets where ASMFC-allocated trips exist (Mid-Atlantic small mesh otter trawl fleet [62 trips], Mid-Atlantic large mesh otter trawl fleet [1 trip], and New England small mesh otter trawl fleet [19 trips]); hence, these data have been pooled.

encountered during a fishing trip as well as gear characteristics data, economic information, and biological samples (NEFOP 2013, 2016a, 2016b). The NEFOP employs trained sea-going observers and monitors to collect these data. Fish and invertebrate species are recorded by weight. Conversion factors were applied to convert any dressed weight data to live<sup>4</sup> weight equivalents.

For this analysis, only observed hauls from NEFOP trips with a “complete” sampling protocol were used. A “complete” sampling protocol includes obtaining species weights for both kept and discarded portions of all species in the catch. NEFOP training trips have been included in the analysis. Aborted trips and “set only” trips were excluded from the analysis along with trips fishing in statistical areas associated with the Southeast Region (statistical area  $\geq$  “700”), trips landing outside the Greater Atlantic Region (e.g., trips landing in Canada), and “carrier” trips (*fleet\_type* = “050”; no fishing effort occurred on these trips). Hauls with no catch reported, species weight with discard reason “039” (“previously discarded”), and catch of nonliving matter (such as debris, shells, etc.; these items would not be kept and sold) were also excluded for the analysis. Additionally, there were 2 observed New England (NE) small mesh haddock separator trawl trips, 2 observed NE tuna purse seine trips, and 2 observed NE scallop beam trawl trips for which there were no corresponding VTR trips for the gear; consequently these 6 observed trips were removed from the analysis. The 5 observed lobster pot trips associated with non-random vessel selection (program code 103) and 15 observed lobster pot trips without VTR reporting requirements during the January-March 2016 time period (trips outside the sampling frame) were excluded from the analysis.

The same broad stratification scheme used in previous SBRM analyses was employed in this analysis, in which trips were partitioned into nonoverlapping fleets by using 5 classification variables: geographic region, gear type, mesh, access area, and trip category. Calendar quarter was used in the analyses and was based on landed date to capture seasonal variations in fishing activity and discard rates. Two broad geographical regions were defined: New England (NE) and Mid-Atlantic (MA) based on port of departure<sup>5</sup>; ports in states from Maine to Rhode Island constituted the NE region, and ports in states from Connecticut to northern North Carolina (35° N) constituted the MA region. Gear type was based on Northeast gear codes (*negear*). Some gear codes were combined: sink, anchored, and drift gillnets, and single and paired mid-water trawls. Trips for which gear was unknown were excluded. Mesh size groups were formed for otter trawl and gillnet gear types. For otter trawls, 2 mesh groups were formed: small (mesh less than 5.50 in) and large (mesh 5.50 in and greater). For gillnets, 3 mesh groups were formed: small (mesh less than 5.50 in), large (mesh from 5.50 to 7.99 in), and extra large (mesh 8.00 in and greater). Two access area categories were formed: access area (AA) and open (OPEN). The sea scallop fishery was divided into general (GEN) and limited (LIM) category trips. All other fisheries were combined into a category called “all.” In the data set analyzed, there were also trips associated with 1 exempted fishery where 100% monitoring coverage was required for trips. The exempted trips using a mid-water trawl fishing in the groundfish access area have been grouped together to form the NE AA mid-water trawl fleet (Row 40).

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<sup>4</sup> In this document, “live” is equivalent to “round” grade (i.e., includes the weight of the shell for shellfish).

<sup>5</sup> Wigley et al. (2007) found that the majority (over 93%) of 2004 observed trips both originated and fished in the same region and exhibited the same general pattern as in the VTR data. An updated analysis using July 2007 through June 2011 data found similar results (Wigley et al. 2012a).

Stratification abbreviations used are given below.

Abbreviation	Definition
NE	New England ports (RI and northward)
MA	Mid-Atlantic ports (CT and southward)
Sm	Small mesh (less than 5.50 in)
Lg	Large mesh (from 5.50 to 7.99 in for gillnet; 5.50 in and greater for otter trawl)
Xlg	Extra large mesh (8.00 in and greater for gillnet)
AA	Access area
OPEN	Nonaccess area
GEN	General category
LIM	Limited access category

The VTR data are used as a basis for defining the sampling frame, since all federally permitted vessels are required to file a VTR for each fishing trip except those vessels that hold only a federal commercial lobster permit (See NOAA Fisheries Greater Atlantic Regional Fisheries Office [Vessel Trip Report Instructions](#) for guidance). These self-reported data<sup>6</sup> constitute the basis of the fishing activity of the commercial fleets. While dealer data are the preferred data to use because of more accurate weights, VTR data are used as a surrogate because dealer data do not contain mesh size and area fished information. The VTR data were thus used to expand the NEFOP discard ratios to total discards. For this analysis, the commercial federal VTR trips were used. Conversion factors were applied to convert various units of measure to pounds and all weight to live weight. VTR trip data were grouped into fleets as defined above. Trips participating in the US/Canada access area and other special access programs could not be identified in the VTR data. These trips were grouped by the other stratification variables and were not partitioned separately.

The VTR trips associated with the MA shrimp trawl fleet (Row 19) were partitioned into 2 groups: trips fishing in Pamlico Sound and trips fishing in ocean waters. Partitioning was needed because the Southeast Region has mandatory observer coverage of the southeastern shrimp fishery and allocates observer coverage to trips fishing in Pamlico Sound (Scott-Denton 2012). MA shrimp trawl trips fishing in Pamlico Sound have been removed from these analyses, while trips fishing in ocean waters have been retained.

The clam fishery has a logbook system separate from the VTR logbook. The commercial clam logbook data were used to augment the VTR data for the clam dredge fishery. The commercial and recreational landings (in live weight) for the federally managed species were used only in sample size analysis.

A list of the 14 federally managed fish and invertebrate species groups analyzed and the individual species that compose each species groups is given in Table 1. Summaries of the data used, in terms of number of trips and number of sea days, by fleet, calendar quarter, and data source (NEFOP and VTR), are given in Tables 2 and 3, respectively.

The spatial and temporal patterns of observer coverage within a fleet were evaluated. Rather than using number of trips (a trip-based metric), the kept weight of all species reported in the VTR was used. The “kept weight with observer coverage” was derived as the kept weight of all species reported in the VTR summed by fleet, statistical area, and quarter, where at least 1

<sup>6</sup> See Wigley et al. 2007 for more details on self-reported VTR data.

observed trip occurred in the fleet-quarter-statistical area cell and at least 3 observed trips<sup>7</sup> occurred in the fleet-quarter stratum. The “kept weight” was derived as the kept weight of all species reported in the VTR summed over all statistical areas and quarters within a fleet. The percentages of “kept weight with observer coverage” were calculated by dividing the “kept weight with observer coverage” by the “kept weight.” These percentages were derived for the individual fleets, confidential fleets combined into “Confidential fleets,” “Other minor fleets,” and all fleets combined. Additionally, as a relative measure of fleet activity among all fleets, the percentage of “kept weight” was derived by dividing the “kept weight” by the sum of the “kept weight” across all fleets.

## Discard Estimation

Total discards of each of the 14 federally managed species groups were estimated for the July 2015 through June 2016 time period by using a combined discard/kept ( $d/k$ ) ratio estimator (Cochran 1963), where  $d$  = discarded pounds of a given species group, and  $k$  = the kept pounds of all species (i.e., any species retained during the trip). Total discards (in weight) were derived by multiplying the estimated discard rate of each fleet by the corresponding fleet landings in the VTR database and then summing over fleets. In this analysis, no survival ratios were applied to discard estimates.

Simple imputation methods were used to fill quarterly cells for which there were fewer than 3 observed trips. Data from adjoining strata were pooled to impute estimates for cells with 0, 1, or 2 trips. In this imputation only the temporal stratification (calendar quarter) was relaxed to an annual aggregation even though seasonal variation can occur for some species. This simple imputation could not be applied to fleets where observer coverage was low or missing throughout the year (i.e., too few data to support the simple imputation approach). In these cases, imputed values were not used, and the fleet was designated as a fleet in need of pilot coverage<sup>8</sup>. If some data were available, then discard estimates were derived, but these results were not used in sample size analyses.

The variances and standard errors (SE) of the discard estimates were also derived. In this document, CV is defined as the ratio of the standard error of the total discards divided by the total discards. The appendix presents the equations used in the analysis.

For each species/species group and fleet, the landings from the VTR and clam logbook are presented to provide perspective for the discard estimates.

## Discard Reasons

For each species group and fleet, the fish dispositions associated with discarding (as reported by the at-sea observer) have been grouped into the following 6 discard reason categories: no market, regulation (size), regulation (quota), regulation (other), poor quality, and other. The discard reason categories and the associated fish dispositions are summarized in Appendix Table 2. The discard reasons “No Market” and “Poor Quality” are considered economic discards and not regulatory discards.

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<sup>7</sup> The 3 trips for fleet-quarter correspond with a minimum threshold for allocating observer coverage.

<sup>8</sup> Pilot coverage is defined as a minimum level of observer coverage necessary to acquire bycatch information with which to calculate variance estimates that can then be used to further define the level of sampling needed (NMFS 2004).

The observed (nonextrapolated) discards associated with each of the 6 discard reason categories were summed for each species group/species for the fleets where discards could be estimated. For individual fleets, the percentage of observed discards by discard reason category was derived by dividing the sum of the observed discards for each discard reason category by the sum of the total observed discards for each species group/species and fleet. The discard reason category percentages were taken from the observed discard reason category percentages. For each fleet that composes the “Other fleets filtered out” (an aggregated fleet that represents fleets where the variance of the discard estimate was not used in the annual sample size analysis), the observed discard reason category percentages were then multiplied by the total estimated (extrapolated) discards for each species group/species to derive the estimated discards by discard reason category. The total estimated discards by discard reason category were summed over the fleets that compose the fleet aggregation for each species group/species. The estimated discard reason category percentage was derived by dividing the estimated discards for each discard reason category by the sum of the total estimated discards for each species group/species and fleet. In other words, the “Other fleets filtered out” represents the weighted percentage where the weighting factor was the fleet extrapolated discards.

## **Sample Size Analysis**

A sample size analysis (also referred to as sea day analysis) was conducted to estimate the number of baseline trips and sea days needed to monitor the 14 federally managed species groups in each fleet. As described in Wigley et al. 2007 (and given in the appendix), the number of trips and sea days needed to achieve a given precision level was based on the variance of the total discard estimate for a species group, with the assumption that the pattern of fishing activity observed in the prior year would be similar to that in the upcoming year. Sample sizes (trips and sea days) associated with the precision standard for discard estimates (30% CV) were derived. The sample size analysis was performed by using trips as the sampling unit and then converting the number of trips to sea days by multiplying by the weighted mean VTR trip length, where the weighting factor was the quarterly number of VTR trips that occurred during July 2015 through June 2016 time period. The percentage of trips was derived by dividing the number of trips needed by the number of VTR trips that occurred in the fleet. When total discards could not be estimated because of little or no observer coverage (no data), or when total discards were zero (no variance), the sample size (number of trips) was determined by using a pilot coverage level set to 2% of the quarterly VTR trips that occurred in a fleet, with a minimum of 3 trips per quarter (12 trips per year) and a maximum of 100 trips per quarter (400 trips per year). The 2% pilot coverage was the same as was used in previous sea day analyses. In this analysis, to avoid assigning more coverage than could be attained, a refinement was made to pilot coverage: if less than 3 VTR trips occurred in a fleet and quarter, then pilot coverage was set to zero. The quarterly trips were then multiplied by the quarterly mean VTR trip length to derive quarterly sea days. The quarterly trips and quarterly sea days were then summed for the annual number of trips and sea days. It is recognized that pilot coverage may still result in too much coverage in cases where little or no observer coverage may actually be needed, when effort changes sharply between years, or when the fleet comprises a low number of trips on an annual basis.

Some fleet/species combinations contribute very little to the total fishing mortality or discard of the species but may require significant resources to characterize the precision of the estimate. For example, a high variance estimate for a rare event within a fleet would require high levels of sampling, even though the total discard in that fleet was unimportant with respect to

either the total discard or total fishing mortality of the resource. To address this, importance filters were used to provide a standardized protocol to further refine the number of baseline sea days based on: (a) the importance of the discarded species relative to the total amount of discards by a fleet, and (b) the total fishing mortality due to discards.

The 2017 baseline sea days were filtered by using a 95% cut-point in the discard filter and a 98% cut-point for the total mortality filter due to discards. In other words, estimates of sea day coverage for a given species or species group were derived for those fleets where discards constituted 95% of the discard mortality and catch constituted 98% of the total fishing mortality.

To determine the number of sea days (referred to as the “2017 sea days needed”) and trips needed to achieve a 30% CV on the estimates of discards for each of the 14 species groups within a fleet, the maximum number of sea days for the 14 species groups (i.e., the maximum number of sea days in a row) was used. This approach ensures that all species groups will have a 30% CV or less. In the event that sea days for each species group within a fleet were filtered out, the number of sea days for the fleet was based on minimum pilot days to maintain monitoring coverage for that fleet. Minimum pilot coverage represents a minimum threshold for the allocation of sea days and is defined as 3 trips per quarter for each quarter where industry activity was 3 trips or greater. The quarterly number of trips is multiplied by the quarterly mean VTR trip length and then summed over quarters to derive the annual minimum pilot days for the fleet. If the fleet was designated as a pilot fleet, then pilot sea days were used. These fleets are indicated with a “P.” The fleets with sufficient data to estimate sample size are referred to as nonpilot fleets.

## RESULTS

There were 56 fleets uniquely identified in the July 2015 through June 2016 data (Tables 2 and 3; Appendix Table 1). Based upon the industry activity during this time period, no new fleets were added to the collection of fleets analyzed. The NE small mesh haddock separator trawl fleet (an exempted fishery fleet) was not active in the time period analyzed. The other minor fleets not uniquely identified in this analysis were aggregated into a single fleet labeled “Other minor fleets.” Because of confidentiality rules, the landings and discards associated with 4 unique fleets (MA AA LIM scallop trawl [Row 10], MA large mesh Ruhle trawl [Row 15], MA floating trap [Row 21], and MA mid-water trawl [Row 41]) in Tables 2 and 3 were aggregated into a single fleet labeled “Confidential fleets” for reporting purposes in Tables 4 and 5. Hence, the fleet row numbers within Tables 2, 3, and 6 are sequential, while the fleet row numbers in Tables 4, 5, and 7 are ordered but there are gaps in the row numbers.

Of the 56 fleets examined, 22 fleets had little or no observer data: 5 fleets had sparse observer data across all quarters, while 17 fleets were missing observer data in all quarterly cells. The fleets with no observer coverage include trawl, purse seine, pot, and trap fleets, several of which have little industry activity. No discard estimation was performed for the 17 fleets with no observer coverage, and they were designated as fleets in need of pilot coverage (Tables 2 and 3; Appendix Table 1). The 5 fleets with sparse observer coverage were also designated as fleets in need of pilot coverage for the sample size analysis; however, discard estimation was performed with the sparse observer data. For the 34 remaining fleets (designated as nonpilot fleets; Rows 1, 2, 4-9, 11, 18, 23-25, 27, 28, 30-38, 40, 42-46, 48, 49, 55, and 56), estimates of discards and their associated variance were derived and used to determine the sample sizes needed for a 30% CV.

Of the 34 fleets, there were 16 fleets (Rows 1, 2, 4, 9, 11, 30-32, 37, 40, 42-45, 48, and 55) where the simple imputation was applied (Tables 2 and 3).

Thus, for the discard estimation and precision analysis, 17 fleets had no discard estimation, and 39 fleets had discards estimated. For the sample size analysis, 34 fleets had sample sizes derived from the discard variances, and 22 fleets had sample sizes based upon pilot coverage.

A total of 3,802 trips (10,500 days) was observed during the July 2015 through June 2016 period. When these trips were stratified, some trips were partitioned between strata, resulting in 4,202 trips (11,401 days; Tables 2 and 3) in the NEFOP data set.

In terms of number of trips, the percentages of observed trips varied by fleet and calendar quarter. On an annual basis, for the 39 fleets with some observer coverage, the percentage of observed trips by fleet ranged between 0.1% (MA Hand Line, Row 3; Table 2) to 88% (NE AA mid-water trawl fleet, Row 40; Table 2). It is unexpected to have coverage percentages at or near 100%; however, this fleet is composed of the exempt fisheries trips for which 100% monitoring was required<sup>9</sup>. All trips within this fleet did have an observer aboard; however, 1 trip had all hauls classified as unobserved, and unobserved hauls are not used in the analysis. For the 34 nonpilot fleets (excluding the exempted fleet [Row 40]), the percentage of observed trips ranged between 0.8% (NE lobster pot, Row 49) and 17.6% (NE large mesh gillnet fleet, Row 27). Over all fleets, the percentage of observed trips was 5.0% (Table 2). The percentage of observer days (Table 3) was generally similar to the percentage of observed trips.

In terms of kept weight of all species, the percentage of observer coverage over all fleets was 72% (Table 4). For the 34 nonpilot fleets, the percentage of observer coverage ranged between 3% and 99% with an average of 75% (Table 4). Twenty-six of the 34 fleets had a percentage greater than or equal to 61% with an average of 86%. This finding indicates that the majority of kept weight within the fleet was associated with statistical areas and quarters with observer coverage. Additionally, these 26 fleets composed 86% of the total kept weight across all fleets. The kept weight of all species was considered a surrogate for fishing effort; hence, observer coverage occurred spatially and temporally where the majority of fishing effort occurred at the statistical area and quarter year scales.

The landings associated with the combined fleet “Other minor fleets” contributed 0.1% of the total landings across all fleets (Table 4); thus, the 56 uniquely identified fleets account for almost all of the total VTR landings.

Annual VTR landings for all fleets and estimated discards (live weight, in pounds) with associated precision (CV and SE) for 39 individual fleets (Rows 1-9, 11, 13, 14, 16, 18, 19, 23-25, 27, 28, 30-38, 40, 42-46, 48, 49, 55, and 56) and 2 combined fleets (“Confidential fleets” and “Other minor fleets” [with landings only]) are summarized for each of the 14 species groups, the individual species that composed those species groups, and the 14 species groups combined (Tables 5A, 5B, and 5C; Figures 1A and 1B). There were 13 fleets (Rows 12, 17, 20, 22, 26, 29, 39, 47, and 50-54) as well as the “Other minor fleets” that have no discard estimation because of the lack of NEFOP coverage. Fleets with no discard estimation have dark shade in Tables 5A and 5B. In Table 5A, the CVs associated with the cells (species group and fleet) that were not used in the sample size analysis (i.e., cells filtered out via the importance filter) are indicated in light shading. Precision of discards of individual species (Table 5B) and 14 species group combined (Table 5C) were not used in the sample size analysis.

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<sup>9</sup> For further information see the [Federal Register RIN 0648-AY47](#).

Based upon this analysis, 69,691 mt (153,643,333 lb; live weight) of discards for the 14 species groups occurred during the July 2015 through June 2016 period (Table 5C). The majority (70%) of the discards comprises 2 species groups: skates (Rajidae; 55%) and sea scallop (*Placopecten magellanicus*; 15%); the remaining SBRM species groups each accounted for less than or equal to 8% (Table 5A).

The percentage of discards to total catch varied among the 14 species groups (Table 5A; Figure 1A) and individual species (Table 5B; Figure 1B). One species group (SAL) had zero discards (this species group is not presented in Figure 1A and Appendix 3A); 2 species groups (SCOQ, and HERR) where discards were less than 1% of total catch; 5 species groups (TIL, BLUE, SCAL, RCRAB, and SBM) where percentages of discards ranged between 1% and 10% of total catch; 3 species groups (GFL, GFS, and FSB) where discards ranged between 11% and 25% of total catch; and 3 species groups (MONK, DOG, and SKATE) where discards were greater than 26% of total catch. The species groups with the highest percentage of total discards relative to total catch were: skates (73%), spiny dogfish (*Squalus acanthias*; 42%), and monkfish (*Lophius americanus*; 29%; Figure 1A). For individual species (Table 5B; Figure 1B), most notable are the high percentages of discards to total catch for Atlantic wolffish (*Anarhichas lupus*; >99%), ocean pout (*Zoarces americanus*; >99%), and windowpane flounder (*Scophthalmus aquosus*; >99%) because of the no possession regulations for these 3 individual species, and for Atlantic halibut (*Hippoglossus hippoglossus*; 76%) because of a 1 fish per trip regulation. Offshore hake (*Merluccius albidus*; 86%) and red hake (*Urophycis chuss*; 71%) had a high percentage of discards to total catch because of economic reasons (no market). The NE large mesh otter trawl fleet (Row 8) had the highest estimated discards of SBRM species (Table 5C).

The reasons for discarding varied among the 14 species groups (Appendix Table 3A) and individual species (Appendix Table 3B). Overall, for the 14 species groups, the majority (81%) of discards were attributed to “No Market.” “Regulation” (size, quota, and other), “Poor Quality,” and “Other” contributed 15%, 2%, and 2%, respectively (Appendix Table 3A).

The percentages of discards to total catch by fleet were also summarized for the 34 nonpilot fleets (Figure 2). Discards of 1 or more of the 14 species groups that were filtered out via the importance filter have been aggregated into a species group labeled “Other SBRM.” Discards of nonfederally managed species have been aggregated into a species group labeled “Non-SBRM.” The percentages of discards to total catch varied by fleet (Figure 2). There were 3 fleets (Rows 30, 40, and 42) where discards were less than 1% of the total catch in the fleet; 6 fleets (Rows 4, 23, 24, 32, 55, and 56) where the percentages of discards ranged between 1% and 10%; 10 fleets (Rows 1, 2, 7, 25, 28, 31, 33, 34, 38, and 45) where the percentages of discards ranged between 11% and 25% of total catch; 11 fleets (Rows 5, 8, 18, 27, 35-37, 43, 44, 48, and 49) where the percentages of discards ranged between 26% and 50% of the total catch; and 4 fleets (Rows 6, 9, 11, and 46) where discards were greater than 50% of the total catch (Figure 2).

The number of species groups discarded within a fleet also varied among fleets. The majority of fleets (23 of the 34 fleets) comprised 2 or 3 discarded species groups. For 9 of these fleets (Rows 1, 4, 9, 11, 31, 32, 43, 44, and 55), the “Other SBRM” species group comprised the majority of the discards. This finding indicates that the majority of discards for those 9 fleets were filtered out via the importance filter. There were 9 fleets (Rows 23, 30, 40, 42, 45, 46, 48, 49, and 56) for which the “Non-SBRM” species group comprised the majority of the discards. There were another 5 fleets where 2 of the 3 discarded species groups were “Other SBRM” and “Non-SBRM,” and the third represented the majority of the discards: Row 25 (skate; 77%), Row

18 (GFL; 64%) and Rows 2, 24, and 27 (spiny dogfish; 71%, 55%, and 72% respectively; Figure 2). The remaining fleets (11 of the 34 fleets) had between 4 and 9 discarded species groups. The skate species group comprised the plurality of the discards in 5 of these fleets (Rows 5, 6, 8, 28, and 35) while the “Non-SBRM” group comprised the plurality of the discards in 4 fleets (Rows 7, and 36-38), and there were 2 fleets (Rows 33 and 34) for which SCAL comprised the plurality of discards. The dominant “Non-SBRM” species in the scallop dredge fleets (Rows 31-38) were sand dollar (Clypeasteroidea), starfish (Asteroidea), and sponge (Porifera). “Fish, not known” was the dominant “Non-SBRM” species in the NE purse seine fleet and the NE mid-water trawl fleets (Rows 30, 40, and 42, respectively). American lobster (*Homarus americanus*) and Jonah crab were the dominant “Non-SBRM” species in the MA and NE lobster pot fleets (Rows 48 and 49, respectively; Figure 2).

The precision of the discard estimates varied by species group and fleet (Table 5A). Of the 14 species groups, 12 species groups (BLUE, FSB, HERR, GFL, MONK, RCRAB, SCAL, SKATE, GFS, DOG, SBM, and TIL) had an overall CV that was less than 30%, and 1 species group (SCOQ) had an overall CV that was greater than 30% and 1 species group (SAL) had zero discards and consequently no CV. The discards of 4 species groups (BLUE, HERR, SCOQ, and TILE) were filtered out in all fleets; this finding indicates that the discards of these species groups were a minor component of the total catch of these species (Table 5A; Figure 1A). The precision of the discard estimates for individual species are given in Table 5B; these precision estimates were not used in the sample size analysis.

The number of sea days needed for each species group and fleet, as well as the number of pilot coverage days, minimum pilot coverage days, and the sea days needed for the fleet (referred to as “2017 Sea Days Needed”), are summarized in Table 6. A total of 12,278 days are needed for the 56 fleets. As mentioned previously, 22 fleets had insufficient observer information to estimate discards, and the sea days for these fleets were based on pilot coverage. The number of sea days needed for fleets with the pilot coverage designation was 641 days (5% of 12,278 days; Table 6). Of these 22 fleets, there were 2 fleets (Rows 10 and 26) where industry activity was so low that pilot coverage was zero (Tables 2 and 6). There are 16 fleets for which the sea days for all species groups were filtered out via the importance filter, and minimum pilot coverage days were used to maintain some coverage (Rows 1, 4, 11, 23, 30-32, 40, 42-46, 48, 55, and 56; Table 6). A total of 368 sea days was associated with the fleets with minimum pilot coverage (3% of 12,278 days; Table 6). The sea days needed for the remaining 18 fleets (11,269 days, representing 92% of the total sea days needed) were derived by using the variance of the discard estimate (Tables 6). Of the 11,269 days, 5,256 days (47%) were associated with 1 fleet (NE large mesh otter trawl [Row 8]; Table 6).

The sample size (in terms of number of sea days, number of trips, and percentage of trips based on the July 2015 through June 2016 VTR trips) needed to achieve a 30% CV of the discard estimate in 18 fleets is given in Table 7. The relationship between sample size and precision, over a range of sample sizes, is shown in Figure 3 for species groups and fleets.

## DISCUSSION

A broad stratification was used to support the deployment of observers on commercial fishing trips among various fleets by using attributes known prior to the trip departure. As discussed in previous discard estimation analyses (Wigley et al. 2007, 2011), species-specific stock assessment discard estimation may differ from this report because of differences in

stratification and data used (calendar year versus 12-month [July through June] time period; area fished versus region [port of departure]; gear groupings; discard mortality assumptions; and VTR landings versus dealer landings). Region, based on port of departure, was used for the deployment of observers. It is recognized that area fished would provide a better stratification for discard estimation. It is expected, however, that, when uncertainty in the estimates is taken into account, estimates would be in the same order of magnitude. The discard estimates presented here are not definitive estimates but rather are indicative of where discarding occurred among the commercial fleets for the 14 federally managed species groups.

No survival ratios were applied to the discard estimates; we do not account for potential survival of organisms returned to the water. When comparing discard estimates from this study with those from stock assessments, it is useful to note that survival ratios are applied in stock assessments for Georges Bank and Gulf of Maine stocks of Atlantic cod (*Gadus morhua*), Atlantic sea scallop (*Placopecten magellanicus*), skates, spiny dogfish, fluke (*Paralichthys dentatus*), southern New England/Mid-Atlantic and Gulf of Maine stocks of winter flounder (*Pseudopleuronectes americanus*), and southern New England/Mid-Atlantic yellowtail flounder (*Limanda ferruginea*).

These analyses have used VTR data. Dealer (*CFDETSyyyy*) data do not contain mesh or area fished information until the trip-based allocation is performed (Wigley et al. 2008). The trip-based allocation of dealer (*CFDETT/SyyyyAA*) data is conducted annually and was not available when this analysis was initiated. Given that the VTR landings estimates are usually less (VTR reports the captain's hail weight) than the dealer records for a given fleet, the corresponding estimates of discards will also be underestimated. The magnitude of the underestimation will vary by fleet and year.

It is important to note the discard estimates provided in this analysis appropriately reflect the underlying data used (e.g., the VTR data used to raise the discard ratios to total discards and the observed trips used to derive the discard ratios were from the same VTR-based sampling frame). It is inappropriate to extrapolate beyond the sampling frame used unless it can be shown that the trips with no VTR reporting requirements have the same landings and discard characteristics as the trips with VTR reporting requirements.

In 2014, the northern shrimp fishery was closed and remained closed through 2016. As in years past, the VTR trips associated with NE shrimp trawl fleet (Row 20; Tables 2 and 3) were investigated. These trips used 2 in mesh, and most trips reported catching small mesh groundfish and/or herring while a few trips reported catching squid. The northern shrimp fishery requires a finfish excluder device (FED); however, other small mesh exempted fisheries do not require a FED. Currently, there is no data element within the VTR database that indicates whether or not a FED or other bycatch reduction device was used. Based upon previous investigations, the captains of the vessels participating in the small mesh exempted fisheries indicated that a FED was not used. An additional data element within the VTR database is needed to distinguish trips using a FED from those that are not.

The analysis conducted for the spatial and temporal observer coverage used live weight. As a result, fleets using scallop dredge and clam dredge targeting species with shells have higher kept weight percentage than other fleets because of the use of "live" weight rather than "landed meat" weight. However, the use of live weight does not distort the observed percentage (spatial or temporal pattern) within a fleet. It is important to remember that percent observer coverage is an indicator of where observed kept weight (or trips) occurred relative to unobserved kept weight (or trips). The percentage observed should not be confused with the precision of the discard

estimate, which is the metric used to describe discard variability and to determine the sample size needed for monitoring purposes.

The refinement to pilot coverage made in the 2016 analysis (pilot coverage was applied only when there were at least 3 VTR trips in a fleet and calendar quarter; Wigley et al. 2016) reduced the pilot coverage in 8 of the 22 pilot fleets (Rows 10, 17, 19, 21, 26, 39, 41, and 50; Table 2) where there were 1 or 2 VTR trips within a fleet and calendar quarter and prevented pilot coverage from exceeding industry activity. The refinement also resulted in no coverage for fleets with low overall trip activity: MA AA LIM scallop trawl fleet (Row 10; 1 VTR trip) and NE small mesh gillnet fleet (Row 26; 4 VTR trips; Tables 2 and 6).

There is 1 fleet with high sea day requirements (>2,000 sea days). The high monitoring coverage for NE large mesh otter trawl fleet (Row 8; Table 6) was because of high variability of red deepsea crab discards. In this analysis, as well as in previous analyses (NEFSC 2011a, 2011b; Wigley et al. 2011, 2012b, 2013, 2014, 2015, 2016), the high variability arose from observing some trips that were fishing in deep-water portions of statistical areas as well as observing the same trips or other trips that were fishing in shallower portions of the same statistical areas. Red deepsea crabs were encountered during trips fishing in deep water. Although the discard reason reported for this fleet was “No Market” (Appendix Table 3A), these vessels do not generally have permits to land red deepsea crabs, thus the red deepsea crabs must be discarded. Currently, the analysis does not stratify fleets further to account for depth because statistical area is the finest spatial resolution that defines a subtrip within the VTR (a subtrip within the VTR is a unique gear, mesh, and statistical area).

Regulatory red deepsea crab discards (e.g., non-retention of female crabs) are known to occur in the NE and MA crab pot fleets (Rows 50 and 51, respectively). However, with no observed trips in the timeframe of the analysis, the magnitude of these discards, relative to those in observed fleets, is unknown. Discards from unobserved fleets are not incorporated into the importance filter. If the penultimate (next largest) value of sea days is used in the NE large mesh otter trawl fleet (i.e., 796 days rather than 5,256 days for Row 8; Table 6), then the total number of sea days needed across the 56 fleets would be 7,818 days (a 36% decrease from the 12,278 days). When the penultimate value is used, the expected achieved precision of red deepsea crab discards in Row 8 would be about 91% CV (Figure 3).

Fish may be discarded for economic reasons (e.g., “No Market” or “Poor Quality”) or for regulatory reasons (size, quota, or other). When considering mechanisms to reduce discards, it may be useful to know why discarding is occurring.

It is important to note that large discard percentages may be associated with a small quantity of discards. Additionally, it is important to note that for many species, the discards are associated with fleets that have been filtered out by the importance filter. Observers classify the discards by fish disposition based upon the NEFOP protocol (NEFOP 2013, 2016a, 2016b) in which the observer asks the captain/crew why species are being discarded. Thus, these data should be considered a form of self-reported data, and as such, these data are difficult to verify and should be interpreted cautiously.

This analysis does not address the coverage needed for individual sectors or multiple stock components of a species. The analytical basis for the allocation of future sea day coverage in this analysis is a specified level of precision (i.e., 30% CV), and an expectation that the pattern of fishing activity observed in the prior year will be similar to that in the upcoming year.

## ACKNOWLEDGEMENTS

We thank all the NEFOP observers and at-sea monitors for their diligent efforts to collect the data used in this report. We thank our reviewers for their helpful comments on this report.

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**Table 1. List of the 14 fish and invertebrate species groups (in bold), with species group abbreviations in parentheses and scientific names in italics, and the species that compose these groups, corresponding to the 13 federal fishery management plans implemented in the waters off the northeastern United States.**

<b>Species Group</b>	<b>Scientific name</b>
<b>ATLANTIC SALMON (SAL)</b>	<i>Salmo salar</i>
<b>BLUEFISH (BLUE)</b>	<i>Pomatomus saltatrix</i>
<b>FLUKE - SCUP - BLACK SEA BASS (FSB)</b>	
Black sea bass	<i>Centropristis striata</i>
Fluke	<i>Paralichthys dentatus</i>
Scup	<i>Stenotomus chrysops</i>
<b>HERRING, ATLANTIC (HERR)</b>	<i>Clupea harengus</i>
<b>LARGE MESH GROUND FISH (GFL)</b>	
American plaice	<i>Hippoglossoides platessoides</i>
Atlantic cod	<i>Gadus morhua</i>
Atlantic halibut	<i>Hippoglossus hippoglossus</i>
Atlantic wolffish	<i>Anarhichas lupus</i>
Haddock	<i>Melanogrammus aeglefinus</i>
Ocean pout	<i>Zoarces americanus</i>
Pollock	<i>Pollachius virens</i>
Redfish	<i>Sebastes fasciatus</i>
White hake	<i>Urophycis tenuis</i>
Windowpane flounder	<i>Scophthalmus aquosus</i>
Winter flounder	<i>Pseudopleuronectes americanus</i>
Witch flounder	<i>Glyptocephalus cynoglossus</i>
Yellowtail flounder	<i>Limanda ferruginea</i>
<b>MONKFISH (MONK)</b>	<i>Lophius americanus</i>
<b>RED DEEPSEA CRAB (RCRAB)<sup>20</sup></b>	<i>Chaceon quinquegens</i>
<b>SEA SCALLOP (SCAL)</b>	<i>Placopecten magellanicus</i>
<b>SKATE COMPLEX<sup>21</sup> (SKATE)</b>	Rajidae
Barndoor skate	<i>Dipturus laevis</i>
Clearnose skate	<i>Raja eglanteria</i>
Little skate	<i>Leucoraja erinacea</i>
Rosette skate	<i>Leucoraja garmani</i>
Smooth skate	<i>Malacoraja senta</i>
Thorny skate	<i>Amblyraja radiata</i>
Winter skate	<i>Leucoraja ocellata</i>
<b>SMALL MESH GROUND FISH (GFS)</b>	
Offshore hake	<i>Merluccius albidus</i>
Red hake	<i>Urophycis chuss</i>
Silver hake	<i>Merluccius bilinearis</i>
<b>SPINY DOGFISH (DOG)</b>	<i>Squalus acanthias</i>
<b>SQUID<sup>22</sup> - BUTTERFISH - MACKEREL (SBM)</b>	
Atlantic mackerel	<i>Scomber scombrus</i>
Butterfish	<i>Peprilus triacanthus</i>
Northern shortfin squid	<i>Illex illecebrosus</i>
Longfin inshore squid	<i>Doryteuthis (Amerigo) pealeii</i>
<b>SURFLAM - OCEAN QUAHOG (SCOQ)<sup>23</sup></b>	
Surflam	<i>Spisula solidissima</i>
Ocean quahog	<i>Arctica islandica</i>
<b>TILEFISH (TILE)</b>	<i>Lopholatilus chamaeleonticeps</i>

<sup>20</sup> In previous documents (e.g., Wigley et al. 2014; Wigley et al. 2013) red deepsea crab was referred to as red crab.

<sup>21</sup> Skate complex is composed of 7 species as well as skate, unknown, and little/winter mixed skate. Individual species are not summarized separately.

<sup>22</sup> Squid, unclassified is included in this species group. Longfin inshore squid and northern shortfin squid are also known as Loligo squid and Illex squid, respectively.

<sup>23</sup> In this analysis, surfclams and ocean quahogs compose the species group and are not reported separately.

**Table 2. Number of Northeast Fisheries Observer Program (NEFOP) and Vessel Trip Report (VTR) trips, by fleet and calendar quarter (Q) based on July 2015 through June 2016 data. "P" indicates fleets with "pilot" designation.**

FLEET						NEFOP					VTR					
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
1	Longline	OPEN	all	MA	all	2	1	2	3	8	50	47	24	42	163	
2	Longline	OPEN	all	NE	all	1	.	.	8	9	554	135	7	156	852	
3	Hand Line	OPEN	all	MA	all	1	1	1	.	3	1,404	627	96	742	2,869	P
4	Hand Line	OPEN	all	NE	all	13	9	1	7	30	1,543	673	33	453	2,702	
5	Otter Trawl	OPEN	all	MA	sm	91	79	92	125	387	1,037	841	532	901	3,311	
6	Otter Trawl	OPEN	all	MA	lg	55	29	41	47	172	1,405	743	816	1,041	4,005	
7	Otter Trawl	OPEN	all	NE	sm	127	62	50	86	325	1,477	771	393	1,332	3,973	
8	Otter Trawl	OPEN	all	NE	lg	238	171	170	155	734	1,835	1,187	1,110	1,307	5,439	
9	Scallop Trawl	AA	GEN	MA	all	.	.	.	6	6	41	.	.	117	158	
10	Scallop Trawl	AA	LIM	MA	all	.	.	.	.	.	.	.	1	.	1	P
11	Scallop Trawl	OPEN	GEN	MA	all	3	1	2	4	10	38	2	1	23	64	
12	Scallop Trawl	OPEN	LIM	MA	all	.	.	.	.	.	.	3	5	.	8	P
13	Otter Trawl, Twin	OPEN	all	MA	all	3	.	2	.	5	47	24	31	31	133	P
14	Otter Trawl, Twin	OPEN	all	NE	all	2	1	.	.	3	7	8	4	3	22	P
15	Otter Trawl, Ruhle	OPEN	all	MA	lg	.	.	.	.	.	.	.	4	.	4	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	.	1	.	.	1	.	6	21	.	27	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	.	.	.	.	.	1	.	1	8	10	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	9	5	6	8	28	46	37	30	58	171	
19	Shrimp Trawl	OPEN	all	MA	all	1	.	.	.	1	55	37	2	6	100	P
20	Shrimp Trawl	OPEN	all	NE	all	.	.	.	.	.	33	3	22	19	77	P
21	Floating Trap	OPEN	all	MA	all	.	.	.	.	.	29	1	.	46	76	P
22	Floating Trap	OPEN	all	NE	all	.	.	.	.	.	15	.	.	.	15	P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	67	50	58	58	233	488	339	528	283	1,638	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	25	85	68	59	237	328	903	546	435	2,212	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	3	40	24	85	152	102	465	299	841	1,707	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	.	.	.	.	.	1	1	.	2	4	P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	286	96	19	59	460	1,385	480	150	599	2,614	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	282	80	14	32	408	1,388	711	379	943	3,421	
29	Purse Seine	OPEN	all	MA	all	.	.	.	.	.	31	.	.	190	221	P
30	Purse Seine	OPEN	all	NE	all	6	1	.	2	9	180	29	.	28	237	

See text for fleet abbreviations.

**Table 2, continued. Number of Northeast Fisheries Observer Program (NEFOP) and Vessel Trip Report (VTR) trips, by fleet and calendar quarter (Q) based on July 2015 through June 2016 data. "P" indicates fleets with "pilot" designation.**

FLEET						NEFOP					VTR						
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
31	Scallop	Dredge	AA	GEN	MA	all	28	1	3	58	90	655	19	15	1,361	2,050	
32	Scallop	Dredge	AA	GEN	NE	all	.	.	.	37	37	4	9	1	416	430	
33	Scallop	Dredge	AA	LIM	MA	all	18	14	3	32	67	178	118	32	219	547	
34	Scallop	Dredge	AA	LIM	NE	all	26	21	6	35	88	232	181	35	177	625	
35	Scallop	Dredge	OPEN	GEN	MA	all	22	20	29	9	80	734	390	347	407	1,878	
36	Scallop	Dredge	OPEN	GEN	NE	all	23	19	32	17	91	554	508	1,028	816	2,906	
37	Scallop	Dredge	OPEN	LIM	MA	all	11	2	6	21	40	152	61	57	179	449	
38	Scallop	Dredge	OPEN	LIM	NE	all	27	8	24	45	104	297	101	181	354	933	
39	Danish Seine		OPEN	all	MA	all	.	.	.	.	.	16	1	.	28	45	P
40	Mid-water Paired & Single Trawl	AA		all	NE	all	5	.	.	2	7	5	.	.	3	8	
41	Mid-water Paired & Single Trawl	OPEN		all	MA	all	.	.	.	.	.	.	1	10	.	11	P
42	Mid-water Paired & Single Trawl	OPEN		all	NE	all	1	5	5	7	18	79	125	97	63	364	
43	Pots and Traps, Fish		OPEN	all	MA	all	4	3	.	4	11	234	155	50	238	677	
44	Pots and Traps, Fish		OPEN	all	NE	all	14	.	.	2	16	410	36	1	150	597	
45	Pots and Traps, Conch		OPEN	all	MA	all	2	13	.	13	28	188	602	77	282	1,149	
46	Pots and Traps, Conch		OPEN	all	NE	all	8	7	.	3	18	421	516	.	360	1,297	
47	Pots and Traps, Hagfish		OPEN	all	NE	all	.	.	.	.	.	13	11	6	9	39	P
48	Pots and Traps, Lobster		OPEN	all	MA	all	5	4	.	7	16	672	344	146	322	1,484	
49	Pots and Traps, Lobster		OPEN	all	NE	all	114	82	25	4	225	12,210	8,723	1,989	5,034	27,956	
50	Pots and Traps, Crab		OPEN	all	MA	all	.	.	.	.	.	9	16	2	25	52	P
51	Pots and Traps, Crab		OPEN	all	NE	all	.	.	.	.	.	13	16	11	9	49	P
52	Beam Trawl		OPEN	all	MA	all	.	.	.	.	.	42	13	19	35	109	P
53	Beam Trawl		OPEN	all	NE	all	.	.	.	.	.	66	6	7	23	102	P
54	Dredge, Other		OPEN	all	MA	all	.	.	.	.	.	.	95	180	30	305	P
55	Ocean Quahog/Surfclam Dredge		OPEN	all	MA	all	2	6	8	6	22	446	412	419	481	1,758	
56	Ocean Quahog/Surfclam Dredge		OPEN	all	NE	all	7	8	5	3	23	742	417	404	612	2,175	
<b>Total</b>							1,532	925	696	1,049	4,202	31,892	20,949	10,149	21,239	84,229	

See text for fleet abbreviations.

**Table 3. Number of Northeast Fisheries Observer Program (NEFOP) and Vessel Trip Report (VTR) sea days, by fleet and calendar quarter (Q) based on July 2015 through June 2016 data. "P" indicates fleets with "pilot" designation.**

FLEET						NEFOP					VTR					
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
1	Longline	OPEN	all	MA	all	11	12	25	26	<b>74</b>	404	290	222	330	<b>1,246</b>	
2	Longline	OPEN	all	NE	all	1	.	.	9	<b>10</b>	554	135	12	160	<b>861</b>	
3	Hand Line	OPEN	all	MA	all	1	1	12	.	<b>14</b>	1,626	687	114	774	<b>3,201</b>	P
4	Hand Line	OPEN	all	NE	all	52	9	1	9	<b>71</b>	1,845	790	33	518	<b>3,186</b>	
5	Otter Trawl	OPEN	all	MA	sm	177	215	363	222	<b>977</b>	1,768	1,684	2,174	1,413	<b>7,039</b>	
6	Otter Trawl	OPEN	all	MA	lg	98	83	158	103	<b>442</b>	2,217	2,058	3,168	1,867	<b>9,310</b>	
7	Otter Trawl	OPEN	all	NE	sm	309	257	229	256	<b>1,051</b>	3,679	1,925	1,746	3,093	<b>10,443</b>	
8	Otter Trawl	OPEN	all	NE	lg	802	609	661	416	<b>2,488</b>	4,546	3,587	3,931	3,814	<b>15,878</b>	
9	Scallop Trawl	AA	GEN	MA	all	.	.	.	14	<b>14</b>	84	.	.	251	<b>335</b>	
10	Scallop Trawl	AA	LIM	MA	all	.	.	.	.	.	.	.	4	.	<b>4</b>	P
11	Scallop Trawl	OPEN	GEN	MA	all	7	1	3	4	<b>15</b>	75	5	2	42	<b>124</b>	
12	Scallop Trawl	OPEN	LIM	MA	all	.	.	.	.	.	.	17	26	.	<b>43</b>	P
13	Otter Trawl, Twin	OPEN	all	MA	all	4	.	10	.	<b>14</b>	50	73	144	43	<b>310</b>	P
14	Otter Trawl, Twin	OPEN	all	NE	all	17	8	.	.	<b>25</b>	56	70	25	20	<b>171</b>	P
15	Otter Trawl, Ruhle	OPEN	all	MA	lg	.	.	.	.	.	.	.	5	.	<b>5</b>	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	.	4	.	.	<b>4</b>	.	16	42	.	<b>58</b>	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	.	.	.	.	.	8	.	2	64	<b>74</b>	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	81	38	53	62	<b>234</b>	407	315	250	489	<b>1,461</b>	
19	Shrimp Trawl	OPEN	all	MA	all	5	.	.	.	<b>5</b>	248	237	11	35	<b>531</b>	P
20	Shrimp Trawl	OPEN	all	NE	all	.	.	.	.	.	45	21	32	24	<b>122</b>	P
21	Floating Trap	OPEN	all	MA	all	.	.	.	.	.	29	1	.	46	<b>76</b>	P
22	Floating Trap	OPEN	all	NE	all	.	.	.	.	.	15	.	.	.	<b>15</b>	P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	81	50	59	73	<b>263</b>	491	340	534	286	<b>1,651</b>	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	33	85	69	60	<b>247</b>	382	914	551	438	<b>2,285</b>	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	7	49	31	95	<b>182</b>	118	547	376	965	<b>2,006</b>	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	.	.	.	.	.	1	1	.	2	<b>4</b>	P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	408	149	41	74	<b>672</b>	1,886	902	357	858	<b>4,003</b>	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	370	112	28	57	<b>567</b>	1,728	934	788	1,657	<b>5,107</b>	
29	Purse Seine	OPEN	all	MA	all	.	.	.	.	.	33	.	.	190	<b>223</b>	P
30	Purse Seine	OPEN	all	NE	all	14	3	.	5	<b>22</b>	383	69	.	72	<b>524</b>	

See text for fleet abbreviations.

**Table 3, continued. Number of Northeast Fisheries Observer Program (NEFOP) and Vessel Trip Report (VTR) sea days, by fleet and calendar quarter (Q) based on July 2015 through June 2016 data. "P" indicates fleets with "pilot" designation.**

FLEET						NEFOP					VTR						
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
31	Scallop	Dredge	AA	GEN	MA	all	49	3	7	116	175	1,104	46	42	2,602	3,794	
32	Scallop	Dredge	AA	GEN	NE	all	.	.	.	72	72	12	26	3	808	849	
33	Scallop	Dredge	AA	LIM	MA	all	115	99	21	280	515	1,177	848	207	1,767	3,999	
34	Scallop	Dredge	AA	LIM	NE	all	185	152	57	300	694	1,657	1,364	278	1,481	4,780	
35	Scallop	Dredge	OPEN	GEN	MA	all	38	43	64	16	161	1,452	921	801	755	3,929	
36	Scallop	Dredge	OPEN	GEN	NE	all	39	38	60	30	167	880	797	1,413	1,154	4,244	
37	Scallop	Dredge	OPEN	LIM	MA	all	116	19	42	238	415	1,416	411	338	1,831	3,996	
38	Scallop	Dredge	OPEN	LIM	NE	all	259	84	193	466	1,002	2,908	786	1,498	3,688	8,880	
39	Danish Seine		OPEN	all	MA	all	.	.	.	.	.	19	1	.	29	49	P
40	Mid-water Paired & Single Trawl	AA		all	NE	all	25	.	.	8	33	25	.	.	10	35	
41	Mid-water Paired & Single Trawl	OPEN		all	MA	all	.	.	.	.	.	.	3	42	.	45	P
42	Mid-water Paired & Single Trawl	OPEN		all	NE	all	5	13	17	27	62	353	347	229	241	1,170	
43	Pots and Traps, Fish		OPEN	all	MA	all	4	3	.	4	11	252	170	51	244	717	
44	Pots and Traps, Fish		OPEN	all	NE	all	14	.	.	2	16	413	44	1	159	617	
45	Pots and Traps, Conch		OPEN	all	MA	all	2	13	.	13	28	188	612	81	284	1,165	
46	Pots and Traps, Conch		OPEN	all	NE	all	8	7	.	3	18	422	516	.	360	1,298	
47	Pots and Traps, Hagfish		OPEN	all	NE	all	.	.	.	.	.	114	90	37	84	325	P
48	Pots and Traps, Lobster		OPEN	all	MA	all	5	5	.	9	19	818	430	180	406	1,834	
49	Pots and Traps, Lobster		OPEN	all	NE	all	271	183	27	4	485	14,657	11,094	3,815	6,827	36,393	
50	Pots and Traps, Crab		OPEN	all	MA	all	.	.	.	.	.	49	19	12	69	149	P
51	Pots and Traps, Crab		OPEN	all	NE	all	.	.	.	.	.	92	147	88	31	358	P
52	Beam Trawl		OPEN	all	MA	all	.	.	.	.	.	74	37	73	69	253	P
53	Beam Trawl		OPEN	all	NE	all	.	.	.	.	.	79	6	7	23	115	P
54	Dredge, Other		OPEN	all	MA	all	.	.	.	.	.	.	95	180	39	314	P
55	Ocean Quahog/Surfclam Dredge		OPEN	all	MA	all	5	18	24	19	66	688	724	714	1,021	3,147	
56	Ocean Quahog/Surfclam Dredge		OPEN	all	NE	all	19	25	18	9	71	855	533	549	885	2,822	
<b>Total</b>							3,637	2,390	2,273	3,101	11,401	52,382	35,685	25,188	42,317	155,573	

See text for fleet abbreviations.

**Table 4. Vessel Trip Report kept weight of all species (live mt), percentage of kept weight of all species across all fleets, kept weight of all species (live mt) with Northeast Fisheries Observer Program (NEFOP) coverage from statistical areas and quarters with at least 1 observed trip and at least 3 observed trips in the fleet and quarter, and percentage of kept weight of all species with observer coverage, by fleet based on July 2015 through June 2016 data.**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Kept Weight (mt)	Percentage of Kept Weight	Kept Weight with NEFOP coverage (mt)	Percentage of Kept Weight with NEFOP coverage
1	Longline	OPEN	all	MA	all	542	0.1	136	25.1
2	Longline	OPEN	all	NE	all	1,469	0.3	40	2.7
3	Hand Line	OPEN	all	MA	all	224	<0.1	0	0.0
4	Hand Line	OPEN	all	NE	all	1,205	0.2	587	48.7
5	Otter Trawl	OPEN	all	MA	sm	11,523	2.1	10,651	92.4
6	Otter Trawl	OPEN	all	MA	lg	7,383	1.4	6,576	89.1
7	Otter Trawl	OPEN	all	NE	sm	24,158	4.5	23,635	97.8
8	Otter Trawl	OPEN	all	NE	lg	22,936	4.2	22,803	99.4
9	Scallop Trawl	AA	GEN	MA	all	350	0.1	256	73.3
11	Scallop Trawl	OPEN	GEN	MA	all	43	<0.1	22	52.1
12	Scallop Trawl	OPEN	LIM	MA	all	30	<0.1	0	0.0
13	Otter Trawl, Twin	OPEN	all	MA	all	931	0.2	60	6.4
14	Otter Trawl, Twin	OPEN	all	NE	all	438	0.1	0	0.0
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	583	0.1	0	0.0
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	38	<0.1	0	0.0
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1,884	0.3	1,840	97.7
19	Shrimp Trawl	OPEN	all	MA	all	273	0.1	0	0.0
20	Shrimp Trawl	OPEN	all	NE	all	107	<0.1	0	0.0
22	Floating Trap	OPEN	all	NE	all	2	<0.1	0	0.0
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	1,723	0.3	1,686	97.8
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	3,041	0.6	2,843	93.5
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	2,576	0.5	2,506	97.3
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	1	<0.1	0	0.0
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	3,358	0.6	3,130	93.2
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	8,556	1.6	8,240	96.3
29	Purse Seine	OPEN	all	MA	all	18,946	3.5	0	0.0
30	Purse Seine	OPEN	all	NE	all	25,340	4.7	16,288	64.3
31	Scallop Dredge	AA	GEN	MA	all	4,974	0.9	4,835	97.2
32	Scallop Dredge	AA	GEN	NE	all	1,089	0.2	938	86.2
33	Scallop Dredge	AA	LIM	MA	all	25,863	4.8	25,640	99.1
34	Scallop Dredge	AA	LIM	NE	all	32,870	6.1	32,569	99.1
35	Scallop Dredge	OPEN	GEN	MA	all	3,096	0.6	2,622	84.7
36	Scallop Dredge	OPEN	GEN	NE	all	3,132	0.6	2,728	87.1
37	Scallop Dredge	OPEN	LIM	MA	all	17,714	3.3	14,950	84.4
38	Scallop Dredge	OPEN	LIM	NE	all	46,770	8.6	42,524	90.9
39	Danish Seine	OPEN	all	MA	all	1,050	0.2	0	0.0
40	Mid-water Paired & Single Trawl	AA	all	NE	all	1,277	0.2	776	60.8
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	41,636	7.7	23,749	57.0
43	Pots and Traps, Fish	OPEN	all	MA	all	195	<0.1	63	32.2

**Table 4, continued. Vessel Trip Report kept weight of all species (live mt), percentage of kept weight of all species across all fleets, kept weight of all species (live mt) with Northeast Fisheries Observer Program (NEFOP) coverage from statistical areas and quarters with at least 1 observed trip and at least 3 observed trips in the fleet and quarter, and percentage of kept weight of all species with observer coverage, by fleet based on July 2015 through June 2016 data.**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Kept Weight (mt)	Percentage of Kept Weight	Kept Weight with NEFOP coverage (mt)	Percentage of Kept Weight with NEFOP coverage
44	Pots and Traps, Fish	OPEN	all	NE	all	127	<0.1	66	51.8
45	Pots and Traps, Conch	OPEN	all	MA	all	720	0.1	519	72.1
46	Pots and Traps, Conch	OPEN	all	NE	all	366	0.1	314	85.8
47	Pots and Traps, Hagfish	OPEN	all	NE	all	808	0.1	0	0.0
48	Pots and Traps, Lobster	OPEN	all	MA	all	762	0.1	221	29.1
49	Pots and Traps, Lobster	OPEN	all	NE	all	14,118	2.6	10,881	77.1
50	Pots and Traps, Crab	OPEN	all	MA	all	154	<0.1	0	0.0
51	Pots and Traps, Crab	OPEN	all	NE	all	1,199	0.2	0	0.0
52	Beam Trawl	OPEN	all	MA	all	121	<0.1	0	0.0
53	Beam Trawl	OPEN	all	NE	all	113	<0.1	0	0.0
54	Dredge, Other	OPEN	all	MA	all	100	<0.1	0	0.0
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	112,702	20.8	68,248	60.6
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	90,078	16.6	56,557	62.8
Confidential fleets						2,281	0.4	0	0.0
Other minor fleets						791	0.1	0	0.0
<b>Total</b>						<b>541,766</b>	<b>100.0</b>	<b>389,498</b>	<b>71.9</b>

**Table 5A. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: ATLANTIC SALMON (*Salmo salar*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	0	0	0			
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	0	0	0			
8	Otter Trawl	OPEN	all	NE	lg	0	0	0			
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0			
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	0	0	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: ATLANTIC SALMON (*Salmo salar*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	0	0	0			
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: BLUEFISH (*Pomatomus saltatrix*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	290	210	80	1.153	92	
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	107,499	107,499	0			P
4	Hand Line	OPEN	all	NE	all	22,510	22,510	0			
5	Otter Trawl	OPEN	all	MA	sm	168,228	163,538	4,690	0.373	1,750	
6	Otter Trawl	OPEN	all	MA	lg	102,362	102,295	67	0.865	58	
7	Otter Trawl	OPEN	all	NE	sm	95,792	89,239	6,553	0.364	2,388	
8	Otter Trawl	OPEN	all	NE	lg	32,191	28,931	3,260	0.337	1,098	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	20	20	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	683	630	53	0.861	45	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	50	50	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	10	10	0			P
20	Shrimp Trawl	OPEN	all	NE	all	254	254				P
22	Floating Trap	OPEN	all	NE	all	600	600				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	79,298	77,185	2,113	0.303	640	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	694,287	680,625	13,662	0.584	7,978	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	38,899	33,548	5,351	0.315	1,684	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	800	800				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	189,133	187,840	1,293	0.339	438	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	26,604	15,932	10,672	0.174	1,853	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: BLUEFISH (*Pomatomus saltatrix*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	0	0	0			
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	2,338	2,338	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	31	31	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	1,591	1,591	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	226	226	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	772	772				P
53	Beam Trawl	OPEN	all	NE	all	60	60				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfc clam Dredge	OPEN	all	MA	all	333	0	333	1.109	369	
56	Ocean Quahog/Surfc clam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						84,307	84,307				
Other minor fleets						1,884	1,884				
TOTAL						1,651,050	1,602,925	48,125	0.187	8,980	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: FLUKE (*Paralichthys dentatus*) - SCUP (*Stenotomus chrysops*) - BLACK SEA BASS (*Centropristis striata*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	223	150	73	0.732	53	
2	Longline	OPEN	all	NE	all	795	795	0			
3	Hand Line	OPEN	all	MA	all	179,210	179,210	0			P
4	Hand Line	OPEN	all	NE	all	31,268	31,167	101	0.655	66	
5	Otter Trawl	OPEN	all	MA	sm	8,004,679	6,081,619	1,923,060	0.113	217,834	
6	Otter Trawl	OPEN	all	MA	lg	9,226,220	7,899,253	1,326,967	0.195	258,278	
7	Otter Trawl	OPEN	all	NE	sm	6,103,993	4,197,276	1,906,717	0.198	378,458	
8	Otter Trawl	OPEN	all	NE	lg	2,705,249	2,062,684	642,565	0.175	112,443	
9	Scallop Trawl	AA	GEN	MA	all	33,427	1,528	31,899	0.628	20,024	
11	Scallop Trawl	OPEN	GEN	MA	all	21,559	20,982	577	0.486	280	
12	Scallop Trawl	OPEN	LIM	MA	all	22,146	22,146				P
13	Otter Trawl, Twin	OPEN	all	MA	all	18,734	16,258	2,476	0.916	2,269	P
14	Otter Trawl, Twin	OPEN	all	NE	all	15,663	9,562	6,101	0.411	2,508	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	15	15				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	7,079	1,155	5,924	0.963	5,703	
19	Shrimp Trawl	OPEN	all	MA	all	316	316	0			P
20	Shrimp Trawl	OPEN	all	NE	all	2,821	2,821				P
22	Floating Trap	OPEN	all	NE	all	590	590				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	317	77	240	0.283	68	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	12,370	11,808	562	0.237	133	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	31,832	15,244	16,588	0.334	5,541	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	505	505				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	119,234	118,674	560	0.287	160	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	102,117	38,271	63,846	0.328	20,941	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: FLUKE (*Paralichthys dentatus*) - SCUP (*Stenotomus chrysops*) - BLACK SEA BASS (*Centropristis striata*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	15,393	4,296	11,097	0.166	1,843	
32	Scallop Dredge	AA	GEN	NE	all	754	0	754	0.210	158	
33	Scallop Dredge	AA	LIM	MA	all	94,532	5,176	89,356	0.190	17,016	
34	Scallop Dredge	AA	LIM	NE	all	111,994	70	111,924	0.154	17,289	
35	Scallop Dredge	OPEN	GEN	MA	all	64,212	11,867	52,345	0.194	10,151	
36	Scallop Dredge	OPEN	GEN	NE	all	27,423	3,071	24,352	0.372	9,054	
37	Scallop Dredge	OPEN	LIM	MA	all	102,155	9,920	92,235	0.287	26,429	
38	Scallop Dredge	OPEN	LIM	NE	all	163,722	50	163,672	0.220	35,981	
39	Danish Seine	OPEN	all	MA	all	2,961	2,961				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	6,000	6,000	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	396,350	293,436	102,914	0.834	85,810	
44	Pots and Traps, Fish	OPEN	all	NE	all	267,230	160,629	106,601	0.215	22,970	
45	Pots and Traps, Conch	OPEN	all	MA	all	1,900	1,316	584	0.401	234	
46	Pots and Traps, Conch	OPEN	all	NE	all	2,761	250	2,511	0.983	2,468	
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	163,146	118,785	44,361	0.676	29,999	
49	Pots and Traps, Lobster	OPEN	all	NE	all	84,722	25,810	58,912	0.460	27,111	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	120,713	120,713				P
53	Beam Trawl	OPEN	all	NE	all	20,255	20,255				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	18,950	0	18,950	0.367	6,957	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	2,106	0	2,106	0.675	1,422	
Confidential fleets						11,604	11,604				
Other minor fleets						50,731	50,731				
TOTAL						28,369,977	21,559,046	6,810,931	0.078	532,259	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: HERRING, ATLANTIC (*Clupea harengus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	284	284	0			P
4	Hand Line	OPEN	all	NE	all	1,090	817	273	2.135	583	
5	Otter Trawl	OPEN	all	MA	sm	184,271	176,113	8,158	0.492	4,015	
6	Otter Trawl	OPEN	all	MA	lg	4,170	3,095	1,075	0.903	971	
7	Otter Trawl	OPEN	all	NE	sm	5,110,579	4,916,788	193,791	0.317	61,431	
8	Otter Trawl	OPEN	all	NE	lg	19,616	7,800	11,816	0.149	1,765	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	5	0	5	0.879	4	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	11	0	11	1.261	14	P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,272,982	1,272,982	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	9,000	9,000				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	788	0	788	0.330	260	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	40,200	40,200				P
22	Floating Trap	OPEN	all	NE	all	1,066	1,066				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	351	351	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	70	70	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	45	45	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	454	0	454	0.338	154	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	11	0	11	0.777	8	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	55,868,602	55,865,565	3,037	1.127	3,422	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: HERRING, ATLANTIC (*Clupea harengus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	9	0	9	0.775	7	
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	16	0	16	0.604	10	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	2,812,872	2,812,675	197	0.411	81	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	85,410,882	85,410,628	254	0.536	136	
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	30	0	30	0.532	16	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	209,510	209,510				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						3,077,000	3,077,000				
Other minor fleets						28,435	28,435				
TOTAL						154,052,349	153,832,424	219,925	0.281	61,694	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: LARGE MESH GROUND FISH**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	29	29	0			
2	Longline	OPEN	all	NE	all	138,533	56,042	82,491	0.369	30,408	
3	Hand Line	OPEN	all	MA	all	4,839	4,839	0			P
4	Hand Line	OPEN	all	NE	all	260,035	182,549	77,486	1.341	103,901	
5	Otter Trawl	OPEN	all	MA	sm	337,578	3,066	334,512	0.119	39,915	
6	Otter Trawl	OPEN	all	MA	lg	1,113,004	452,224	660,780	0.165	108,960	
7	Otter Trawl	OPEN	all	NE	sm	950,869	14,434	936,435	0.223	208,728	
8	Otter Trawl	OPEN	all	NE	lg	31,515,033	29,299,598	2,215,435	0.114	252,400	
9	Scallop Trawl	AA	GEN	MA	all	211	0	211	0.928	196	
11	Scallop Trawl	OPEN	GEN	MA	all	1,047	0	1,047	0.636	666	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	4,387	2,778	1,609	0.735	1,182	P
14	Otter Trawl, Twin	OPEN	all	NE	all	29,079	27,930	1,149	0.518	595	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	5	5	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	74,813	74,813				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	5,019,318	3,991,152	1,028,166	0.285	292,777	
19	Shrimp Trawl	OPEN	all	MA	all	5,479	0	5,479	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	217	29	188	0.314	59	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	2,118	828	1,290	0.228	294	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	1,406	1,102	304	0.481	146	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	566	566				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	2,634,591	2,476,903	157,688	0.125	19,676	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	156,406	50,671	105,735	0.201	21,271	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: LARGE MESH GROUND FISH**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	1,411	0	1,411	0.256	361	
32	Scallop Dredge	AA	GEN	NE	all	1,675	0	1,675	0.123	207	
33	Scallop Dredge	AA	LIM	MA	all	5,738	5	5,733	0.218	1,249	
34	Scallop Dredge	AA	LIM	NE	all	4,230	0	4,230	0.246	1,040	
35	Scallop Dredge	OPEN	GEN	MA	all	35,726	34	35,692	0.145	5,190	
36	Scallop Dredge	OPEN	GEN	NE	all	76,103	0	76,103	0.156	11,907	
37	Scallop Dredge	OPEN	LIM	MA	all	26,302	124	26,178	0.229	6,002	
38	Scallop Dredge	OPEN	LIM	NE	all	644,934	2,397	642,537	0.115	73,662	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	3,070	2,465	605	0.477	289	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	33,666	33,445	221	0.805	178	
43	Pots and Traps, Fish	OPEN	all	MA	all	6,878	523	6,355	0.501	3,182	
44	Pots and Traps, Fish	OPEN	all	NE	all	290	290	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	4,066	1,218	2,848	0.394	1,121	
49	Pots and Traps, Lobster	OPEN	all	NE	all	122,818	1,048	121,770	0.522	63,616	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	108	108				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	1,282	0	1,282	0.441	566	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	6,704	0	6,704	0.361	2,418	
	Confidential fleets					0	0				
	Other minor fleets					497	497				
	<b>TOTAL</b>					<b>43,225,059</b>	<b>36,681,712</b>	<b>6,543,347</b>	<b>0.073</b>	<b>478,244</b>	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: MONKFISH (*Lophius americanus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	876	7	869	1.825	1,586	
2	Longline	OPEN	all	NE	all	191	191	0			
3	Hand Line	OPEN	all	MA	all	207	207	0			P
4	Hand Line	OPEN	all	NE	all	4,464	4,464	0			
5	Otter Trawl	OPEN	all	MA	sm	281,426	74,087	207,339	0.214	44,470	
6	Otter Trawl	OPEN	all	MA	lg	668,015	291,658	376,357	0.201	75,522	
7	Otter Trawl	OPEN	all	NE	sm	396,020	105,746	290,275	0.481	139,537	
8	Otter Trawl	OPEN	all	NE	lg	8,498,620	7,389,963	1,108,657	0.108	119,594	
9	Scallop Trawl	AA	GEN	MA	all	26,895	967	25,928	0.511	13,252	
11	Scallop Trawl	OPEN	GEN	MA	all	2,812	390	2,422	0.408	989	
12	Scallop Trawl	OPEN	LIM	MA	all	116	116				P
13	Otter Trawl, Twin	OPEN	all	MA	all	22,415	9,412	13,003	0.112	1,458	P
14	Otter Trawl, Twin	OPEN	all	NE	all	17,573	1,992	15,581	0.262	4,086	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	6,365	0	6,365	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	452	452				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	66,164	63,750	2,414	0.316	763	
19	Shrimp Trawl	OPEN	all	MA	all	17,482	498	16,984	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	616	616				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	1,901	1,901	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	15,129	14,858	271	0.626	170	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	3,272,566	3,206,515	66,052	0.163	10,794	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	15	15				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	263,053	251,110	11,943	0.185	2,208	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	4,973,266	4,672,038	301,228	0.150	45,285	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: MONKFISH (*Lophius americanus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	82,163	9,986	72,177	0.124	8,984	
32	Scallop Dredge	AA	GEN	NE	all	19,091	1,214	17,877	0.096	1,724	
33	Scallop Dredge	AA	LIM	MA	all	332,331	13,839	318,491	0.116	36,890	
34	Scallop Dredge	AA	LIM	NE	all	391,620	16,741	374,879	0.121	45,468	
35	Scallop Dredge	OPEN	GEN	MA	all	195,874	71,476	124,397	0.170	21,104	
36	Scallop Dredge	OPEN	GEN	NE	all	193,611	32,507	161,104	0.164	26,441	
37	Scallop Dredge	OPEN	LIM	MA	all	935,547	90,063	845,484	0.099	83,364	
38	Scallop Dredge	OPEN	LIM	NE	all	2,764,432	377,267	2,387,166	0.150	357,427	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	18	18	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	16,600	16,600	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	466	388	78	0.508	40	
49	Pots and Traps, Lobster	OPEN	all	NE	all	1,443	283	1,160	0.353	409	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	1,111	1,111				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	125,219	4,550	120,669	0.401	48,403	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	52,003	3,332	48,671	0.370	17,993	
	Confidential fleets					246	246				
	Other minor fleets					4,565	4,565				
	<b>TOTAL</b>					<b>23,652,980</b>	<b>16,735,138</b>	<b>6,917,842</b>	<b>0.062</b>	<b>431,106</b>	

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: RED DEEPSEA CRAB (*Chaceon quinquegens*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	14,408	0	14,408	0.520	7,488	
6	Otter Trawl	OPEN	all	MA	lg	5,694	0	5,694	1.169	6,656	
7	Otter Trawl	OPEN	all	NE	sm	0	0	0			
8	Otter Trawl	OPEN	all	NE	lg	77,154	0	77,154	0.530	40,923	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	82,181	0	82,181	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	61	0	61	0.377	23	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	0	0	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: RED DEEPSEA CRAB (*Chaceon quinquegens*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	19	0	19	0.954	18	
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	200	0	200	0.954	191	
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	10	0	10	0.951	9	
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	0	0	0			
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	45,216	45,216	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	151,429	100,684	50,745	0.432	21,934	
50	Pots and Traps, Crab	OPEN	all	MA	all	312,429	312,429				P
51	Pots and Traps, Crab	OPEN	all	NE	all	2,540,660	2,540,660				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>3,229,461</b>	<b>2,998,989</b>	<b>230,472</b>	<b>0.206</b>	<b>47,500</b>	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SEA SCALLOP (*Placopecten magellanicus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	175	0	175	0.897	157	
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	17	0	17	6.030	103	
5	Otter Trawl	OPEN	all	MA	sm	246,649	10,379	236,270	0.248	58,697	
6	Otter Trawl	OPEN	all	MA	lg	1,474,927	1,168,391	306,536	0.403	123,413	
7	Otter Trawl	OPEN	all	NE	sm	17,658	2,816	14,843	0.470	6,970	
8	Otter Trawl	OPEN	all	NE	lg	100,461	61,079	39,382	0.309	12,186	
9	Scallop Trawl	AA	GEN	MA	all	1,114,212	767,718	346,494	0.287	99,513	
11	Scallop Trawl	OPEN	GEN	MA	all	57,455	49,522	7,933	0.589	4,673	
12	Scallop Trawl	OPEN	LIM	MA	all	12,079	12,079				P
13	Otter Trawl, Twin	OPEN	all	MA	all	267,276	267,276	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	22	0	22	0.671	15	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	3,216	2,249	967	1.177	1,138	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	125	125				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	1	0	1	1.083	1	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	1,806	0	1,806	0.366	661	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	80	0	80	0.560	45	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,175	325	850	0.491	418	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SEA SCALLOP (*Placopecten magellanicus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	12,867,107	10,937,191	1,929,916	0.159	307,229	
32	Scallop Dredge	AA	GEN	NE	all	2,532,559	2,403,620	128,939	0.186	24,022	
33	Scallop Dredge	AA	LIM	MA	all	62,552,248	56,520,745	6,031,504	0.161	970,559	
34	Scallop Dredge	AA	LIM	NE	all	78,857,596	72,374,888	6,482,707	0.147	955,342	
35	Scallop Dredge	OPEN	GEN	MA	all	7,128,166	6,710,270	417,896	0.278	116,220	
36	Scallop Dredge	OPEN	GEN	NE	all	6,980,013	6,689,441	290,572	0.265	77,009	
37	Scallop Dredge	OPEN	LIM	MA	all	41,791,160	39,428,190	2,362,970	0.227	536,355	
38	Scallop Dredge	OPEN	LIM	NE	all	106,422,154	102,800,955	3,621,199	0.186	674,006	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	10,088	10,088	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	46,831	46,831				P
53	Beam Trawl	OPEN	all	NE	all	13,403	13,403				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	951,818	600,918	350,900	0.408	143,074	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	1,289,872	1,148,457	141,415	0.833	117,789	
	Confidential fleets					0	0				
	Other minor fleets					261,461	261,461				
	TOTAL					325,001,810	302,288,416	22,713,394	0.073	1,665,585	

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SKATE COMPLEX (*Rajidae*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	193,639	812	192,827	0.347	66,929	
2	Longline	OPEN	all	NE	all	118,119	6,214	111,905	0.319	35,738	
3	Hand Line	OPEN	all	MA	all	5	5	0			P
4	Hand Line	OPEN	all	NE	all	5,781	5,781	0			
5	Otter Trawl	OPEN	all	MA	sm	10,003,717	555,776	9,447,941	0.137	1,298,618	
6	Otter Trawl	OPEN	all	MA	lg	23,963,989	4,939,143	19,024,846	0.132	2,509,527	
7	Otter Trawl	OPEN	all	NE	sm	2,044,588	280,829	1,763,759	0.212	374,399	
8	Otter Trawl	OPEN	all	NE	lg	39,171,423	9,504,113	29,667,310	0.113	3,351,659	
9	Scallop Trawl	AA	GEN	MA	all	488,169	700	487,469	0.510	248,697	
11	Scallop Trawl	OPEN	GEN	MA	all	98,369	23,634	74,735	0.484	36,145	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	185,373	35,227	150,147	1.170	175,736	P
14	Otter Trawl, Twin	OPEN	all	NE	all	17,135	0	17,135	0.290	4,967	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	471,879	69,447	402,432	0.216	86,909	
19	Shrimp Trawl	OPEN	all	MA	all	82	0	82	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	2,663	827	1,835	0.217	398	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	143,914	80,854	63,060	0.132	8,317	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	3,407,228	2,326,527	1,080,702	0.124	133,670	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	456,646	294,596	162,050	0.127	20,624	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	15,050,413	12,866,745	2,183,668	0.168	367,293	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SKATE COMPLEX (Rajidae)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	259,216	196	259,020	0.143	36,992	
32	Scallop Dredge	AA	GEN	NE	all	35,923	1	35,922	0.198	7,125	
33	Scallop Dredge	AA	LIM	MA	all	929,027	68	928,959	0.145	134,584	
34	Scallop Dredge	AA	LIM	NE	all	1,218,752	0	1,218,752	0.108	131,161	
35	Scallop Dredge	OPEN	GEN	MA	all	1,957,590	29,090	1,928,500	0.090	173,438	
36	Scallop Dredge	OPEN	GEN	NE	all	903,844	41	903,803	0.197	177,830	
37	Scallop Dredge	OPEN	LIM	MA	all	4,287,529	2,004	4,285,525	0.085	365,241	
38	Scallop Dredge	OPEN	LIM	NE	all	8,921,993	3,030	8,918,963	0.103	922,912	
39	Danish Seine	OPEN	all	MA	all	2,200	2,200				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	9	9	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	192	46	146	0.552	81	
49	Pots and Traps, Lobster	OPEN	all	NE	all	1,397	0	1,397	0.606	847	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	39,199	39,199				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	579,024	0	579,024	0.200	115,749	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	902,751	0	902,751	0.272	245,322	
	Confidential fleets					1,876	1,876				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>115,863,655</b>	<b>31,068,989</b>	<b>84,794,666</b>	<b>0.054</b>	<b>4,558,043</b>	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SMALL MESH GROUND FISH**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	940	283	657	0.605	397	
2	Longline	OPEN	all	NE	all	284	4	280	0.897	252	
3	Hand Line	OPEN	all	MA	all	809	809	0			P
4	Hand Line	OPEN	all	NE	all	1,657	1,544	113	6.030	684	
5	Otter Trawl	OPEN	all	MA	sm	3,047,318	2,741,810	305,508	0.337	102,928	
6	Otter Trawl	OPEN	all	MA	lg	141,037	76,456	64,581	0.316	20,407	
7	Otter Trawl	OPEN	all	NE	sm	12,071,053	9,844,990	2,226,063	0.230	510,992	
8	Otter Trawl	OPEN	all	NE	lg	1,328,908	567,955	760,953	0.151	114,628	
9	Scallop Trawl	AA	GEN	MA	all	154	0	154	0.663	102	
11	Scallop Trawl	OPEN	GEN	MA	all	282	0	282	0.835	236	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	3,527	545	2,982	0.112	334	P
14	Otter Trawl, Twin	OPEN	all	NE	all	34,068	3,520	30,548	0.257	7,853	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	12,620	0	12,620	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	65	65				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	26,821	3,208	23,613	0.345	8,140	
19	Shrimp Trawl	OPEN	all	MA	all	39,445	820	38,625	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	20,485	20,485				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	126	126	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	323	323	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	191	41	150	0.658	99	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	400	400				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	105,267	87,751	17,516	0.169	2,952	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	17,428	11,942	5,486	0.195	1,068	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SMALL MESH GROUND FISH**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	2,075	0	2,075	0.326	675	
32	Scallop Dredge	AA	GEN	NE	all	765	0	765	0.206	158	
33	Scallop Dredge	AA	LIM	MA	all	4,970	0	4,970	0.225	1,119	
34	Scallop Dredge	AA	LIM	NE	all	3,240	0	3,240	0.201	653	
35	Scallop Dredge	OPEN	GEN	MA	all	6,550	3	6,547	0.791	5,180	
36	Scallop Dredge	OPEN	GEN	NE	all	9,149	0	9,149	0.333	3,050	
37	Scallop Dredge	OPEN	LIM	MA	all	20,855	0	20,855	0.318	6,635	
38	Scallop Dredge	OPEN	LIM	NE	all	160,091	0	160,091	0.205	32,855	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	450	450	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	1,052	1,052	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	41	41	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	12,215	9,127	3,088	2.376	7,337	
49	Pots and Traps, Lobster	OPEN	all	NE	all	115,876	12,264	103,612	0.910	94,290	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	145	145				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	230	0	230	0.999	230	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	445	0	445	0.702	312	
	Confidential fleets					0	0				
	Other minor fleets					204,366	204,366				
	TOTAL					17,395,723	13,590,525	3,805,198	0.143	543,607	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SPINY DOGFISH (*Squalus acanthias*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	251,600	208,627	42,973	0.497	21,353	
2	Longline	OPEN	all	NE	all	3,686,535	3,168,519	518,016	0.531	274,945	
3	Hand Line	OPEN	all	MA	all	30	30	0			P
4	Hand Line	OPEN	all	NE	all	553,622	549,299	4,323	2.944	12,728	
5	Otter Trawl	OPEN	all	MA	sm	2,563,013	304,160	2,258,853	0.180	406,481	
6	Otter Trawl	OPEN	all	MA	lg	1,821,436	195,156	1,626,280	0.191	311,109	
7	Otter Trawl	OPEN	all	NE	sm	1,581,435	216,820	1,364,615	0.218	296,885	
8	Otter Trawl	OPEN	all	NE	lg	3,912,473	376,446	3,536,027	0.106	373,871	
9	Scallop Trawl	AA	GEN	MA	all	277,811	0	277,811	0.666	185,100	
11	Scallop Trawl	OPEN	GEN	MA	all	2,804	0	2,804	0.724	2,030	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	2,688	0	2,688	0.112	301	P
14	Otter Trawl, Twin	OPEN	all	NE	all	3,035	0	3,035	0.255	774	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	125	125				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	109,739	2,680	107,059	0.532	56,929	
19	Shrimp Trawl	OPEN	all	MA	all	5,205	0	5,205	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	2,138,630	2,018,185	120,445	0.441	53,068	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	5,529,753	5,257,224	272,529	0.200	54,415	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	122,989	53,686	69,303	0.138	9,552	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	6,020,426	3,865,328	2,155,098	0.166	358,717	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,332,421	1,170,983	161,438	0.273	44,009	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SPINY DOGFISH (*Squalus acanthias*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	9,211	0	9,211	0.382	3,519	
32	Scallop Dredge	AA	GEN	NE	all	95	0	95	0.571	54	
33	Scallop Dredge	AA	LIM	MA	all	57,577	0	57,577	0.476	27,403	
34	Scallop Dredge	AA	LIM	NE	all	26,303	0	26,303	0.270	7,097	
35	Scallop Dredge	OPEN	GEN	MA	all	13,407	0	13,407	0.257	3,449	
36	Scallop Dredge	OPEN	GEN	NE	all	3,790	0	3,790	0.503	1,905	
37	Scallop Dredge	OPEN	LIM	MA	all	38,168	0	38,168	0.231	8,806	
38	Scallop Dredge	OPEN	LIM	NE	all	51,389	0	51,389	0.207	10,620	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	1,932	0	1,932	0.244	472	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	1,300	1,300	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	9	9	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	2,500	2,500	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	1,447	0	1,447	1.317	1,907	
49	Pots and Traps, Lobster	OPEN	all	NE	all	2,978	10	2,968	0.313	929	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	400	400				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	80,067	0	80,067	0.448	35,848	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	33,550	0	33,550	0.515	17,287	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	TOTAL					30,239,893	17,391,487	12,848,406	0.067	861,828	

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SQUID (*Doryteuthis [Amerigo] pealeii*, *Illex illecebrosus*)- BUTTERFISH (*Peprilus triacanthus*) - MACKEREL (*Scomber scombrus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	5,000	5,000	0			
3	Hand Line	OPEN	all	MA	all	1,303	1,303	0			P
4	Hand Line	OPEN	all	NE	all	1,622,112	1,622,112	0			
5	Otter Trawl	OPEN	all	MA	sm	15,743,387	12,668,110	3,075,277	0.277	851,561	
6	Otter Trawl	OPEN	all	MA	lg	792,854	719,321	73,533	0.330	24,300	
7	Otter Trawl	OPEN	all	NE	sm	35,184,477	32,734,866	2,449,611	0.182	445,316	
8	Otter Trawl	OPEN	all	NE	lg	597,803	538,902	58,901	0.187	11,020	
9	Scallop Trawl	AA	GEN	MA	all	538	0	538	0.752	405	
11	Scallop Trawl	OPEN	GEN	MA	all	56	8	48	1.124	54	
12	Scallop Trawl	OPEN	LIM	MA	all	31,520	31,520				P
13	Otter Trawl, Twin	OPEN	all	MA	all	1,808,765	1,710,266	98,499	0.110	10,860	P
14	Otter Trawl, Twin	OPEN	all	NE	all	1,071,580	913,223	158,357	0.140	22,227	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	54,108	5,000	49,108	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	1	1				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	406	5	401	0.295	118	
19	Shrimp Trawl	OPEN	all	MA	all	77,004	23,038	53,966	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	152,247	152,247				P
22	Floating Trap	OPEN	all	NE	all	2,150	2,150				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	6,122	4,036	2,086	0.772	1,611	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	2,606	2,503	103	0.362	37	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	258	153	105	0.320	34	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	6,732	5,811	921	0.435	400	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,777	1,658	119	0.476	56	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	36	0	36	0.668	24	

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SQUID (*Doryteuthis [Amerigo] pealeii*, *Illex illecebrosus*)- BUTTERFISH (*Peprilus triacanthus*) - MACKEREL (*Scomber scombrus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	279	0	279	0.247	69	
32	Scallop Dredge	AA	GEN	NE	all	13	0	13	0.761	10	
33	Scallop Dredge	AA	LIM	MA	all	3,410	7	3,403	0.237	807	
34	Scallop Dredge	AA	LIM	NE	all	3,138	0	3,138	0.278	872	
35	Scallop Dredge	OPEN	GEN	MA	all	1,041	86	955	0.417	398	
36	Scallop Dredge	OPEN	GEN	NE	all	265	0	265	0.602	159	
37	Scallop Dredge	OPEN	LIM	MA	all	1,906	24	1,882	0.297	558	
38	Scallop Dredge	OPEN	LIM	NE	all	2,064	0	2,064	0.246	507	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	12	11	1	0.244	<1	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	6,005,595	6,005,507	88	0.301	26	
43	Pots and Traps, Fish	OPEN	all	MA	all	9	9	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	989	959	30	0.774	23	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	37,570	37,570				P
53	Beam Trawl	OPEN	all	NE	all	3,863	3,863				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surflclam Dredge	OPEN	all	MA	all	217	0	217	1.028	223	
56	Ocean Quahog/Surflclam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						213,863	213,863				
Other minor fleets						537,087	537,087				
TOTAL						63,974,159	57,940,219	6,033,940	0.159	961,661	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SURFCLAM (*Spisula solidissima*) - OCEAN QUAHOG (*Arctica islandica*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	11,438	0	11,438	0.458	5,234	
6	Otter Trawl	OPEN	all	MA	lg	5,696	0	5,696	0.697	3,968	
7	Otter Trawl	OPEN	all	NE	sm	1,184	0	1,184	0.728	862	
8	Otter Trawl	OPEN	all	NE	lg	3,171	0	3,171	0.431	1,367	
9	Scallop Trawl	AA	GEN	MA	all	881	0	881	0.804	709	
11	Scallop Trawl	OPEN	GEN	MA	all	573	0	573	0.879	503	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	5	0	5	1.261	7	P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	28	0	28	0.543	15	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0			
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	0	0	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: SURFCLAM (*Spisula solidissima*) - OCEAN QUAHOG (*Arctica islandica*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	320	0	320	0.418	134	
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	2,139	0	2,139	0.521	1,115	
34	Scallop Dredge	AA	LIM	NE	all	4,643	0	4,643	0.817	3,793	
35	Scallop Dredge	OPEN	GEN	MA	all	25	0	25	0.903	23	
36	Scallop Dredge	OPEN	GEN	NE	all	13,163	10,690	2,473	0.627	1,550	
37	Scallop Dredge	OPEN	LIM	MA	all	7,263	0	7,263	0.714	5,182	
38	Scallop Dredge	OPEN	LIM	NE	all	16,325	0	16,325	0.476	7,778	
39	Danish Seine	OPEN	all	MA	all	500	500				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	250,409,830	247,836,807	2,573,023	0.453	1,164,828	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	197,314,607	197,289,336	25,271	0.723	18,263	
	Confidential fleets					0	0				
	Other minor fleets					303,369	303,369				
	TOTAL					448,095,161	445,440,701	2,654,459	0.439	1,165,037	

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: TILEFISH (*Lopholatilus chamaeleonticeps*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	948,279	945,835	2,444	0.619	1,512	
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	1,202	1,202	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	11,441	4,452	6,989	0.520	3,635	
6	Otter Trawl	OPEN	all	MA	lg	1,678	990	688	0.716	493	
7	Otter Trawl	OPEN	all	NE	sm	13,373	6,252	7,121	0.442	3,147	
8	Otter Trawl	OPEN	all	NE	lg	1,222	1,063	159	0.731	116	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	2,064	25	2,039	0.112	229	P
14	Otter Trawl, Twin	OPEN	all	NE	all	334	120	214	0.267	57	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	2,579	0	2,579	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	40	40				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0			
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	821	821	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. Light shading indicates that the variance of the discard estimate was not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species Group: TILEFISH (*Lopholatilus chamaeleonticeps*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	0	0	0			
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	445	52	393	0.509	200	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					19	19				
	TOTAL					983,498	960,871	22,627	0.224	5,075	

See text for fleet abbreviations.

**Table 5B. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: BLACK SEA BASS (*Centropristis striata*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	223	150	73	0.732	53	
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	57,897	57,897	0			P
4	Hand Line	OPEN	all	NE	all	15,319	15,218	101	0.655	66	
5	Otter Trawl	OPEN	all	MA	sm	986,738	643,343	343,395	0.145	49,855	
6	Otter Trawl	OPEN	all	MA	lg	738,033	487,156	250,877	0.340	85,357	
7	Otter Trawl	OPEN	all	NE	sm	376,445	75,329	301,116	0.249	74,905	
8	Otter Trawl	OPEN	all	NE	lg	96,571	32,266	64,305	0.218	14,011	
9	Scallop Trawl	AA	GEN	MA	all	5,284	30	5,254	0.978	5,140	
11	Scallop Trawl	OPEN	GEN	MA	all	165	162	3	0.471	1	
12	Scallop Trawl	OPEN	LIM	MA	all	1,351	1,351				P
13	Otter Trawl, Twin	OPEN	all	MA	all	431	260	171	1.231	211	P
14	Otter Trawl, Twin	OPEN	all	NE	all	2,521	500	2,021	0.806	1,629	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	1,058	1,058				P
22	Floating Trap	OPEN	all	NE	all	25	25				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	7	7	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	818	759	59	0.701	41	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	1,574	1,486	88	0.751	66	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	7,087	6,880	207	0.590	122	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,007	959	48	0.962	46	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: BLACK SEA BASS (*Centropristis striata*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	763	9	754	0.277	209	
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	2,448	0	2,448	0.278	680	
34	Scallop Dredge	AA	LIM	NE	all	2,951	0	2,951	0.231	683	
35	Scallop Dredge	OPEN	GEN	MA	all	1,059	121	938	0.327	306	
36	Scallop Dredge	OPEN	GEN	NE	all	500	6	494	0.609	301	
37	Scallop Dredge	OPEN	LIM	MA	all	1,342	21	1,321	0.344	455	
38	Scallop Dredge	OPEN	LIM	NE	all	294	0	294	0.363	107	
39	Danish Seine	OPEN	all	MA	all	4	4				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	381,998	282,152	99,846	0.863	86,124	
44	Pots and Traps, Fish	OPEN	all	NE	all	163,797	68,608	95,189	0.237	22,545	
45	Pots and Traps, Conch	OPEN	all	MA	all	1,862	1,283	579	0.404	234	
46	Pots and Traps, Conch	OPEN	all	NE	all	310	0	310	0.535	166	
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	157,969	114,751	43,218	0.670	28,942	
49	Pots and Traps, Lobster	OPEN	all	NE	all	75,740	23,788	51,952	0.505	26,231	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	15,490	15,490				P
53	Beam Trawl	OPEN	all	NE	all	34	34				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	2,435	0	2,435	0.518	1,262	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	151	0	151	0.714	108	
Confidential fleets						2,615	2,615				
Other minor fleets						11,275	11,275				
TOTAL						3,115,592	1,844,993	1,270,599	0.125	158,309	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: FLUKE (*Paralichthys dentatus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	795	795	0			
3	Hand Line	OPEN	all	MA	all	44,320	44,320	0			P
4	Hand Line	OPEN	all	NE	all	10,852	10,852	0			
5	Otter Trawl	OPEN	all	MA	sm	824,297	476,949	347,348	0.146	50,774	
6	Otter Trawl	OPEN	all	MA	lg	6,262,459	5,689,848	572,611	0.184	105,209	
7	Otter Trawl	OPEN	all	NE	sm	739,086	529,502	209,584	0.284	59,602	
8	Otter Trawl	OPEN	all	NE	lg	1,344,819	881,036	463,783	0.195	90,564	
9	Scallop Trawl	AA	GEN	MA	all	27,979	1,498	26,481	0.660	17,477	
11	Scallop Trawl	OPEN	GEN	MA	all	21,229	20,689	540	0.494	267	
12	Scallop Trawl	OPEN	LIM	MA	all	20,780	20,780				P
13	Otter Trawl, Twin	OPEN	all	MA	all	13,141	12,148	993	0.830	824	P
14	Otter Trawl, Twin	OPEN	all	NE	all	5,100	1,112	3,988	0.257	1,026	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	15	15				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	7,079	1,155	5,924	0.963	5,703	
19	Shrimp Trawl	OPEN	all	MA	all	266	266	0			P
20	Shrimp Trawl	OPEN	all	NE	all	400	400				P
22	Floating Trap	OPEN	all	NE	all	15	15				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	195	12	183	0.283	52	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	6,872	6,378	494	0.249	123	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	29,124	12,709	16,415	0.336	5,524	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	105	105				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	24,287	23,973	314	0.248	78	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	97,582	33,785	63,797	0.328	20,942	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: FLUKE (*Paralichthys dentatus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	14,604	4,287	10,317	0.167	1,724	
32	Scallop Dredge	AA	GEN	NE	all	754	0	754	0.210	158	
33	Scallop Dredge	AA	LIM	MA	all	91,401	5,176	86,225	0.189	16,330	
34	Scallop Dredge	AA	LIM	NE	all	106,822	70	106,752	0.154	16,421	
35	Scallop Dredge	OPEN	GEN	MA	all	62,778	11,737	51,041	0.195	9,939	
36	Scallop Dredge	OPEN	GEN	NE	all	26,805	3,065	23,740	0.373	8,860	
37	Scallop Dredge	OPEN	LIM	MA	all	100,462	9,894	90,568	0.288	26,044	
38	Scallop Dredge	OPEN	LIM	NE	all	163,399	50	163,349	0.220	35,979	
39	Danish Seine	OPEN	all	MA	all	2,955	2,955				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	1,986	368	1,618	0.286	462	
44	Pots and Traps, Fish	OPEN	all	NE	all	870	836	34	0.837	28	
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	250	250	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	56	56	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	1,273	150	1,123	0.414	465	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	103,049	103,049				P
53	Beam Trawl	OPEN	all	NE	all	17,897	17,897				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	16,432	0	16,432	0.395	6,492	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	1,955	0	1,955	0.717	1,402	
Confidential fleets						8,841	8,841				
Other minor fleets						31,978	31,978				
TOTAL						10,235,364	7,969,001	2,266,363	0.075	170,129	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: SCUP (*Stenotomus chrysops*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	76,993	76,993	0			P
4	Hand Line	OPEN	all	NE	all	5,097	5,097	0			
5	Otter Trawl	OPEN	all	MA	sm	6,193,644	4,961,327	1,232,317	0.155	191,309	
6	Otter Trawl	OPEN	all	MA	lg	2,225,728	1,722,249	503,479	0.309	155,769	
7	Otter Trawl	OPEN	all	NE	sm	4,988,462	3,592,445	1,396,017	0.217	303,130	
8	Otter Trawl	OPEN	all	NE	lg	1,263,859	1,149,382	114,477	0.424	48,507	
9	Scallop Trawl	AA	GEN	MA	all	164	0	164	0.982	161	
11	Scallop Trawl	OPEN	GEN	MA	all	165	131	34	0.444	15	
12	Scallop Trawl	OPEN	LIM	MA	all	15	15				P
13	Otter Trawl, Twin	OPEN	all	MA	all	5,162	3,850	1,312	1.216	1,595	P
14	Otter Trawl, Twin	OPEN	all	NE	all	8,042	7,950	92	0.791	73	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	50	50	0			P
20	Shrimp Trawl	OPEN	all	NE	all	1,363	1,363				P
22	Floating Trap	OPEN	all	NE	all	550	550				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	115	58	57	0.558	32	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	4,681	4,671	10	0.845	8	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	1,134	1,049	85	0.736	62	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	400	400				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	87,860	87,821	39	0.489	19	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	3,527	3,527	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: SCUP (*Stenotomus chrysops*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	27	0	27	0.390	10	
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	683	0	683	0.508	347	
34	Scallop Dredge	AA	LIM	NE	all	2,222	0	2,222	0.487	1,082	
35	Scallop Dredge	OPEN	GEN	MA	all	375	9	366	0.492	180	
36	Scallop Dredge	OPEN	GEN	NE	all	118	0	118	0.941	111	
37	Scallop Dredge	OPEN	LIM	MA	all	351	5	346	0.514	178	
38	Scallop Dredge	OPEN	LIM	NE	all	29	0	29	0.611	18	
39	Danish Seine	OPEN	all	MA	all	2	2				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	6,000	6,000	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	12,366	10,916	1,450	0.442	641	
44	Pots and Traps, Fish	OPEN	all	NE	all	102,562	91,185	11,377	0.359	4,090	
45	Pots and Traps, Conch	OPEN	all	MA	all	38	33	5	1.275	6	
46	Pots and Traps, Conch	OPEN	all	NE	all	2,200	0	2,200	1.122	2,468	
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	5,121	3,978	1,143	1.085	1,240	
49	Pots and Traps, Lobster	OPEN	all	NE	all	7,709	1,872	5,837	0.457	2,666	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	2,174	2,174				P
53	Beam Trawl	OPEN	all	NE	all	2,324	2,324				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	83	0	83	0.928	77	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						148	148				
Other minor fleets						7,478	7,478				
TOTAL						15,019,020	11,745,052	3,273,968	0.120	393,878	

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: AMERICAN PLAICE (*Hippoglossoides platessoides*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	478	290	188	0.795	149	
6	Otter Trawl	OPEN	all	MA	lg	3,351	550	2,801	0.580	1,625	
7	Otter Trawl	OPEN	all	NE	sm	8,952	500	8,452	0.218	1,844	
8	Otter Trawl	OPEN	all	NE	lg	2,531,403	2,359,804	171,599	0.093	16,031	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	10	10	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,404	1,404				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	52,220	49,118	3,102	0.316	981	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	2	0	2	0.819	2	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	10	10				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	13,356	11,032	2,324	0.250	581	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	291	272	19	0.540	10	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: AMERICAN PLAICE (*Hippoglossoides platessoides*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	8	0	8	0.952	7	
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	34	0	34	0.743	25	
36	Scallop Dredge	OPEN	GEN	NE	all	1,138	0	1,138	0.365	415	
37	Scallop Dredge	OPEN	LIM	MA	all	15	0	15	0.880	13	
38	Scallop Dredge	OPEN	LIM	NE	all	36,576	30	36,546	0.394	14,417	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	10	0	10	0.774	8	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	45	0	45	0.929	42	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>2,649,301</b>	<b>2,423,020</b>	<b>226,281</b>	<b>0.096</b>	<b>21,734</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC COD (*Gadus morhua*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	12,277	4,214	8,063	0.801	6,458	
3	Hand Line	OPEN	all	MA	all	4,698	4,698	0			P
4	Hand Line	OPEN	all	NE	all	87,358	48,303	39,055	2.019	78,836	
5	Otter Trawl	OPEN	all	MA	sm	5,041	501	4,540	0.558	2,533	
6	Otter Trawl	OPEN	all	MA	lg	50,490	48,965	1,525	0.517	788	
7	Otter Trawl	OPEN	all	NE	sm	5,699	1,764	3,935	0.308	1,212	
8	Otter Trawl	OPEN	all	NE	lg	2,136,131	2,071,778	64,353	0.192	12,364	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	11	0	11	0.859	9	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	230	230	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	158	150	8	0.861	7	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	5	5	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	477	477				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	179,675	172,037	7,638	0.154	1,173	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	809	477	332	0.673	224	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	666	453	213	0.548	117	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	15	15				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	472,918	446,455	26,463	0.233	6,162	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	23,663	9,941	13,722	0.284	3,896	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC COD (*Gadus morhua*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	254	34	220	1.183	260	
36	Scallop Dredge	OPEN	GEN	NE	all	41	0	41	0.644	26	
37	Scallop Dredge	OPEN	LIM	MA	all	237	30	207	0.357	74	
38	Scallop Dredge	OPEN	LIM	NE	all	16,691	185	16,506	0.284	4,696	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	6,816	516	6,300	0.502	3,164	
44	Pots and Traps, Fish	OPEN	all	NE	all	72	72	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	1,549	1,216	333	1.317	439	
49	Pots and Traps, Lobster	OPEN	all	NE	all	68,525	675	67,850	0.282	19,140	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	3,074,508	2,813,191	261,317	0.317	82,894	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC HALIBUT (*Hippoglossus hippoglossus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	2,538	2,538	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	154	154	0			
5	Otter Trawl	OPEN	all	MA	sm	0	0	0			
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	1,581	0	1,581	0.468	739	
8	Otter Trawl	OPEN	all	NE	lg	67,332	26,099	41,233	0.205	8,450	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	59	59				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	2,537	1,308	1,229	0.345	424	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	7,654	2,782	4,872	0.214	1,042	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	79,246	5,601	73,645	0.249	18,332	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC HALIBUT (*Hippoglossus hippoglossus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	120	0	120	0.877	105	
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	626	140	486	0.397	193	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	301	252	49	0.774	38	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						0	0				
Other minor fleets						497	497				
TOTAL						162,646	39,430	123,216	0.164	20,232	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC WOLFFISH (*Anarhichas lupus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	6,065	0	6,065	0.803	4,868	
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	0	0	0			
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	284	0	284	0.477	135	
8	Otter Trawl	OPEN	all	NE	lg	33,804	0	33,804	0.145	4,917	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	4	0	4	0.861	4	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	398	0	398	0.688	274	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	4,031	0	4,031	0.173	697	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,412	0	1,412	0.767	1,084	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC WOLFFISH (*Anarhichas lupus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	3,635	0	3,635	0.345	1,253	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	4,832	0	4,832	11.311	54,650	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	108	108				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>54,573</b>	<b>108</b>	<b>54,465</b>	<b>1.012</b>	<b>55,116</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: HADDOCK (*Melanogrammus aeglefinus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	112,200	48,956	63,244	0.339	21,442	
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	16,859	9,838	7,021	1.887	13,251	
5	Otter Trawl	OPEN	all	MA	sm	0	0	0			
6	Otter Trawl	OPEN	all	MA	lg	104	0	104	0.886	92	
7	Otter Trawl	OPEN	all	NE	sm	724,488	3,975	720,513	0.278	200,163	
8	Otter Trawl	OPEN	all	NE	lg	6,417,916	5,265,942	1,151,974	0.194	223,756	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	100	100	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	72,031	72,031				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	4,292,137	3,296,221	995,916	0.294	293,255	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	59,850	39,516	20,334	0.267	5,423	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	2,203	1,090	1,113	0.331	368	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: HADDOCK (*Melanogrammus aeglefinus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	156	0	156	0.301	47	
33	Scallop Dredge	AA	LIM	MA	all	23	0	23	0.891	21	
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	595	0	595	0.430	256	
37	Scallop Dredge	OPEN	LIM	MA	all	46	0	46	1.118	51	
38	Scallop Dredge	OPEN	LIM	NE	all	17,693	0	17,693	0.262	4,639	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	1,907	1,810	97	0.587	57	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	33,646	33,425	221	0.805	178	
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	2,634	0	2,634	0.399	1,050	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	1,978	0	1,978	0.595	1,177	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>11,756,566</b>	<b>8,772,904</b>	<b>2,983,662</b>	<b>0.141</b>	<b>420,500</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: OCEAN POUT (*Zoarces americanus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	210	0	210	0.897	189	
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	14,874	0	14,874	0.445	6,618	
6	Otter Trawl	OPEN	all	MA	lg	4,888	33	4,855	0.384	1,866	
7	Otter Trawl	OPEN	all	NE	sm	4,716	0	4,716	0.407	1,918	
8	Otter Trawl	OPEN	all	NE	lg	86,049	0	86,049	0.279	24,005	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	62	0	62	0.445	28	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	992	0	992	0.603	599	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	82	0	82	0.391	32	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	16	0	16	0.557	9	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: OCEAN POUT (*Zoarces americanus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	64	0	64	0.700	45	
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	7	0	7	0.975	7	
35	Scallop Dredge	OPEN	GEN	MA	all	234	0	234	0.581	136	
36	Scallop Dredge	OPEN	GEN	NE	all	61	0	61	0.457	28	
37	Scallop Dredge	OPEN	LIM	MA	all	105	0	105	0.500	53	
38	Scallop Dredge	OPEN	LIM	NE	all	3,479	0	3,479	0.211	732	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	2,456	0	2,456	0.437	1,073	
49	Pots and Traps, Lobster	OPEN	all	NE	all	19,263	107	19,156	0.285	5,460	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	606	0	606	0.748	454	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	379	0	379	0.734	278	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	TOTAL					138,545	140	138,405	0.186	25,679	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: POLLOCK (*Pollachius virens*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	5,085	177	4,908	0.484	2,376	
3	Hand Line	OPEN	all	MA	all	32	32	0			P
4	Hand Line	OPEN	all	NE	all	154,403	123,044	31,359	0.595	18,658	
5	Otter Trawl	OPEN	all	MA	sm	1,563	0	1,563	1.063	1,661	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	14,911	50	14,861	0.425	6,313	
8	Otter Trawl	OPEN	all	NE	lg	3,545,494	3,484,669	60,825	0.286	17,416	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	250	250	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	189	189				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	169,418	165,406	4,012	0.805	3,231	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	35	0	35	0.819	29	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	72	12	60	1.083	65	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	20	0	20	0.965	19	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	500	500				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	1,559,147	1,485,320	73,827	0.193	14,263	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	36,830	21,892	14,938	0.208	3,104	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: POLLOCK (*Pollachius virens*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	73	0	73	0.944	69	
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0			
38	Scallop Dredge	OPEN	LIM	NE	all	37	0	37	0.922	34	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	461	0	461	0.616	284	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	5	5	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	2	2	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	172	0	172	0.379	65	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	TOTAL					5,488,700	5,281,548	207,152	0.147	30,386	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: REDFISH (*Sebastes fasciatus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all		2	0			
2	Longline	OPEN	all	NE	all	48	48	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	563	512	51	0.645	33	
5	Otter Trawl	OPEN	all	MA	sm	400	42	358	0.564	202	
6	Otter Trawl	OPEN	all	MA	lg	762	0	762	0.892	679	
7	Otter Trawl	OPEN	all	NE	sm	21,507	7	21,500	0.571	12,277	
8	Otter Trawl	OPEN	all	NE	lg	9,714,741	9,631,193	83,548	0.134	11,203	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	27,200	27,200	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	131,848	124,630	7,218	0.666	4,807	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	2	2	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	85,494	82,561	2,933	0.348	1,021	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	2,147	2,016	131	1.133	148	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: REDFISH (*Sebastes fasciatus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot	
31	Scallop Dredge	AA	GEN	MA	all	0	0	0				
32	Scallop Dredge	AA	GEN	NE	all	0	0	0				
33	Scallop Dredge	AA	LIM	MA	all	0	0	0				
34	Scallop Dredge	AA	LIM	NE	all	48	0	48	0.838	40		
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0				
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0				
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0				
38	Scallop Dredge	OPEN	LIM	NE	all	10	0	10	0.922	10		
39	Danish Seine	OPEN	all	MA	all	0	0				P	
40	Mid-water Paired & Single Trawl	AA	all	NE	all	701	655	46	0.419	19		
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	20	20	0				
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0				
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0				
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0				
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0				
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P	
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0				
49	Pots and Traps, Lobster	OPEN	all	NE	all	960	0	960	5.761	5,533		
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P	
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P	
52	Beam Trawl	OPEN	all	MA	all	0	0				P	
53	Beam Trawl	OPEN	all	NE	all	0	0				P	
54	Dredge, Other	OPEN	all	MA	all	0	0				P	
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0				
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0				
	Confidential fleets					0	0					
	Other minor fleets					0	0					
						TOTAL	9,986,454	9,868,888	117,566	0.155	18,208	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WHITE HAKE (*Urophycis tenuis*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	27	27	0			
2	Longline	OPEN	all	NE	all	4	4	0			
3	Hand Line	OPEN	all	MA	all	103	103	0			P
4	Hand Line	OPEN	all	NE	all	562	562	0			
5	Otter Trawl	OPEN	all	MA	sm	9,105	225	8,880	0.773	6,861	
6	Otter Trawl	OPEN	all	MA	lg	5,417	97	5,320	0.550	2,928	
7	Otter Trawl	OPEN	all	NE	sm	1,730	85	1,645	0.459	755	
8	Otter Trawl	OPEN	all	NE	lg	2,106,956	2,097,510	9,446	0.299	2,824	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	<1	0	<1	0.471	<1	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	0	0	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	200	200	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	9	9				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	22,155	22,078	77	0.528	41	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	30	30	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	40	40				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	350,137	334,810	15,327	0.216	3,306	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	6,138	5,736	402	0.396	159	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WHITE HAKE (*Urophycis tenuis*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	27	0	27	0.556	15	
34	Scallop Dredge	AA	LIM	NE	all	77	0	77	0.907	69	
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	203	0	203	0.895	182	
37	Scallop Dredge	OPEN	LIM	MA	all	556	0	556	0.768	427	
38	Scallop Dredge	OPEN	LIM	NE	all	1,365	0	1,365	0.287	392	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	2	2	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	25,041	0	25,041	0.339	8,482	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	TOTAL					2,529,884	2,461,518	68,366	0.178	12,144	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WINDOWPANE FLOUNDER (*Scophthalmus aquosus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	176,658	399	176,259	0.147	25,870	
6	Otter Trawl	OPEN	all	MA	lg	575,190	539	574,651	0.180	103,315	
7	Otter Trawl	OPEN	all	NE	sm	43,946	2	43,944	0.256	11,235	
8	Otter Trawl	OPEN	all	NE	lg	322,360	0	322,360	0.114	36,727	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	499	0	499	1.064	531	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	1,028	0	1,028	1.146	1,178	P
14	Otter Trawl, Twin	OPEN	all	NE	all	880	0	880	0.654	575	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	5,933	0	5,933	0.408	2,419	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	179	29	150	0.335	50	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	902	148	754	0.188	142	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	62	0	62	0.524	32	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	2,741	0	2,741	0.178	487	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	198	0	198	0.563	111	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WINDOWPANE FLOUNDER (*Scophthalmus aquosus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	874	0	874	0.319	279	
32	Scallop Dredge	AA	GEN	NE	all	577	0	577	0.162	94	
33	Scallop Dredge	AA	LIM	MA	all	4,879	0	4,879	0.235	1,149	
34	Scallop Dredge	AA	LIM	NE	all	1,847	0	1,847	0.386	714	
35	Scallop Dredge	OPEN	GEN	MA	all	28,365	0	28,365	0.169	4,791	
36	Scallop Dredge	OPEN	GEN	NE	all	23,270	0	23,270	0.228	5,316	
37	Scallop Dredge	OPEN	LIM	MA	all	16,356	0	16,356	0.339	5,539	
38	Scallop Dredge	OPEN	LIM	NE	all	205,925	0	205,925	0.161	33,095	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	55	0	55	0.592	32	
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	414	0	414	0.402	166	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	353	0	353	0.549	194	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	947	0	947	0.504	477	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	1,414,438	1,117	1,413,321	0.084	118,346	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WINTER FLOUNDER (*Pseudopleuronectes americanus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	105	105	0			
3	Hand Line	OPEN	all	MA	all	6	6	0			P
4	Hand Line	OPEN	all	NE	all	125	125	0			
5	Otter Trawl	OPEN	all	MA	sm	101,289	1,609	99,680	0.160	15,989	
6	Otter Trawl	OPEN	all	MA	lg	284,447	233,783	50,664	0.212	10,732	
7	Otter Trawl	OPEN	all	NE	sm	78,973	7,896	71,077	0.213	15,124	
8	Otter Trawl	OPEN	all	NE	lg	2,440,374	2,393,219	47,155	0.153	7,223	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	169	0	169	1.010	171	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	2,188	2,110	78	1.261	98	P
14	Otter Trawl, Twin	OPEN	all	NE	all	220	0	220	0.671	148	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	44	44				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	143,737	143,652	85	0.553	47	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	184	159	25	0.701	17	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	640	640	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	31,332	30,174	1,158	0.238	275	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	2,873	2,735	138	0.512	71	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WINTER FLOUNDER (*Pseudopleuronectes americanus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	861	0	861	0.193	166	
33	Scallop Dredge	AA	LIM	MA	all	71	0	71	0.681	49	
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	4,339	0	4,339	0.478	2,074	
36	Scallop Dredge	OPEN	GEN	NE	all	20,225	0	20,225	0.179	3,611	
37	Scallop Dredge	OPEN	LIM	MA	all	4,180	94	4,086	0.189	773	
38	Scallop Dredge	OPEN	LIM	NE	all	229,166	1,400	227,766	0.160	36,332	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	218	218	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	58	0	58	0.508	30	
49	Pots and Traps, Lobster	OPEN	all	NE	all	601	14	587	0.361	212	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	278	0	278	1.028	286	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	3,274	0	3,274	0.463	1,516	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>3,349,975</b>	<b>2,817,983</b>	<b>531,992</b>	<b>0.084</b>	<b>44,635</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WITCH FLOUNDER (*Glyptocephalus cynoglossus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	24,489	0	24,489	0.253	6,185	
6	Otter Trawl	OPEN	all	MA	lg	14,069	1,868	12,201	0.264	3,218	
7	Otter Trawl	OPEN	all	NE	sm	25,506	65	25,441	0.284	7,229	
8	Otter Trawl	OPEN	all	NE	lg	1,000,841	912,230	88,611	0.108	9,537	
9	Scallop Trawl	AA	GEN	MA	all	211	0	211	0.928	196	
11	Scallop Trawl	OPEN	GEN	MA	all	46	0	46	1.164	53	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	503	0	503	0.112	56	P
14	Otter Trawl, Twin	OPEN	all	NE	all	56	20	36	0.861	31	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	227	227				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	16,634	15,197	1,437	0.370	532	
19	Shrimp Trawl	OPEN	all	MA	all	5,479	0	5,479	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	119	0	119	0.650	77	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	9	0	9	0.965	8	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	1	1				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	2,072	1,927	145	0.275	40	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	210	210	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: WITCH FLOUNDER (*Glyptocephalus cynoglossus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	512	0	512	0.417	213	
32	Scallop Dredge	AA	GEN	NE	all	9	0	9	0.949	9	
33	Scallop Dredge	AA	LIM	MA	all	733	0	733	0.327	240	
34	Scallop Dredge	AA	LIM	NE	all	2,199	0	2,199	0.267	587	
35	Scallop Dredge	OPEN	GEN	MA	all	703	0	703	0.607	427	
36	Scallop Dredge	OPEN	GEN	NE	all	3,993	0	3,993	0.959	3,830	
37	Scallop Dredge	OPEN	LIM	MA	all	3,784	0	3,784	0.229	868	
38	Scallop Dredge	OPEN	LIM	NE	all	27,901	642	27,259	0.329	8,972	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	64	0	64	0.774	50	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	44	0	44	1.272	56	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
						TOTAL					
						1,130,415	932,387	198,028	0.086	16,992	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: YELLOWTAIL FLOUNDER (*Limanda ferruginea*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	11	11	0			
5	Otter Trawl	OPEN	all	MA	sm	3,681	0	3,681	0.322	1,187	
6	Otter Trawl	OPEN	all	MA	lg	174,286	166,389	7,897	0.427	3,371	
7	Otter Trawl	OPEN	all	NE	sm	18,576	90	18,486	0.293	5,413	
8	Otter Trawl	OPEN	all	NE	lg	1,111,633	1,057,154	54,479	0.122	6,621	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	259	0	259	0.327	85	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	438	438	0			P
14	Otter Trawl, Twin	OPEN	all	NE	all	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	373	373				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1,633	1,505	128	0.452	58	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	9	9	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	45,777	42,326	3,451	0.240	829	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,178	1,178	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: YELLOWTAIL FLOUNDER (*Limanda ferruginea*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	18	0	18	1.991	35	
32	Scallop Dredge	AA	GEN	NE	all	7	0	7	0.950	7	
33	Scallop Dredge	AA	LIM	MA	all	5	5	0			
34	Scallop Dredge	AA	LIM	NE	all	53	0	53	0.541	29	
35	Scallop Dredge	OPEN	GEN	MA	all	1,797	0	1,797	0.477	858	
36	Scallop Dredge	OPEN	GEN	NE	all	26,384	0	26,384	0.264	6,966	
37	Scallop Dredge	OPEN	LIM	MA	all	1,023	0	1,023	0.314	321	
38	Scallop Dredge	OPEN	LIM	NE	all	101,830	0	101,830	0.234	23,868	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	82	0	82	0.959	79	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
	<b>TOTAL</b>					<b>1,489,054</b>	<b>1,269,478</b>	<b>219,576</b>	<b>0.121</b>	<b>26,564</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: OFFSHORE HAKE (*Merluccius albidus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	136	0	136	0.572	78	
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	10,758	661	10,097	0.569	5,742	
6	Otter Trawl	OPEN	all	MA	lg	3,157	1,240	1,917	0.799	1,532	
7	Otter Trawl	OPEN	all	NE	sm	1,571	615	956	0.510	487	
8	Otter Trawl	OPEN	all	NE	lg	498	130	368	0.666	245	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	609	0	609	0.112	68	P
14	Otter Trawl, Twin	OPEN	all	NE	all	38	0	38	0.861	32	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,701	0	1,701	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0			
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	126	0	126	1.159	146	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: OFFSHORE HAKE (*Merluccius albidus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	5	0	5	0.892	4	
34	Scallop Dredge	AA	LIM	NE	all	0	0	0			
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0			
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	22	0	22	0.906	20	
38	Scallop Dredge	OPEN	LIM	NE	all	437	0	437	1.067	467	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	4	4	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	19,061	2,650	16,411	0.365	5,989	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: RED HAKE (*Urophycis chuss*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	496	0	496	0.826	410	
2	Longline	OPEN	all	NE	all	280	0	280	0.897	252	
3	Hand Line	OPEN	all	MA	all	803	803	0			P
4	Hand Line	OPEN	all	NE	all	134	21	113	6.030	684	
5	Otter Trawl	OPEN	all	MA	sm	651,428	432,189	219,239	0.429	93,960	
6	Otter Trawl	OPEN	all	MA	lg	43,461	30,807	12,654	0.445	5,633	
7	Otter Trawl	OPEN	all	NE	sm	2,439,638	564,142	1,875,496	0.245	459,066	
8	Otter Trawl	OPEN	all	NE	lg	301,366	55,710	245,656	0.183	44,848	
9	Scallop Trawl	AA	GEN	MA	all	88	0	88	1.031	91	
11	Scallop Trawl	OPEN	GEN	MA	all	10	0	10	0.487	5	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	699	34	665	0.112	75	P
14	Otter Trawl, Twin	OPEN	all	NE	all	24,240	0	24,240	0.259	6,288	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	10,151	0	10,151	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	6,053	0	6,053	0.365	2,211	
19	Shrimp Trawl	OPEN	all	MA	all	20	20	0			P
20	Shrimp Trawl	OPEN	all	NE	all	1,995	1,995				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	87	87	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	34	34	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	3,476	899	2,577	0.133	343	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	109	26	83	0.894	74	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: RED HAKE (*Urophycis chuss*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	1,875	0	1,875	0.357	669	
32	Scallop Dredge	AA	GEN	NE	all	682	0	682	0.229	156	
33	Scallop Dredge	AA	LIM	MA	all	4,398	0	4,398	0.244	1,072	
34	Scallop Dredge	AA	LIM	NE	all	2,424	0	2,424	0.235	569	
35	Scallop Dredge	OPEN	GEN	MA	all	6,141	0	6,141	0.845	5,189	
36	Scallop Dredge	OPEN	GEN	NE	all	7,201	0	7,201	0.363	2,614	
37	Scallop Dredge	OPEN	LIM	MA	all	18,506	0	18,506	0.354	6,552	
38	Scallop Dredge	OPEN	LIM	NE	all	133,504	0	133,504	0.219	29,239	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	1,048	1,048	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	41	41	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	12,203	9,115	3,088	2.376	7,337	
49	Pots and Traps, Lobster	OPEN	all	NE	all	115,851	12,264	103,587	0.910	94,291	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	145	145				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	83	0	83	0.999	83	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	445	0	445	0.702	312	
	Confidential fleets					0	0				
	Other minor fleets					3,100	3,100				
	<b>TOTAL</b>					<b>3,792,217</b>	<b>1,112,480</b>	<b>2,679,737</b>	<b>0.180</b>	<b>481,182</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: SILVER HAKE (*Merluccius bilinearis*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	308	283	25	2.319	58	
2	Longline	OPEN	all	NE	all	4	4	0			
3	Hand Line	OPEN	all	MA	all	6	6	0			P
4	Hand Line	OPEN	all	NE	all	1,523	1,523	0			
5	Otter Trawl	OPEN	all	MA	sm	2,385,132	2,308,960	76,172	0.272	20,727	
6	Otter Trawl	OPEN	all	MA	lg	94,419	44,409	50,010	0.347	17,348	
7	Otter Trawl	OPEN	all	NE	sm	9,629,845	9,280,233	349,612	0.309	108,125	
8	Otter Trawl	OPEN	all	NE	lg	1,027,044	512,115	514,929	0.162	83,242	
9	Scallop Trawl	AA	GEN	MA	all	66	0	66	0.955	63	
11	Scallop Trawl	OPEN	GEN	MA	all	272	0	272	0.863	235	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	2,219	511	1,708	0.112	191	P
14	Otter Trawl, Twin	OPEN	all	NE	all	9,790	3,520	6,270	0.250	1,567	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	768	0	768	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	65	65				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	20,768	3,208	17,560	0.411	7,215	
19	Shrimp Trawl	OPEN	all	MA	all	39,425	800	38,625	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	18,490	18,490				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	39	39	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	323	323	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	157	7	150	0.658	99	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	400	400				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	101,791	86,852	14,939	0.191	2,850	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	17,192	11,916	5,276	0.199	1,050	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: SILVER HAKE (*Merluccius bilinearis*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	200	0	200	0.456	91	
32	Scallop Dredge	AA	GEN	NE	all	83	0	83	0.308	26	
33	Scallop Dredge	AA	LIM	MA	all	567	0	567	0.246	139	
34	Scallop Dredge	AA	LIM	NE	all	816	0	816	0.233	190	
35	Scallop Dredge	OPEN	GEN	MA	all	408	3	405	0.358	145	
36	Scallop Dredge	OPEN	GEN	NE	all	1,948	0	1,948	0.455	887	
37	Scallop Dredge	OPEN	LIM	MA	all	2,327	0	2,327	0.243	564	
38	Scallop Dredge	OPEN	LIM	NE	all	26,150	0	26,150	0.245	6,396	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	450	450	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	12	12	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	25	0	25	0.757	19	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	147	0	147	0.999	147	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					201,266	201,266				
	<b>TOTAL</b>					<b>13,584,446</b>	<b>12,475,395</b>	<b>1,109,051</b>	<b>0.126</b>	<b>139,487</b>	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC MACKEREL (*Scomber scombrus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	5,000	5,000	0			
3	Hand Line	OPEN	all	MA	all	1,298	1,298	0			P
4	Hand Line	OPEN	all	NE	all	1,622,088	1,622,088	0			
5	Otter Trawl	OPEN	all	MA	sm	46,878	39,300	7,578	0.303	2,294	
6	Otter Trawl	OPEN	all	MA	lg	5,495	3,559	1,936	0.813	1,575	
7	Otter Trawl	OPEN	all	NE	sm	429,232	412,402	16,830	0.369	6,218	
8	Otter Trawl	OPEN	all	NE	lg	16,581	11,922	4,659	0.427	1,991	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0			
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	794	0	794	0.112	89	P
14	Otter Trawl, Twin	OPEN	all	NE	all	1,392	5	1,387	0.406	563	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	185	0	185	0.486	90	
19	Shrimp Trawl	OPEN	all	MA	all	0	0	0			P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	2,144	2,144				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	379	52	327	0.696	228	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	532	477	55	0.457	25	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	250	153	97	0.339	33	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	6,629	5,756	873	0.454	396	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	1,777	1,658	119	0.476	56	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	36	0	36	0.668	24	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: ATLANTIC MACKEREL (*Scomber scombrus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	0	0	0			
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	0	0	0			
34	Scallop Dredge	AA	LIM	NE	all	9	0	9	1.009	9	
35	Scallop Dredge	OPEN	GEN	MA	all	16	0	16	0.622	10	
36	Scallop Dredge	OPEN	GEN	NE	all	2	0	2	0.875	2	
37	Scallop Dredge	OPEN	LIM	MA	all	15	0	15	0.906	13	
38	Scallop Dredge	OPEN	LIM	NE	all	108	0	108	0.485	53	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	1	0	1	0.244	<1	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	6,002,595	6,002,507	88	0.301	26	
43	Pots and Traps, Fish	OPEN	all	MA	all	9	9	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	30	0	30	0.774	23	
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	0	0				P
53	Beam Trawl	OPEN	all	NE	all	45	45				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						210,586	210,586				
Other minor fleets						1,663	1,663				
TOTAL						8,355,769	8,320,624	35,145	0.203	7,136	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: BUTTERFISH (*Peprilus triacanthus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	2	2	0			
5	Otter Trawl	OPEN	all	MA	sm	2,483,014	530,940	1,952,074	0.255	496,972	
6	Otter Trawl	OPEN	all	MA	lg	104,199	63,450	40,749	0.390	15,883	
7	Otter Trawl	OPEN	all	NE	sm	3,784,786	2,019,149	1,765,637	0.221	390,477	
8	Otter Trawl	OPEN	all	NE	lg	71,573	46,296	25,277	0.364	9,190	
9	Scallop Trawl	AA	GEN	MA	all	82	0	82	0.869	71	
11	Scallop Trawl	OPEN	GEN	MA	all	36	0	36	1.530	56	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	1,118	550	568	0.143	81	P
14	Otter Trawl, Twin	OPEN	all	NE	all	26,764	410	26,354	0.462	12,168	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	3,621	0	3,621	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	6	0	6	0.637	4	
19	Shrimp Trawl	OPEN	all	MA	all	97	97	0			P
20	Shrimp Trawl	OPEN	all	NE	all	4,962	4,962				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	5,743	3,984	1,759	0.906	1,594	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	1,342	1,294	48	0.575	28	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	103	55	48	0.272	13	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	0	0	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: BUTTERFISH (*Peprilus triacanthus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	10	0	10	0.784	8	
32	Scallop Dredge	AA	GEN	NE	all	0	0	0			
33	Scallop Dredge	AA	LIM	MA	all	67	0	67	0.697	47	
34	Scallop Dredge	AA	LIM	NE	all	13	0	13	0.413	5	
35	Scallop Dredge	OPEN	GEN	MA	all	10	0	10	0.595	6	
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0			
37	Scallop Dredge	OPEN	LIM	MA	all	13	0	13	0.463	6	
38	Scallop Dredge	OPEN	LIM	NE	all	129	0	129	0.356	46	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	3,000	3,000	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	115	115				P
53	Beam Trawl	OPEN	all	NE	all	8	8				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
Confidential fleets						331	331				
Other minor fleets						19,225	19,225				
TOTAL						6,510,368	2,693,868	3,816,500	0.166	632,409	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: NORTHERN SHORTFIN SQUID (*Illex illecebrosus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	1	1	0			
5	Otter Trawl	OPEN	all	MA	sm	1,729,758	1,298,385	431,373	0.264	114,093	
6	Otter Trawl	OPEN	all	MA	lg	1,824	979	845	0.628	530	
7	Otter Trawl	OPEN	all	NE	sm	4,444,193	3,961,631	482,562	0.247	119,232	
8	Otter Trawl	OPEN	all	NE	lg	17,972	306	17,666	0.139	2,447	
9	Scallop Trawl	AA	GEN	MA	all	0	0	0			
11	Scallop Trawl	OPEN	GEN	MA	all	8	0	8	0.616	5	
12	Scallop Trawl	OPEN	LIM	MA	all	0	0				P
13	Otter Trawl, Twin	OPEN	all	MA	all	95,973	0	95,973	0.112	10,759	P
14	Otter Trawl, Twin	OPEN	all	NE	all	115,208	0	115,208	0.129	14,879	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	25,953	0	25,953	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	101	0	101	0.442	45	
19	Shrimp Trawl	OPEN	all	MA	all	53,966	0	53,966	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	0	0				P
22	Floating Trap	OPEN	all	NE	all	0	0				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	0	0	0			
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0			
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	0	0	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: NORTHERN SHORTFIN SQUID (*Illex illecebrosus*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	13	0	13	0.730	10	
32	Scallop Dredge	AA	GEN	NE	all	10	0	10	0.953	10	
33	Scallop Dredge	AA	LIM	MA	all	113	0	113	0.853	96	
34	Scallop Dredge	AA	LIM	NE	all	298	0	298	0.559	167	
35	Scallop Dredge	OPEN	GEN	MA	all	38	0	38	0.630	24	
36	Scallop Dredge	OPEN	GEN	NE	all	18	0	18	1.252	23	
37	Scallop Dredge	OPEN	LIM	MA	all	79	0	79	0.837	66	
38	Scallop Dredge	OPEN	LIM	NE	all	558	0	558	0.600	335	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	11	11	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	500	500				P
53	Beam Trawl	OPEN	all	NE	all	0	0				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0			
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	6,486,596	5,261,813	1,224,783	0.136	166,064	

See text for fleet abbreviations.

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: LONGFIN INSHORE SQUID (*Doryteuthis [Amerigo] pealeii*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	0	0	0			
2	Longline	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	5	5	0			P
4	Hand Line	OPEN	all	NE	all	21	21	0			
5	Otter Trawl	OPEN	all	MA	sm	11,458,858	10,799,485	659,373	0.536	353,683	
6	Otter Trawl	OPEN	all	MA	lg	681,336	651,333	30,003	0.445	13,346	
7	Otter Trawl	OPEN	all	NE	sm	26,524,174	26,341,590	182,584	0.242	44,106	
8	Otter Trawl	OPEN	all	NE	lg	491,636	480,378	11,258	0.354	3,982	
9	Scallop Trawl	AA	GEN	MA	all	456	0	456	0.895	408	
11	Scallop Trawl	OPEN	GEN	MA	all	12	8	4	0.855	3	
12	Scallop Trawl	OPEN	LIM	MA	all	31,520	31,520				P
13	Otter Trawl, Twin	OPEN	all	MA	all	1,710,879	1,709,716	1,163	0.067	78	P
14	Otter Trawl, Twin	OPEN	all	NE	all	928,201	912,808	15,393	0.263	4,053	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	24,534	5,000	19,534	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	1	1				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	112	5	107	0.449	48	
19	Shrimp Trawl	OPEN	all	MA	all	22,941	22,941	0			P
20	Shrimp Trawl	OPEN	all	NE	all	147,285	147,285				P
22	Floating Trap	OPEN	all	NE	all	6	6				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0			
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	732	732	0			
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	8	0	8	0.965	8	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0			
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	0	0	0			
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	0	0	0			

**Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 23 individual species that compose the 14 species groups, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CVs were not used in the annual sample size analysis. Blank CV indicates either no discards estimated or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: LONGFIN INSHORE SQUID (*Doryteuthis [Amerigo] pealeii*)**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	254	0	254	0.250	64	
32	Scallop Dredge	AA	GEN	NE	all	3	0	3	0.960	3	
33	Scallop Dredge	AA	LIM	MA	all	3,230	7	3,223	0.251	809	
34	Scallop Dredge	AA	LIM	NE	all	2,803	0	2,803	0.307	860	
35	Scallop Dredge	OPEN	GEN	MA	all	965	86	879	0.451	396	
36	Scallop Dredge	OPEN	GEN	NE	all	244	0	244	0.645	157	
37	Scallop Dredge	OPEN	LIM	MA	all	1,755	24	1,731	0.300	519	
38	Scallop Dredge	OPEN	LIM	NE	all	1,269	0	1,269	0.268	340	
39	Danish Seine	OPEN	all	MA	all	0	0				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0			
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0			
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
49	Pots and Traps, Lobster	OPEN	all	NE	all	959	959	0			
50	Pots and Traps, Crab	OPEN	all	MA	all	0	0				P
51	Pots and Traps, Crab	OPEN	all	NE	all	0	0				P
52	Beam Trawl	OPEN	all	MA	all	36,955	36,955				P
53	Beam Trawl	OPEN	all	NE	all	3,810	3,810				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	217	0	217	1.028	223	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0			
	Confidential fleets					2,946	2,946				
	Other minor fleets					516,199	516,199				
					TOTAL	42,594,326	41,663,820	930,506	0.383	356,721	

See text for fleet abbreviations.

**Table 5C. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 Standardized Bycatch Reporting Methodology (SBRM) species groups combined, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CV were not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: 14 SBRM SPECIES GROUPS COMBINED**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline	OPEN	all	MA	all	1,395,876	1,155,953	239,923	0.293	70,288	
2	Longline	OPEN	all	NE	all	3,949,633	3,236,766	712,867	0.391	278,920	
3	Hand Line	OPEN	all	MA	all	295,388	295,388	0			P
4	Hand Line	OPEN	all	NE	all	2,502,557	2,420,243	82,314	1.272	104,681	
5	Otter Trawl	OPEN	all	MA	sm	40,617,554	22,783,110	17,834,444	0.091	1,625,413	
6	Otter Trawl	OPEN	all	MA	lg	39,321,081	15,847,982	23,473,099	0.109	2,548,548	
7	Otter Trawl	OPEN	all	NE	sm	63,571,021	52,410,056	11,160,966	0.085	947,546	
8	Otter Trawl	OPEN	all	NE	lg	87,963,325	49,838,534	38,124,791	0.089	3,388,088	
9	Scallop Trawl	AA	GEN	MA	all	1,942,298	770,913	1,171,385	0.279	326,485	
11	Scallop Trawl	OPEN	GEN	MA	all	184,981	94,556	90,425	0.404	36,527	
12	Scallop Trawl	OPEN	LIM	MA	all	65,861	65,861				P
13	Otter Trawl, Twin	OPEN	all	MA	all	2,315,245	2,041,787	273,458	0.644	176,096	P
14	Otter Trawl, Twin	OPEN	all	NE	all	1,189,172	956,977	232,195	0.106	24,583	P
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,348,709	1,278,037	70,672	0.000	0	P
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	84,471	84,471				P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	5,705,411	4,133,646	1,571,765	0.198	310,827	
19	Shrimp Trawl	OPEN	all	MA	all	227,203	24,682	202,521	0.000	0	P
20	Shrimp Trawl	OPEN	all	NE	all	216,788	216,788				P
22	Floating Trap	OPEN	all	NE	all	4,406	4,406				P
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	2,229,625	2,102,717	126,908	0.418	53,098	
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	6,400,571	6,049,093	351,477	0.158	55,623	
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	6,877,249	5,636,861	1,240,389	0.108	134,572	
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	2,286	2,286				P
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	9,795,676	7,288,013	2,507,663	0.144	359,867	
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	21,662,437	18,829,387	2,833,050	0.132	373,882	
29	Purse Seine	OPEN	all	MA	all	0	0				P
30	Purse Seine	OPEN	all	NE	all	55,868,638	55,865,565	3,073	1.113	3,422	

**Table 5C, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 Standardized Bycatch Reporting Methodology (SBRM) species groups combined, by fleet, based on July 2015 through June 2016 data. Dark shading indicates fleets not considered or with no Northeast Fisheries Observer Program trips in the annual analysis. These CV were not used in the annual sample size analysis. Blank CV indicates either no discards or discards equals 0. "P" indicates fleets with "pilot" designation.**

**Species: 14 SBRM SPECIES GROUPS COMBINED**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
31	Scallop Dredge	AA	GEN	MA	all	13,237,194	10,951,668	2,285,526	0.135	309,605	
32	Scallop Dredge	AA	GEN	NE	all	2,590,875	2,404,835	186,041	0.135	25,118	
33	Scallop Dredge	AA	LIM	MA	all	63,982,171	56,539,840	7,442,331	0.132	981,073	
34	Scallop Dredge	AA	LIM	NE	all	80,621,516	72,391,699	8,229,817	0.117	965,565	
35	Scallop Dredge	OPEN	GEN	MA	all	9,402,600	6,822,826	2,579,774	0.081	210,243	
36	Scallop Dredge	OPEN	GEN	NE	all	8,207,370	6,735,750	1,471,620	0.133	196,194	
37	Scallop Dredge	OPEN	LIM	MA	all	47,210,884	39,530,325	7,680,559	0.085	654,913	
38	Scallop Dredge	OPEN	LIM	NE	all	119,147,122	103,183,698	15,963,423	0.075	1,200,741	
39	Danish Seine	OPEN	all	MA	all	5,661	5,661				P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	2,817,886	2,815,151	2,735	0.204	559	
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	91,457,893	91,457,330	563	0.401	226	
43	Pots and Traps, Fish	OPEN	all	MA	all	406,663	297,394	109,269	0.786	85,869	
44	Pots and Traps, Fish	OPEN	all	NE	all	284,161	177,560	106,601	0.215	22,970	
45	Pots and Traps, Conch	OPEN	all	MA	all	4,431	3,847	584	0.401	234	
46	Pots and Traps, Conch	OPEN	all	NE	all	2,761	250	2,511	0.983	2,468	
47	Pots and Traps, Hagfish	OPEN	all	NE	all	0	0				P
48	Pots and Traps, Lobster	OPEN	all	MA	all	228,340	176,371	51,969	0.596	30,963	
49	Pots and Traps, Lobster	OPEN	all	NE	all	492,440	151,424	341,016	0.349	118,977	
50	Pots and Traps, Crab	OPEN	all	MA	all	312,429	312,429				P
51	Pots and Traps, Crab	OPEN	all	NE	all	2,540,660	2,540,660				P
52	Beam Trawl	OPEN	all	MA	all	246,704	246,704				P
53	Beam Trawl	OPEN	all	NE	all	247,236	247,236				P
54	Dredge, Other	OPEN	all	MA	all	0	0				P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	252,166,971	248,442,275	3,724,696	0.317	1,180,835	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	199,602,039	198,441,125	1,160,914	0.236	273,900	
	Confidential fleets					3,388,896	3,388,896				
	Other minor fleets					1,392,414	1,392,414				
	<b>TOTAL</b>					<b>1,255,734,776</b>	<b>1,102,091,443</b>	<b>153,643,333</b>	<b>0.034</b>	<b>5,251,126</b>	

See text for fleet abbreviations.

**Table 6. The number of sea days needed to achieve a 30% coefficient of variation of the discard estimate for each of the 14 fish and invertebrate species groups, the number of pilot sea days, the number of minimum pilot sea days, and the maximum number of sea days needed for each fleet (2017 Sea Days Needed) for fish and invertebrate species groups based on July 2015 through June 2016 data. Bold red font indicates basis for fleet sea days. "P" indicates fleets with "pilot" designation. Species group abbreviations are given in Table 1.**

Row	Fleet Gear Type	Access Area	Trip Category	Region	Mesh Group	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Days	Min Pilot Days	2017 Sea Days Needed	Pilot	
1	Longline	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	94	94		
2	Longline	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	44	0	0	0	22	14	44		
3	Hand Line	OPEN	all	MA	all	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	13	65	P
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	14	14		
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	0	0	719	450	0	1,010	189	323	130	0	0	141	28	1,010		
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	183	125	0	80	167	172	0	0	186	30	183		
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	331	1,946	490	520	448	468	392	0	0	209	35	1,946		
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	5,256	0	0	314	353	598	342	301	796	0	0	318	36	5,256		
9	Scallop Trawl	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	50	0	0	0	13	13	50		
10	Scallop Trawl	AA	LIM	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	
11	Scallop Trawl	OPEN	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17	17		
12	Scallop Trawl	OPEN	LIM	MA	all	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	P	
13	Otter Trawl, Twin	OPEN	all	MA	all	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	P	
14	Otter Trawl, Twin	OPEN	all	NE	all	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	89	P	
15	Otter Trawl, Ruhle	OPEN	all	MA	lg	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	P	
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	P	
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	P	
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0	0	0	0	0	219	0	0	0	0	0	0	102	102	219		
19	Shrimp Trawl	OPEN	all	MA	all	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	P	
20	Shrimp Trawl	OPEN	all	NE	all	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	P	
21	Floating Trap	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P	
22	Floating Trap	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P	
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	12	12		
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	116	0	0	0	46	13	116		
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	0	0	0	0	0	0	0	0	0	33	0	0	0	0	41	14	33		
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	P	
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	240	0	0	0	80	21	240		
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	0	0	0	0	0	0	162	0	0	197	507	0	0	0	102	19	507		
29	Purse Seine	OPEN	all	MA	all	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	P	
30	Purse Seine	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	21	21		
31	Scallop Dredge	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	26	26		
32	Scallop Dredge	AA	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	23	23		
33	Scallop Dredge	AA	LIM	MA	all	0	0	0	0	154	0	82	0	0	125	0	0	0	0	100	85	154		
34	Scallop Dredge	AA	LIM	NE	all	0	0	0	0	187	0	128	0	0	101	0	0	0	0	114	93	187		
35	Scallop Dredge	OPEN	GEN	MA	all	0	0	0	0	0	0	55	0	0	16	0	0	0	0	79	26	55		

**Table 6, continued. The number of sea days needed to achieve a 30% coefficient of variation of the discard estimate for each of the 14 fish and invertebrate species groups, the number of pilot sea days, the number of minimum pilot sea days, and the maximum number of sea days needed for each fleet (2017 Sea Days Needed) for fish and invertebrate species groups based on July 2015 through June 2016 data. Bold red font indicates basis for fleet sea days. "P" indicates fleets with "pilot" designation. Species group abbreviations are given in Table 1.**

Row	Fleet Gear Type	Access Area	Trip Category	Region	Mesh Group	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Days	Min Pilot Days	2017 Sea Days Needed	Pilot
36	Scallop Dredge	OPEN	GEN	NE	all	0	0	0	0	0	0	41	0	0	<b>58</b>	0	0	0	0	85	18	58	
37	Scallop Dredge	OPEN	LIM	MA	all	0	0	0	0	0	0	<b>46</b>	0	0	34	0	0	0	0	103	97	46	
38	Scallop Dredge	OPEN	LIM	NE	all	0	0	0	0	406	0	272	160	489	130	0	<b>563</b>	0	0	185	109	563	
39	Danish Seine	OPEN	all	MA	all	7	7	7	7	7	7	7	7	7	7	7	7	7	7	<b>7</b>	7	7	P
40	Mid-water Paired & Single Trawl	AA	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	<b>25</b>	25	
41	Mid-water Paired & Single Trawl	OPEN	all	MA	all	13	13	13	13	13	13	13	13	13	13	13	13	13	13	<b>13</b>	13	13	P
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	<b>40</b>	40	
43	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	<b>13</b>	13	
44	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	<b>10</b>	10	
45	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	<b>12</b>	12	
46	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	<b>9</b>	9	
47	Pots and Traps, Hagfish	OPEN	all	NE	all	97	97	97	97	97	97	97	97	97	97	97	97	97	97	<b>97</b>	97	97	P
48	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37	<b>15</b>	15	
49	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0	<b>602</b>	0	0	0	0	0	0	0	0	0	0	459	17	602	
50	Pots and Traps, Crab	OPEN	all	MA	all	28	28	28	28	28	28	28	28	28	28	28	28	28	28	<b>28</b>	28	28	P
51	Pots and Traps, Crab	OPEN	all	NE	all	83	83	83	83	83	83	83	83	83	83	83	83	83	83	<b>83</b>	83	83	P
52	Beam Trawl	OPEN	all	MA	all	31	31	31	31	31	31	31	31	31	31	31	31	31	31	<b>31</b>	31	31	P
53	Beam Trawl	OPEN	all	NE	all	13	13	13	13	13	13	13	13	13	13	13	13	13	13	<b>13</b>	13	13	P
54	Dredge, Other	OPEN	all	MA	all	11	11	11	11	11	11	11	11	11	11	11	11	11	11	<b>11</b>	10	11	P
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	<b>21</b>	21	
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	<b>16</b>	16	
					<b>Total</b>	<b>641</b>	<b>641</b>	<b>641</b>	<b>6,499</b>	<b>1,388</b>	<b>1,691</b>	<b>4,320</b>	<b>1,988</b>	<b>3,258</b>	<b>2,394</b>	<b>2,857</b>	<b>2,694</b>	<b>641</b>	<b>641</b>	<b>3,686</b>	<b>1,725</b>	<b>12,278</b>	

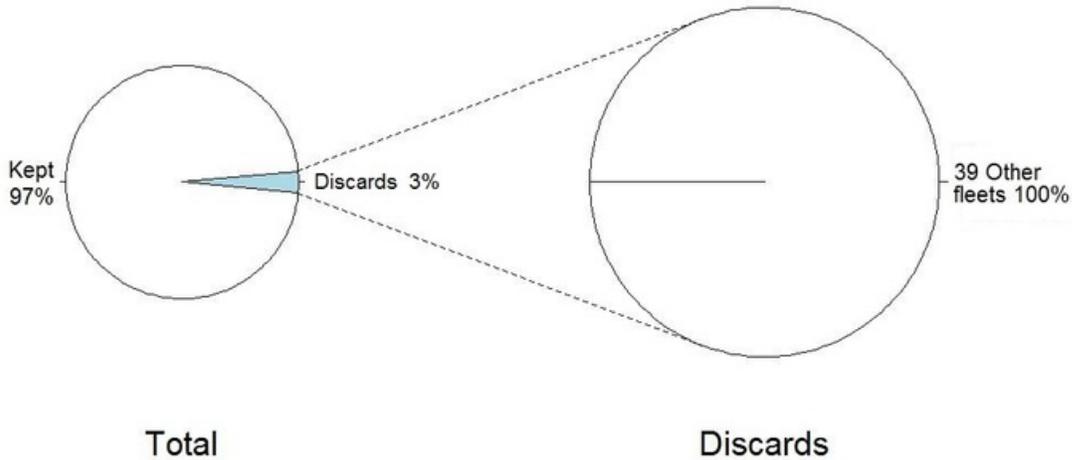
**Table 7. Number of sea days, trips, and percentage of trips (based upon previous industry activity) needed to achieve a 30% coefficient of variation of the discard estimate, by fleet and species group, based on July 2015 through June 2016 data. See Table 1 for species group abbreviations.**

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Species Group	Sea Days	Trips	% of Trips
2	Longline	OPEN	all	NE	all	DOG	44	44	5
5	Otter Trawl	OPEN	all	MA	sm	GFS	1,010	475	14
						SBM	719	338	10
						MONK	450	212	6
						DOG	323	152	5
						SKATE	189	89	3
						FSB	130	61	2
6	Otter Trawl	OPEN	all	MA	lg	MONK	183	79	2
						FSB	172	74	2
						DOG	167	72	2
						GFL	125	54	1
						SKATE	80	34	1
7	Otter Trawl	OPEN	all	NE	sm	MONK	1,946	740	19
						GFS	520	198	5
						GFL	490	187	5
						DOG	468	178	4
						SKATE	448	170	4
						FSB	392	149	4
						SBM	331	126	3
8	Otter Trawl	OPEN	all	NE	lg	RCRAB	5,256	1,800	33
						FSB	796	273	5
						GFS	598	205	4
						GFL	353	121	2
						SKATE	342	117	2
						MONK	314	108	2
						DOG	301	103	2
9	Scallop Trawl	AA	GEN	MA	all	DOG	50	24	15
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	GFL	219	26	15
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	DOG	116	112	5
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	SKATE	33	28	2
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	DOG	240	157	6
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	DOG	507	339	10
						SKATE	197	132	4
						MONK	162	108	3
33	Scallop Dredge	AA	LIM	MA	all	SCAL	154	21	4
						SKATE	125	17	3
						MONK	82	11	2
34	Scallop Dredge	AA	LIM	NE	all	SCAL	187	24	4
						MONK	128	17	3
						SKATE	101	13	2

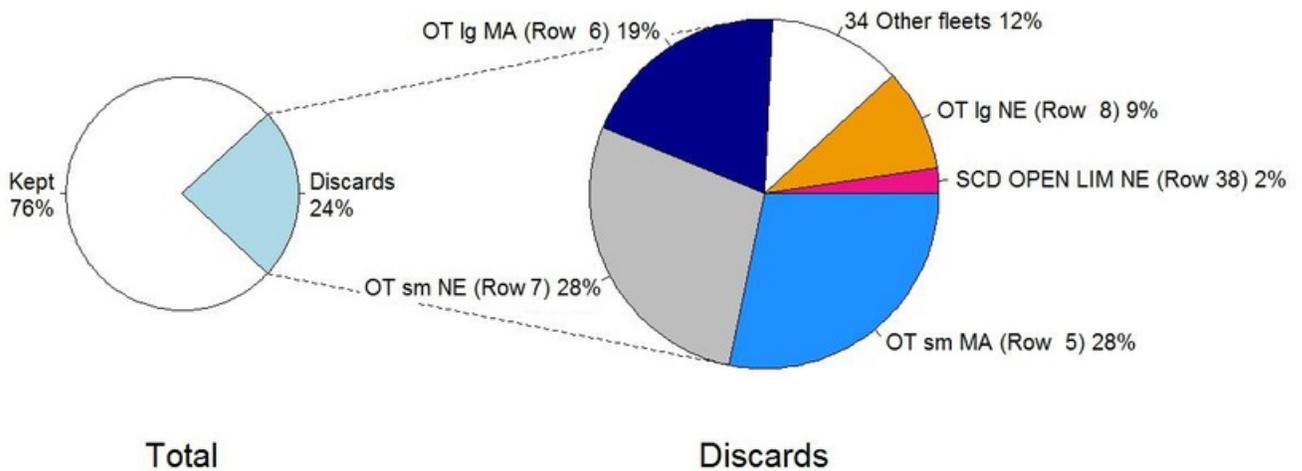
**Table 7, continued. Number of sea days, trips, and percentage of trips (based upon previous industry activity) needed to achieve a 30% coefficient of variation of the discard estimate, by fleet and species group, based on July 2015 through June 2016 data. See Table 1 for species group abbreviations.**

<b>Fleet Row</b>	<b>Gear Type</b>	<b>Access Area</b>	<b>Trip Category</b>	<b>Region</b>	<b>Mesh Group</b>	<b>Species Group</b>	<b>Sea Days</b>	<b>Trips</b>	<b>% of Trips</b>
35	Scallop Dredge	OPEN	GEN	MA	all	MONK	55	26	1
						SKATE	16	7	0
36	Scallop Dredge	OPEN	GEN	NE	all	SKATE	58	40	1
						MONK	41	28	1
37	Scallop Dredge	OPEN	LIM	MA	all	MONK	46	5	1
						SKATE	34	4	1
38	Scallop Dredge	OPEN	LIM	NE	all	FSB	563	59	6
						GFS	489	51	6
						SCAL	406	43	5
						MONK	272	29	3
						GFL	160	17	2
						SKATE	130	14	1
49	Pots and Traps, Lobster	OPEN	all	NE	all	RCRAB	602	463	2

## SPECIES: BLUEFISH

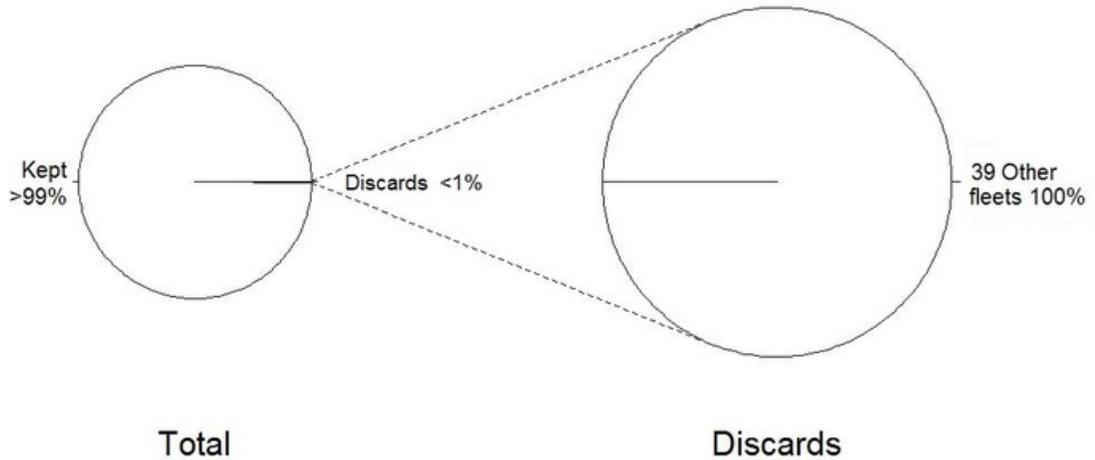


## SPECIES: FLUKE - SCUP - BLACK SEA BASS



**Figure 1A. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations. Top: bluefish (*Pomatomus saltatrix*); bottom: fluke (*Paralichthys dentatus*) - scup (*Stenotomus chrysops*) - black sea bass (*Centropristis striata*).**

## SPECIES: HERRING, ATLANTIC



## SPECIES: LARGE MESH GROUNDFISH

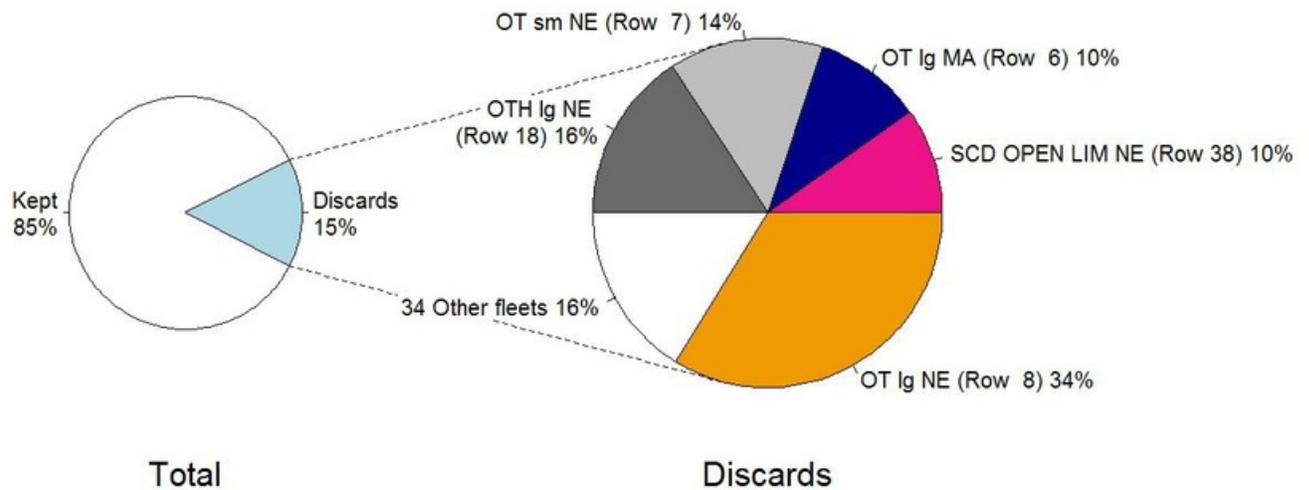
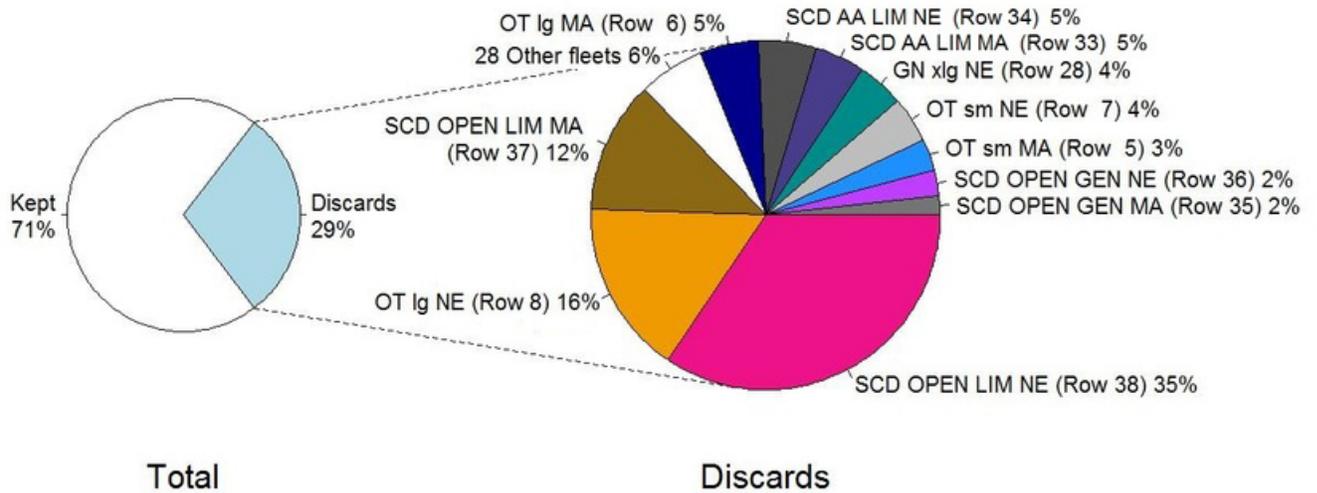


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: *Atlantic herring (Clupea harengus)*; bottom: large mesh groundfish.

## SPECIES: MONKFISH



## SPECIES: RED DEESEA CRAB

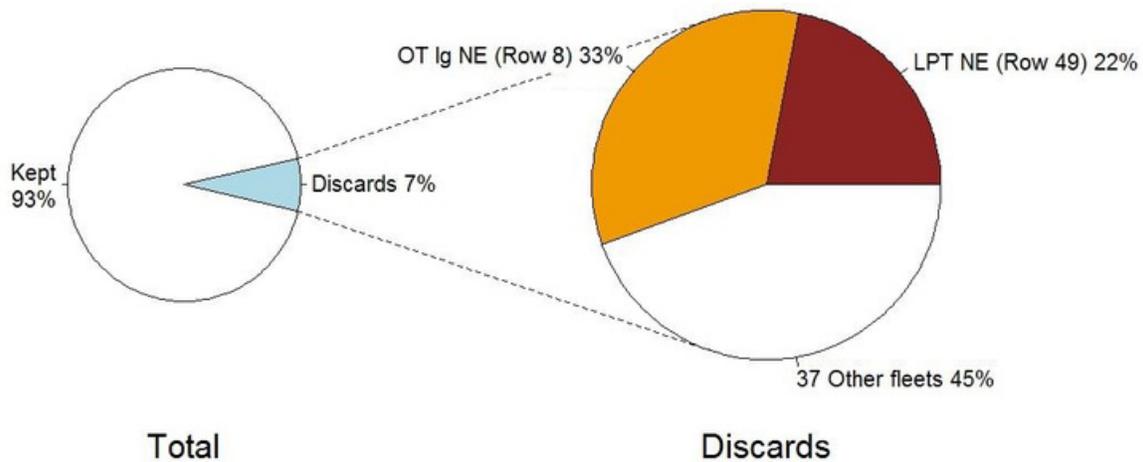
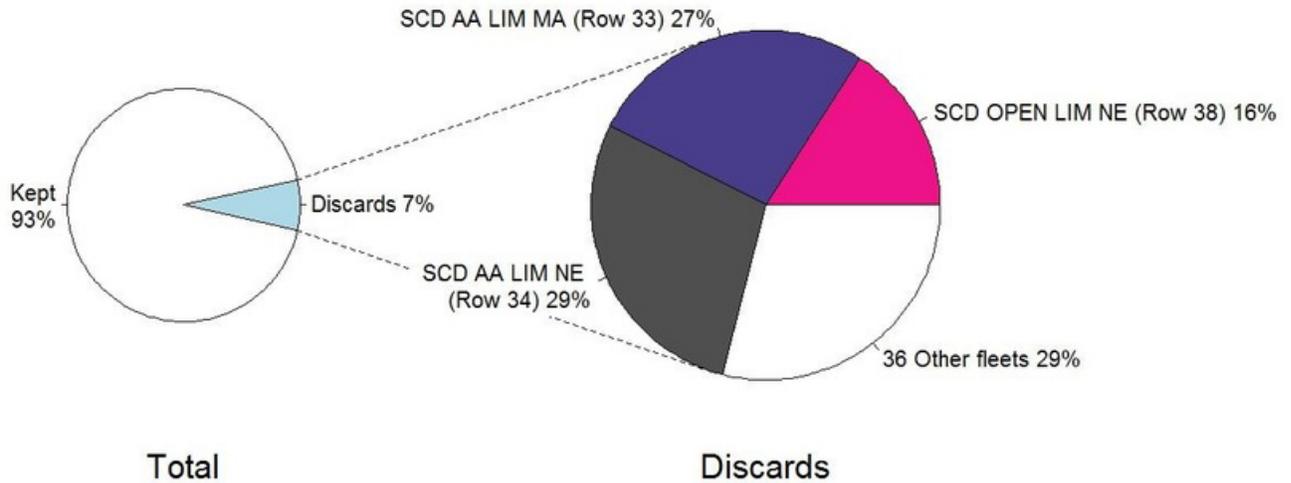


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: monkfish (*Lophius americanus*); bottom: red deepsea crab (*Chaceon quinque-dens*).

## SPECIES: SEA SCALLOP



## SPECIES: SKATE COMPLEX

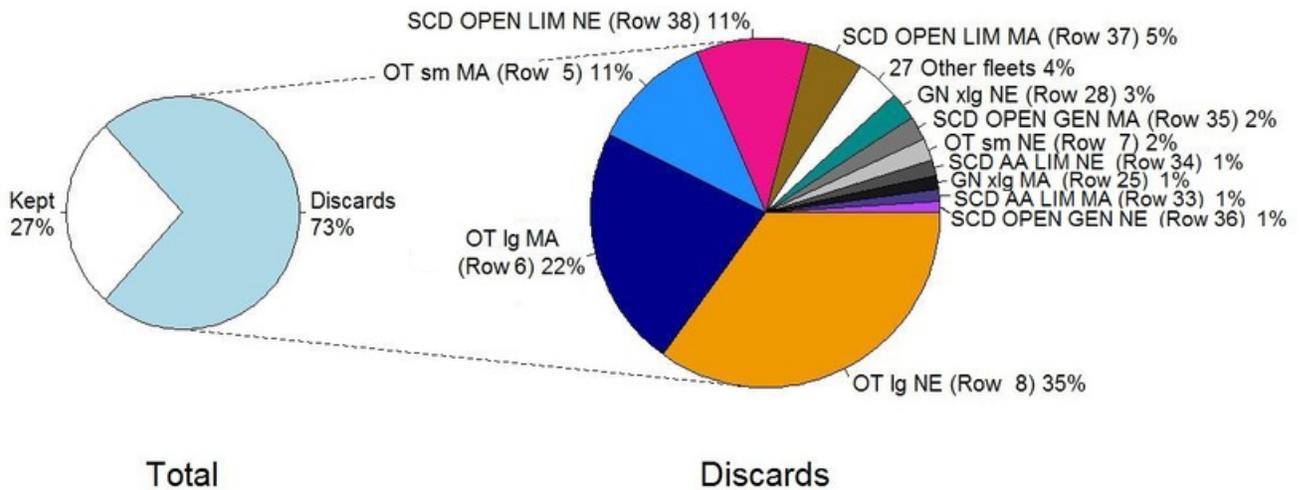
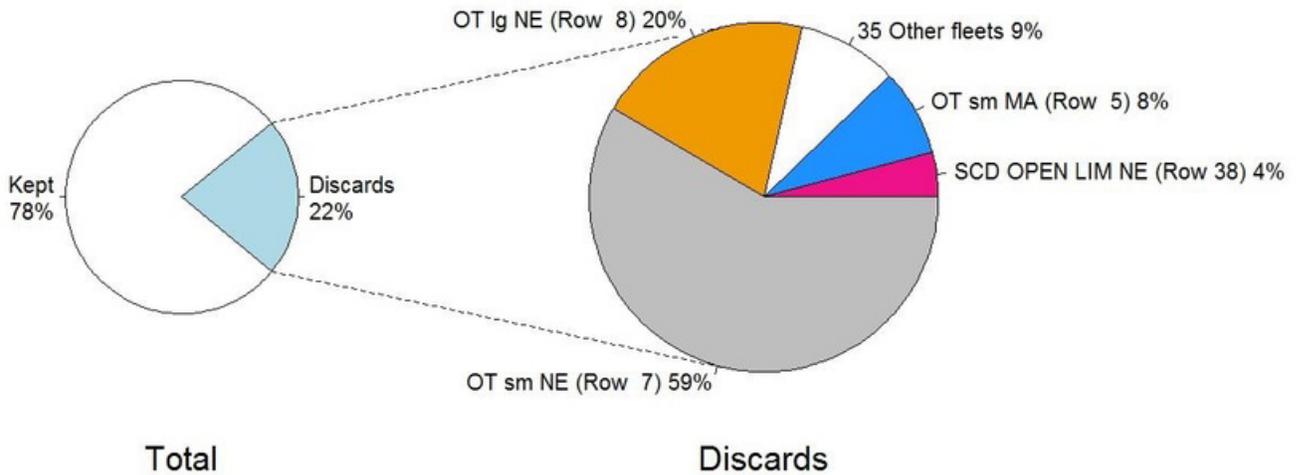


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: sea scallop (*Placopecten magellanicus*); bottom: skate complex (Rajidae).

## SPECIES: SMALL MESH GROUNDFINH



## SPECIES: SPINY DOGFISH

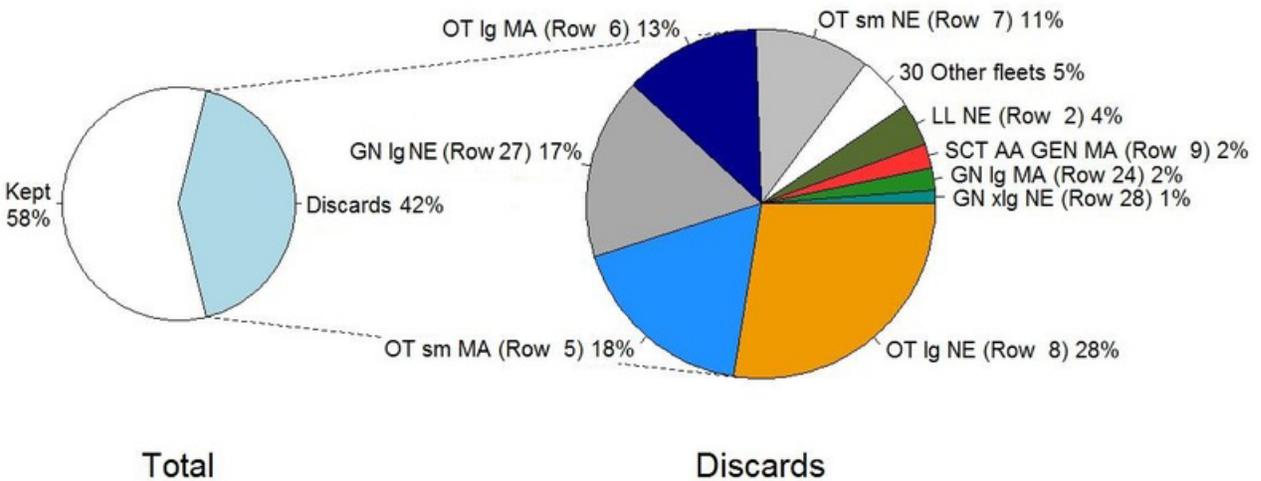
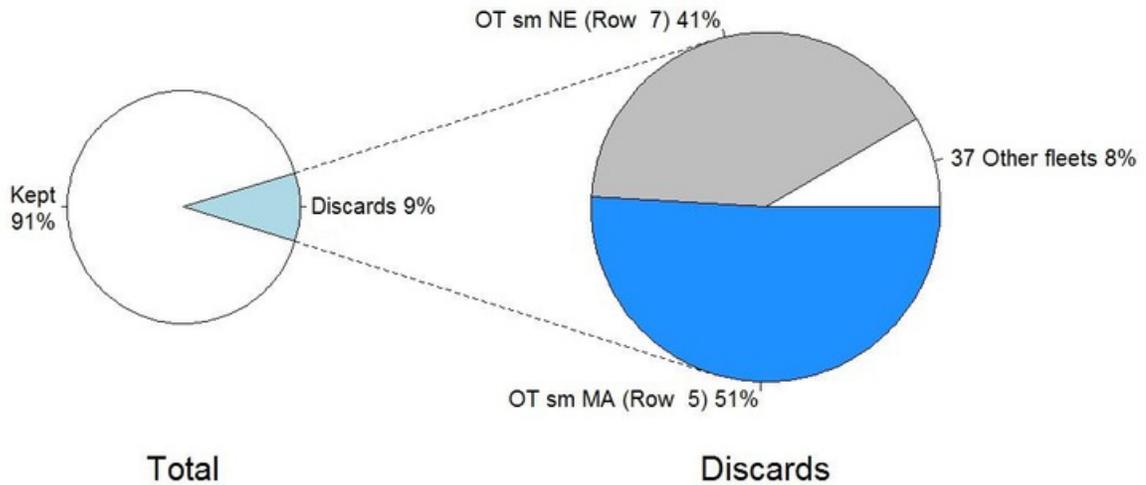


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: small mesh groundfish; bottom: spiny dogfish (*Squalus acanthias*).

## SPECIES: SQUID - BUTTERFISH - MACKEREL



## SPECIES: SURFCLAM - OCEAN QUAHOG

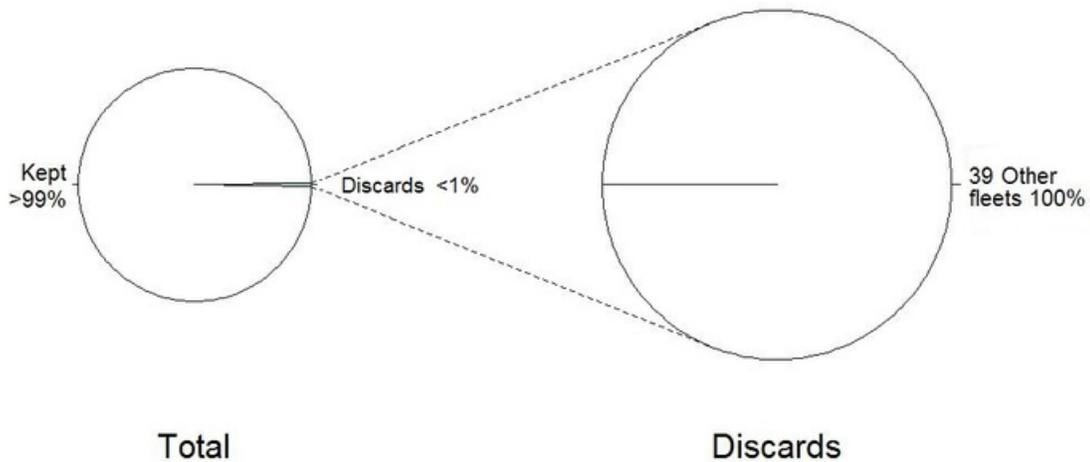


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: squid (*Doryteuthis [Amerigo] pealeii*, *Illex illecebrosus*) – butterfish (*Peprilus triacanthus*) – Atlantic mackerel (*Scomber scombrus*); bottom: surfclam (*Spisula solidissima*) - ocean quahog (*Arctica islandica*).

# SPECIES: TILEFISH

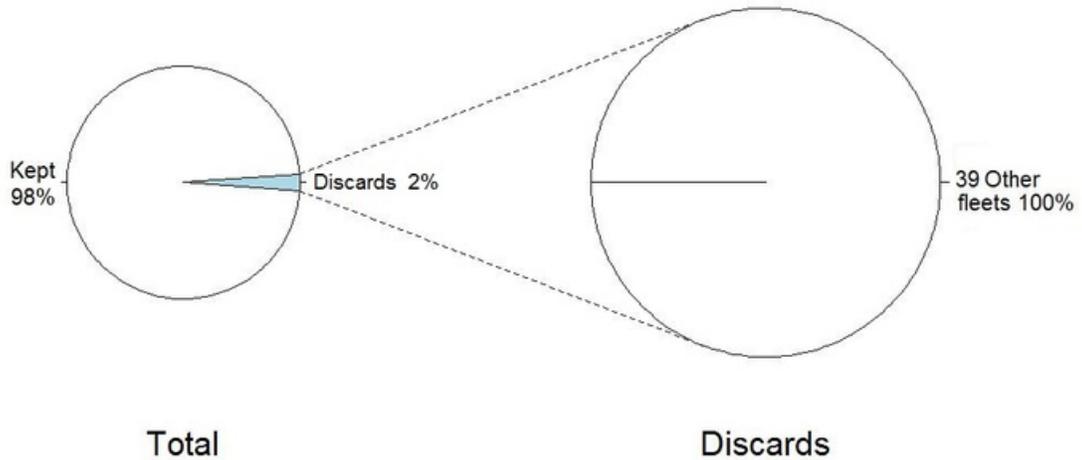
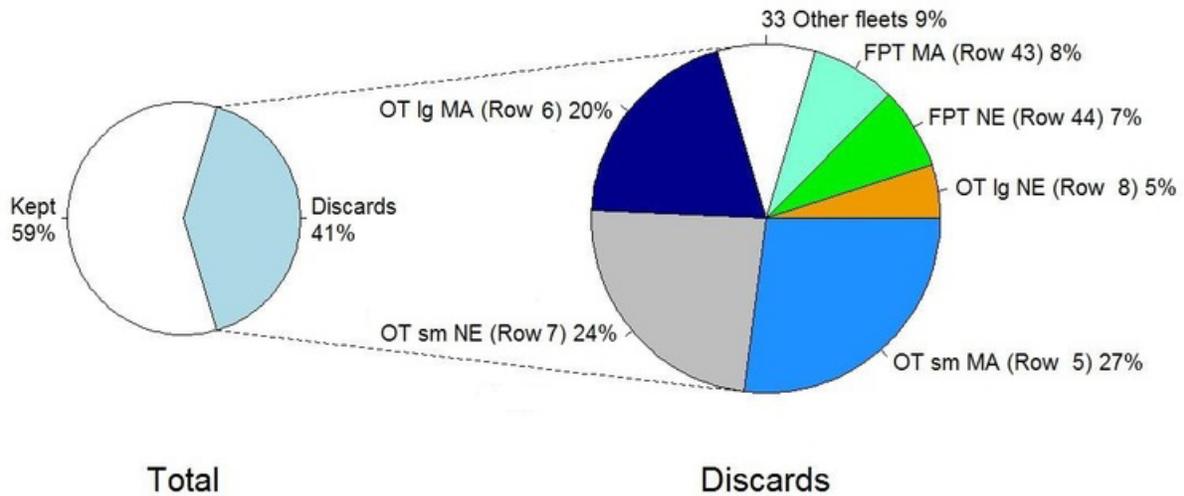


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.  
Top: tilefish (*Lopholatilus chamaeleonticeps*).

## SPECIES: BLACK SEA BASS



## SPECIES: FLUKE

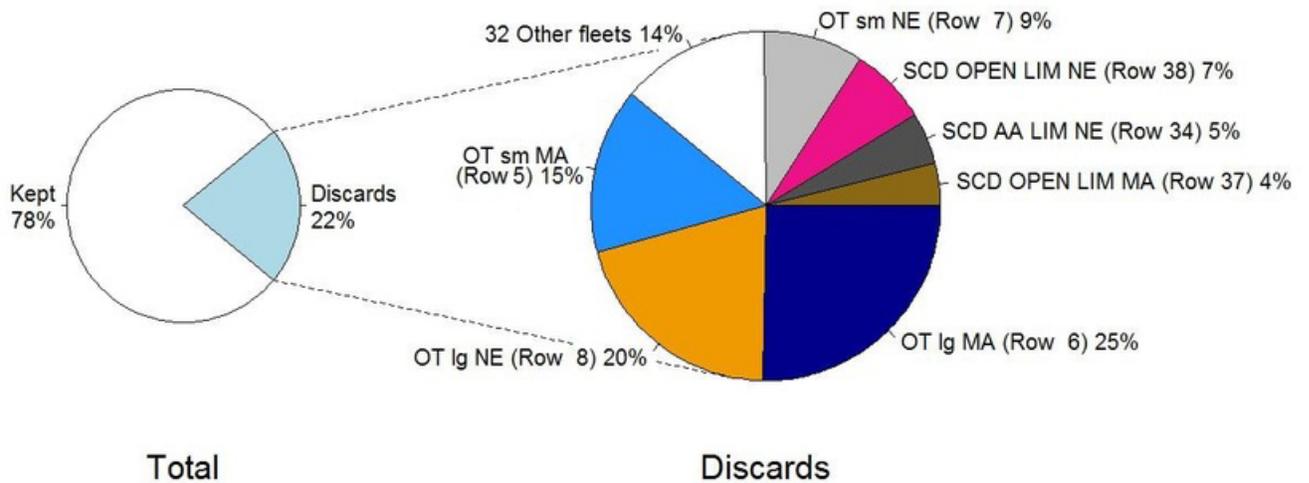
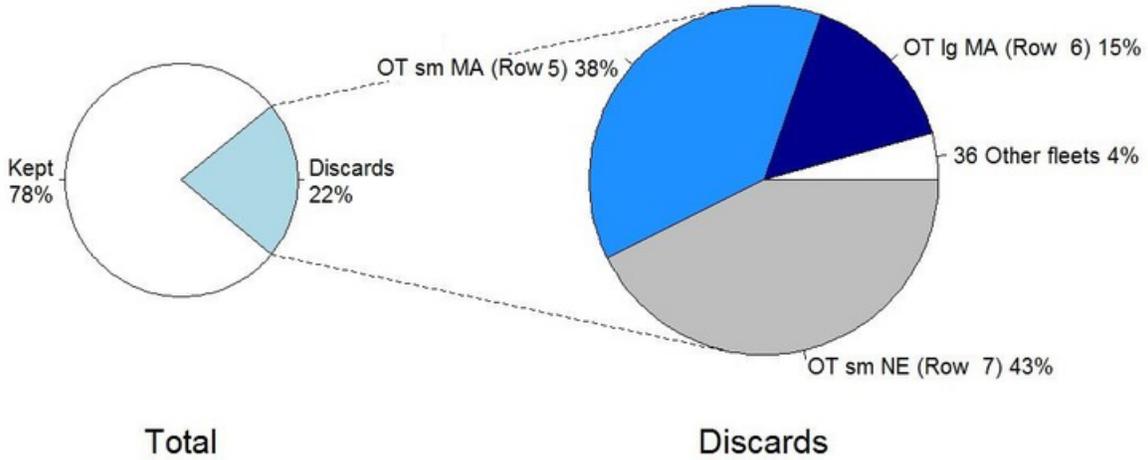


Figure 1B. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.  
 Top: black sea bass (*Centropristis striata*); bottom: fluke (*Paralichthys dentatus*).

## SPECIES: SCUP



## SPECIES: AMERICAN PLAICE

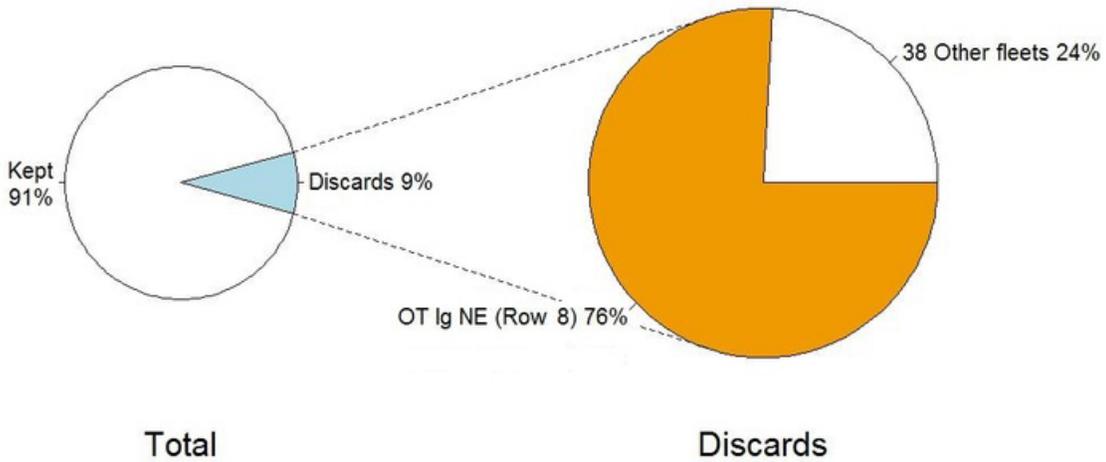
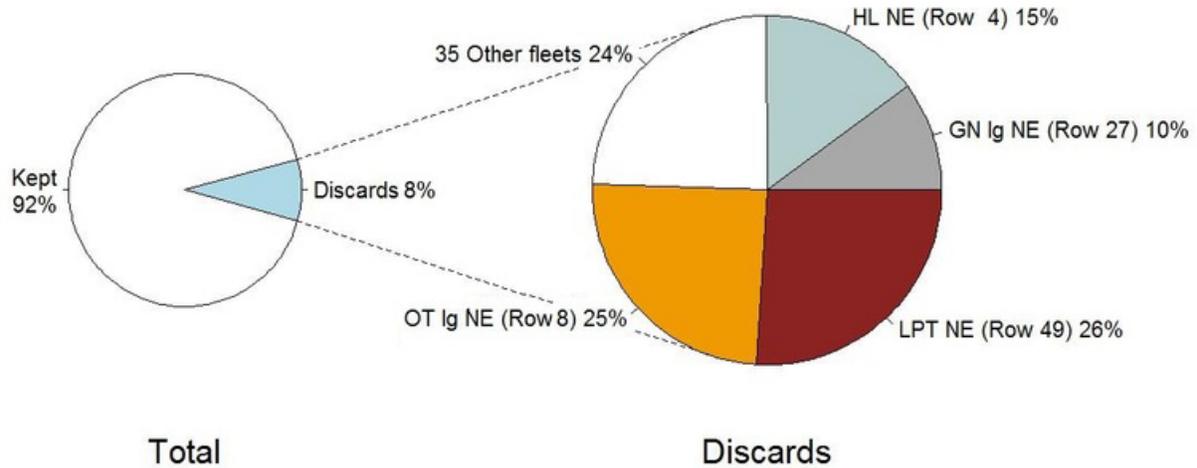


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: scup (*Stenotomus chrysops*); bottom: American plaice (*Hippoglossoides platessoides*).

## SPECIES: ATLANTIC COD



## SPECIES: ATLANTIC HALIBUT

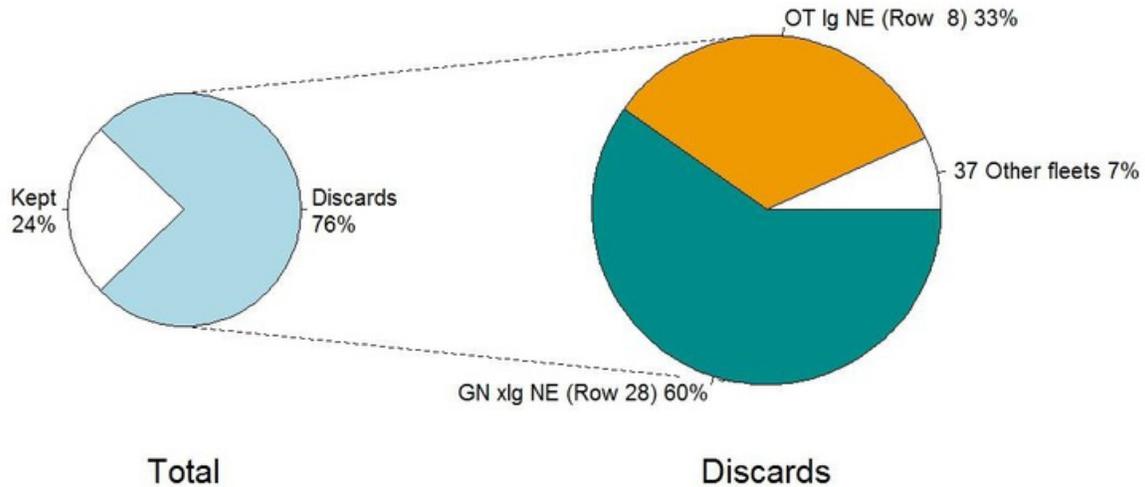
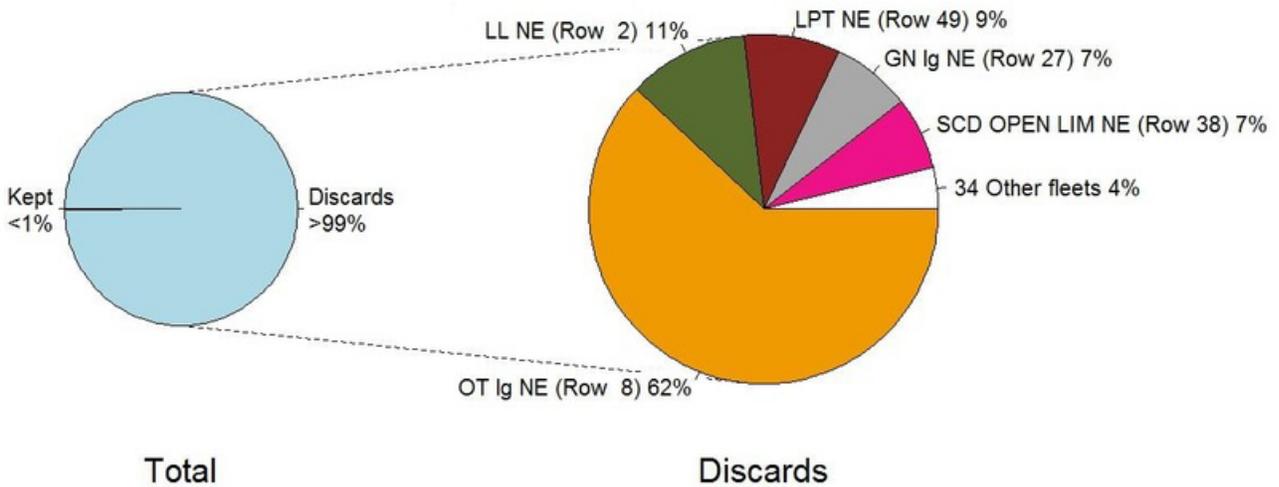


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: Atlantic cod (*Gadus morhua*); bottom: Atlantic halibut (*Hippoglossus hippoglossus*).

## SPECIES: ATLANTIC WOLFFISH



## SPECIES: HADDOCK

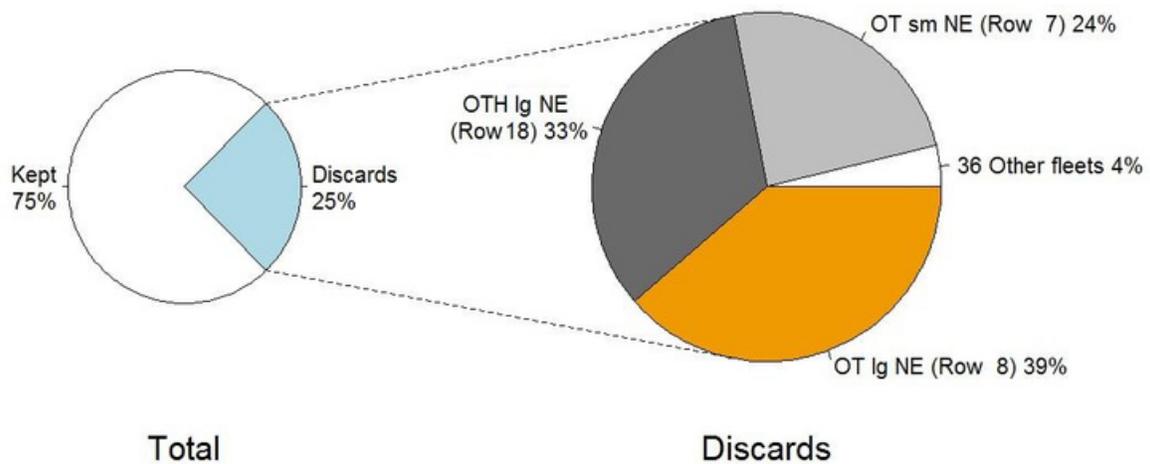
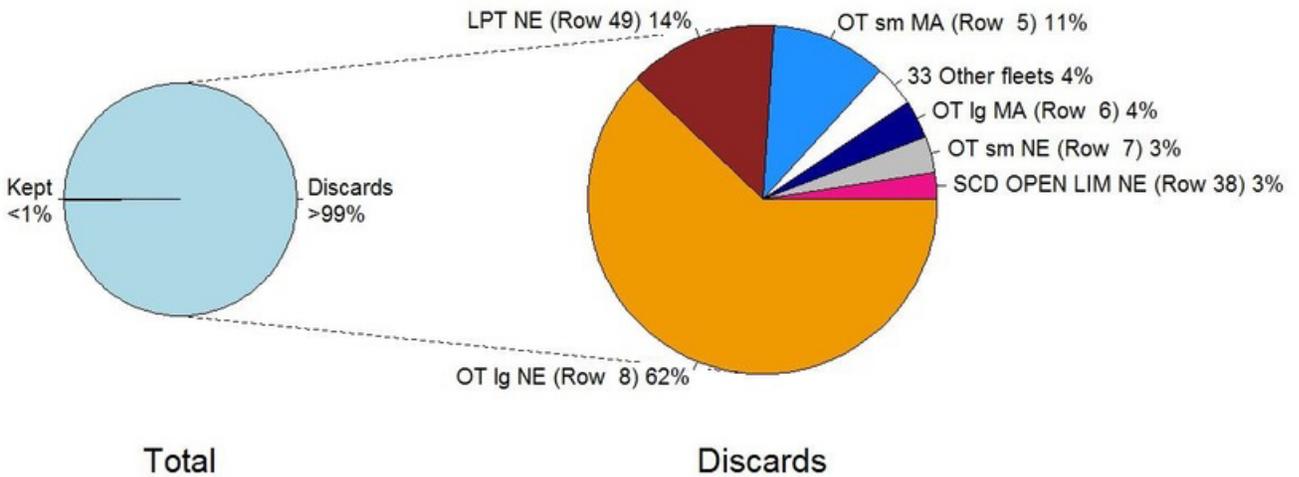


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: Atlantic wolffish (*Anarhichas lupus*); bottom: haddock (*Melanogrammus aeglefinus*).

## SPECIES: OCEAN POUT



## SPECIES: POLLOCK

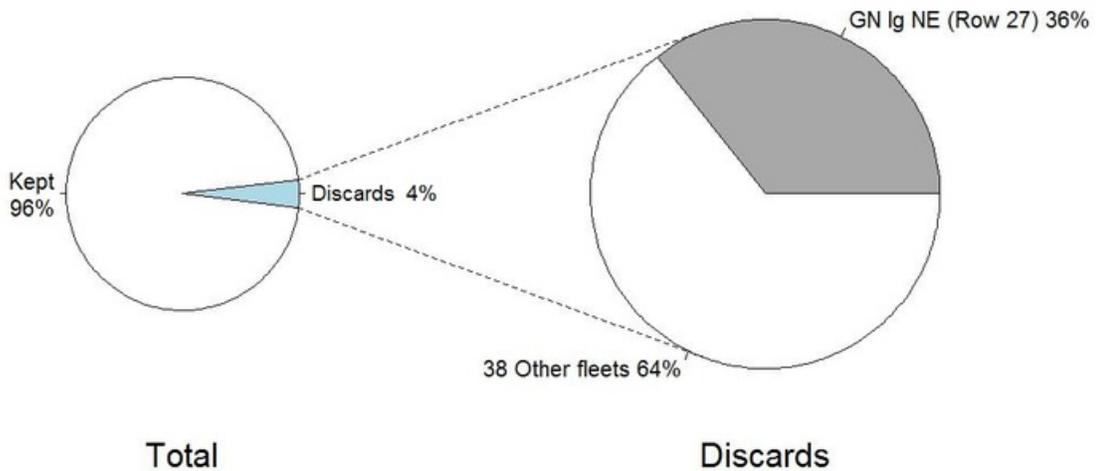
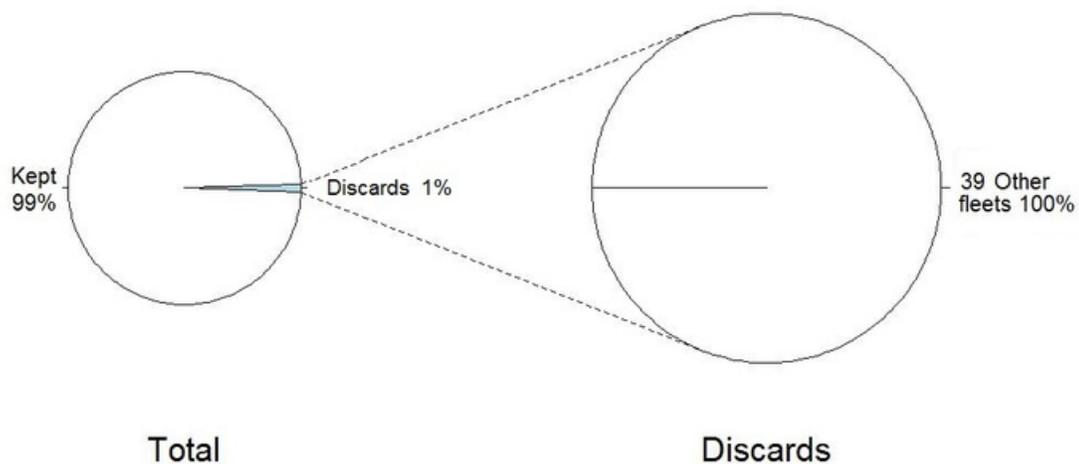


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: ocean pout (*Zoarces americanus*); bottom: pollock (*Pollachius virens*).

## SPECIES: REDFISH



## SPECIES: WHITE HAKE

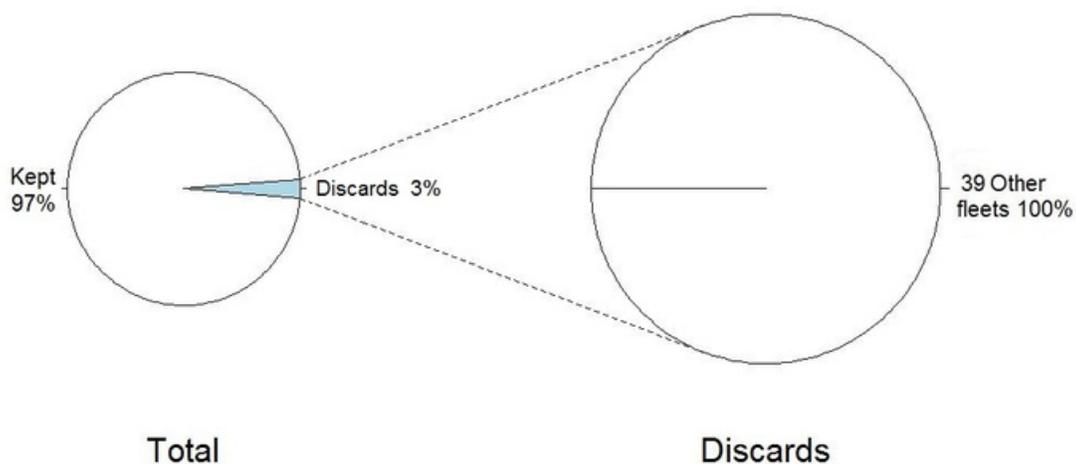
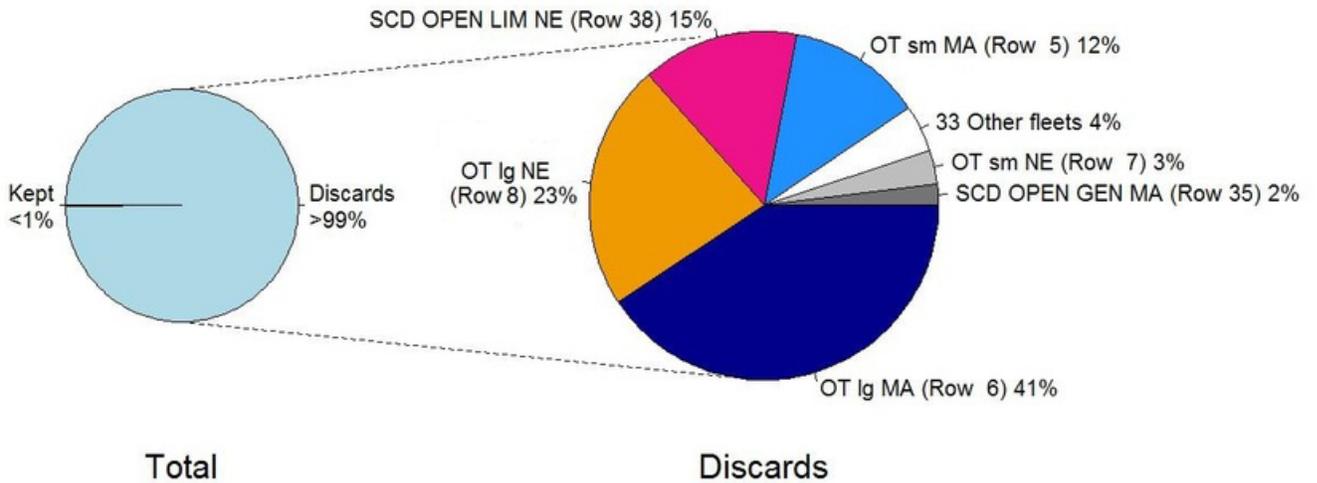


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: redfish (*Sebastes fasciatus*); bottom: white hake (*Urophycis tenuis*).

## SPECIES: WINDOWPANE FLOUNDER



## SPECIES: WINTER FLOUNDER

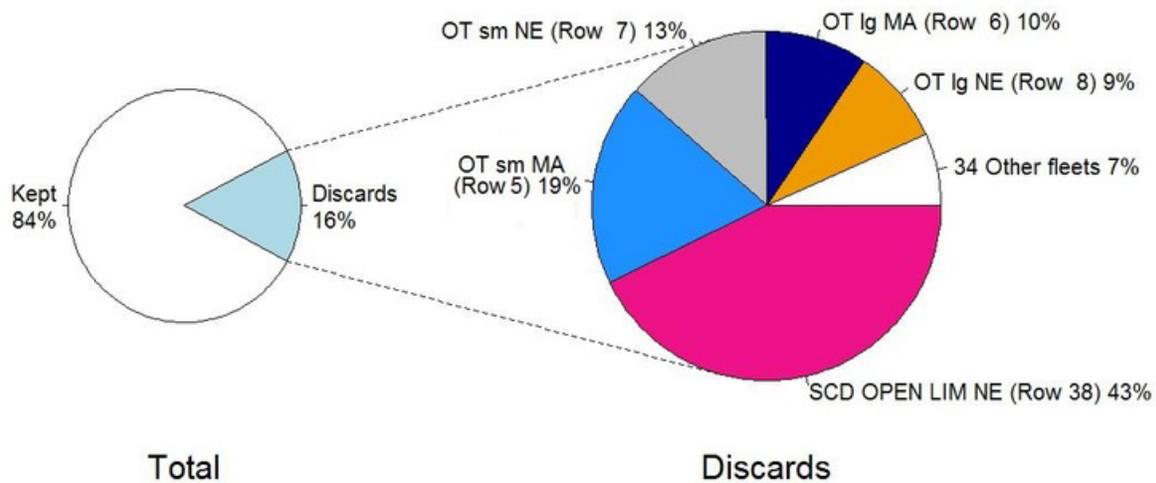
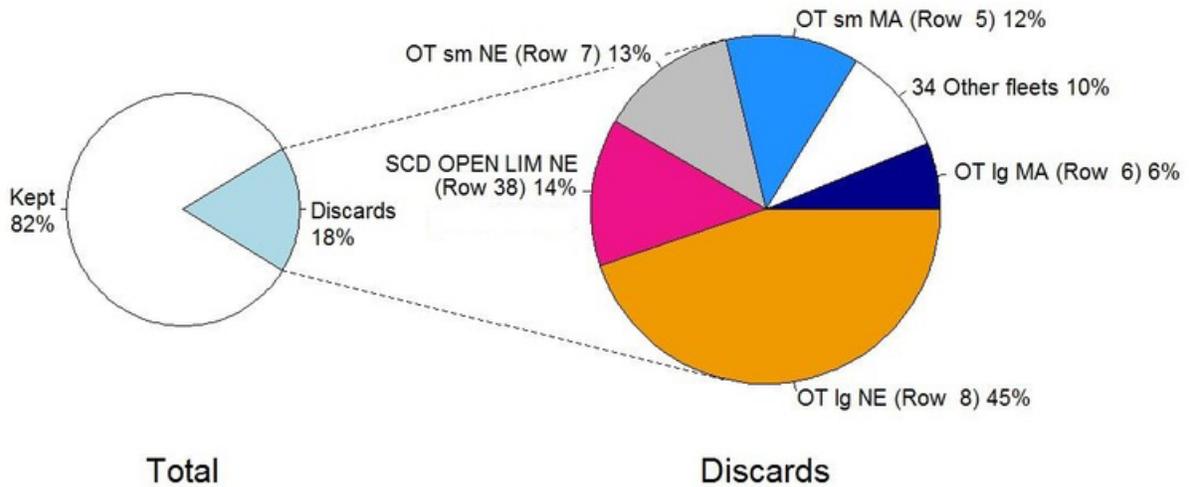


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: windowpane flounder (*Scophthalmus aquosus*); bottom: winter flounder (*Pseudopleuronectes americanus*).

## SPECIES: WITCH FLOUNDER



## SPECIES: YELLOWTAIL FLOUNDER

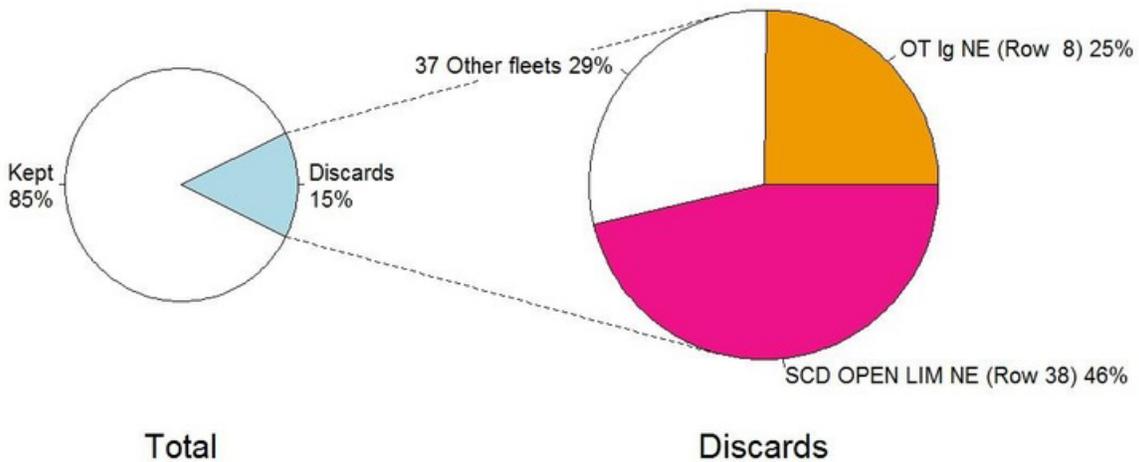
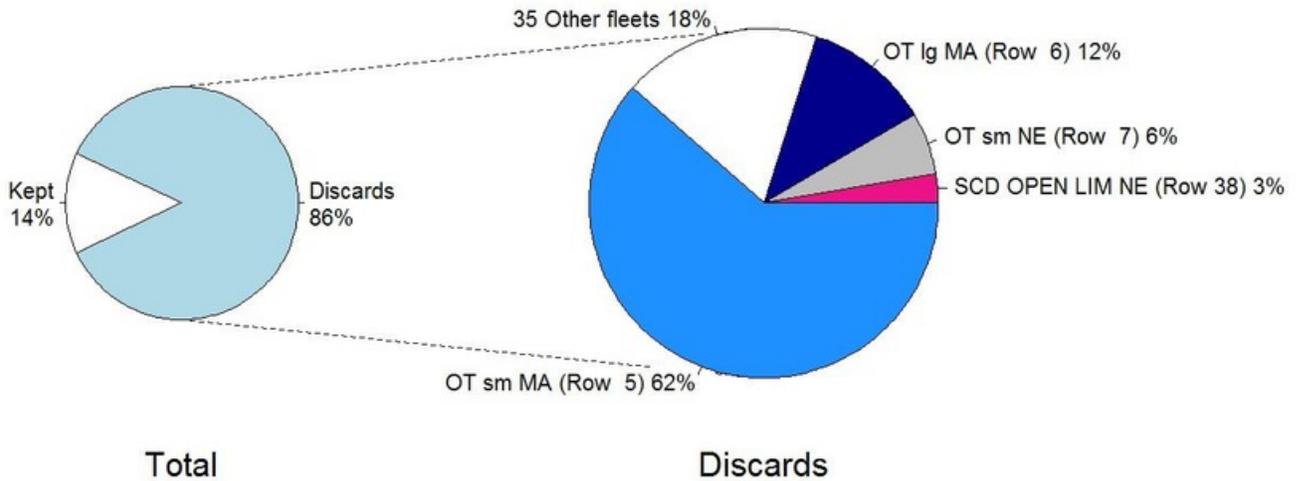


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: witch flounder (*Glyptocephalus cynoglossus*); bottom: yellowtail flounder (*Limanda ferruginea*).

## SPECIES: OFFSHORE HAKE



## SPECIES: RED HAKE

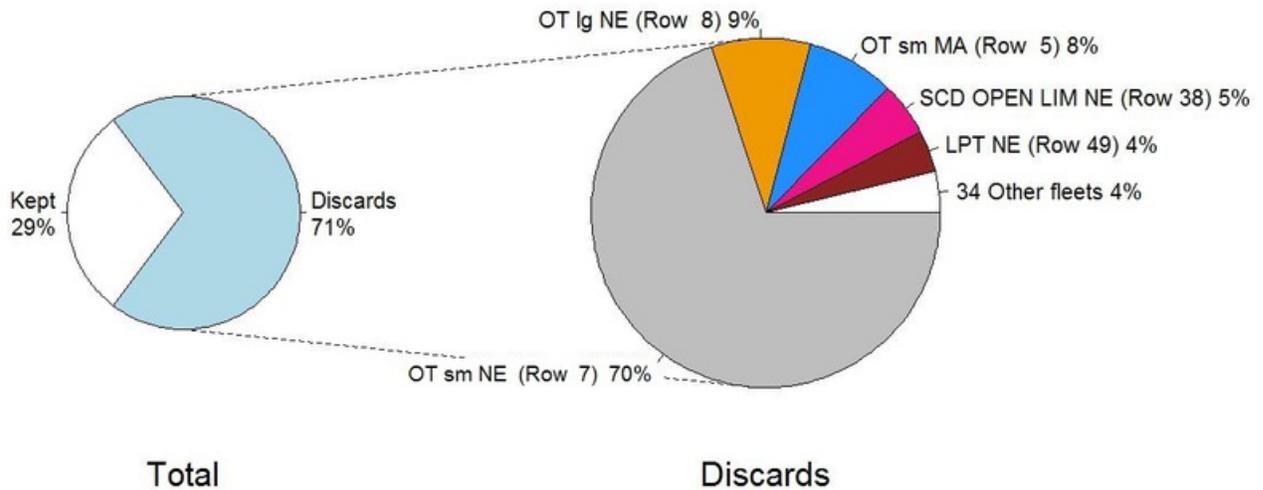
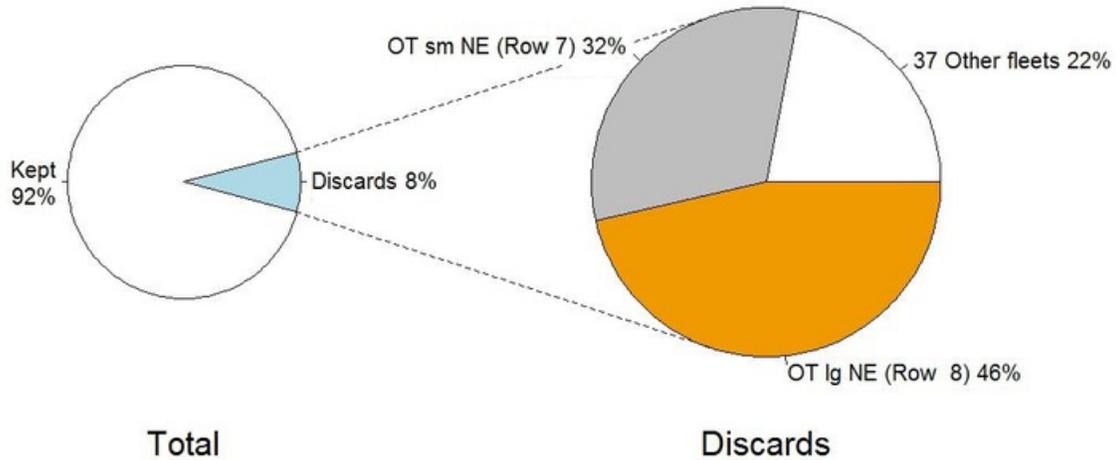


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: offshore hake (*Merluccius albidus*); bottom: red hake (*Urophycis chuss*).

## SPECIES: SILVER HAKE



## SPECIES: ATLANTIC MACKEREL

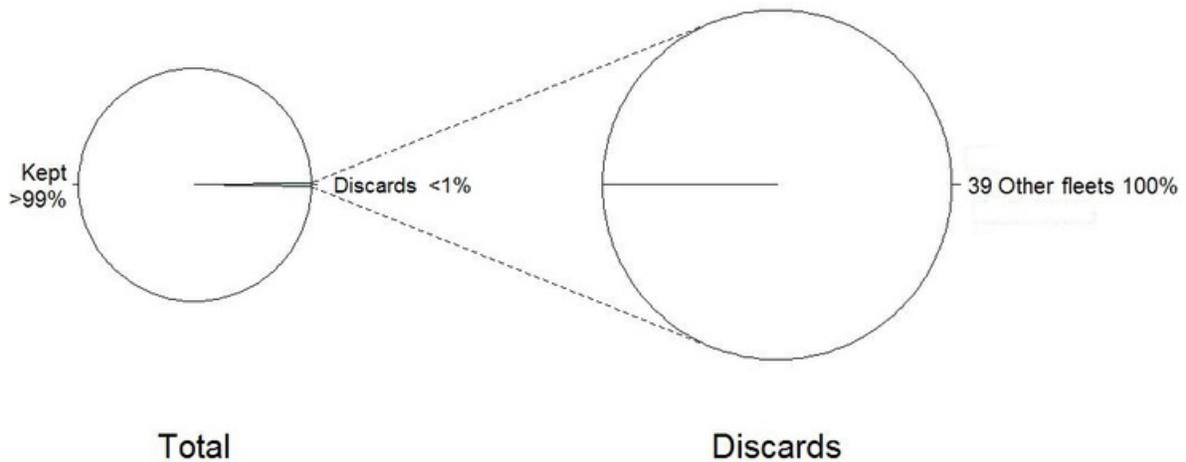
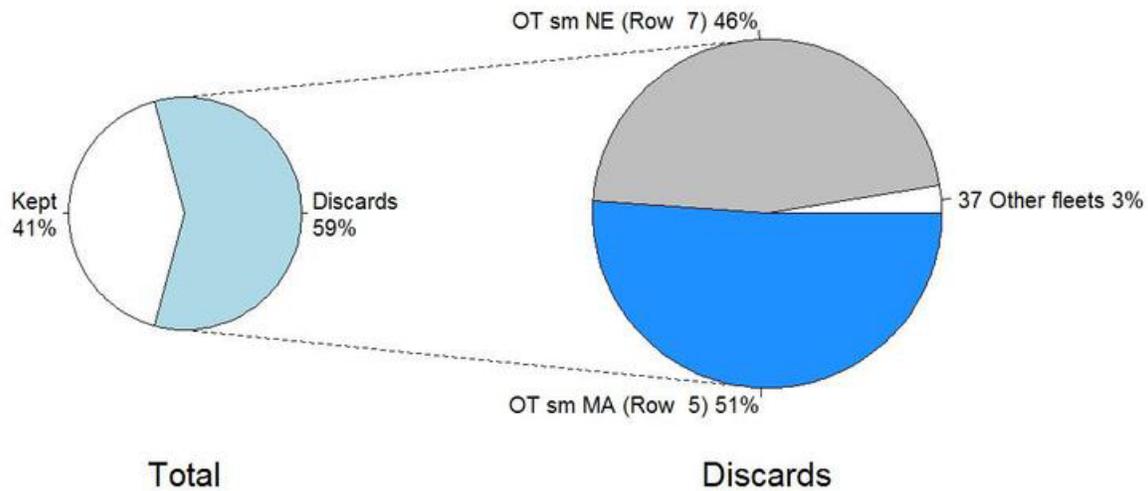


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: silver hake (*Merluccius bilinearis*); bottom: Atlantic mackerel (*Scomber scombrus*).

## SPECIES: BUTTERFISH



## SPECIES: NORTHERN SHORTFIN SQUID

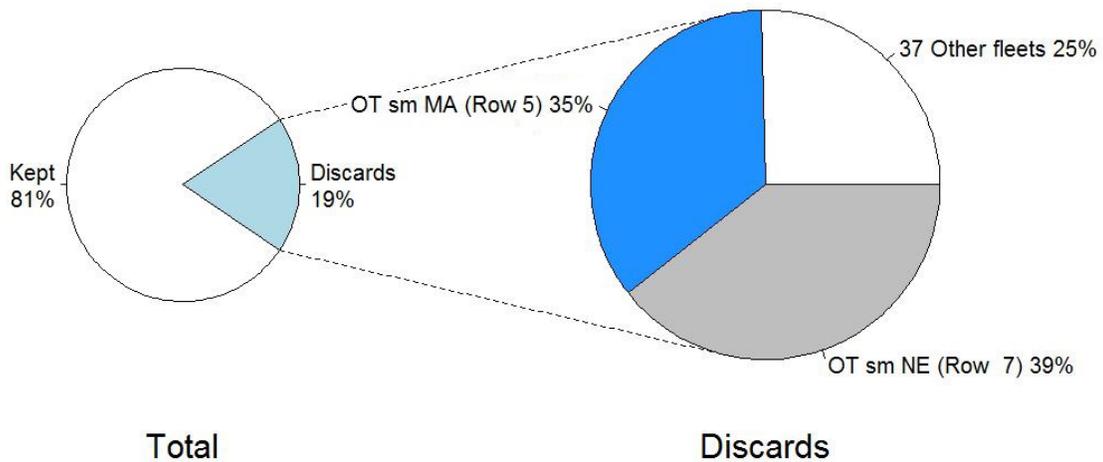


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: butterfish (*Peprilus triacanthus*); bottom: northern shortfin squid (*Illex illecebrosus*).

## SPECIES: LONGFIN INSHORE SQUID

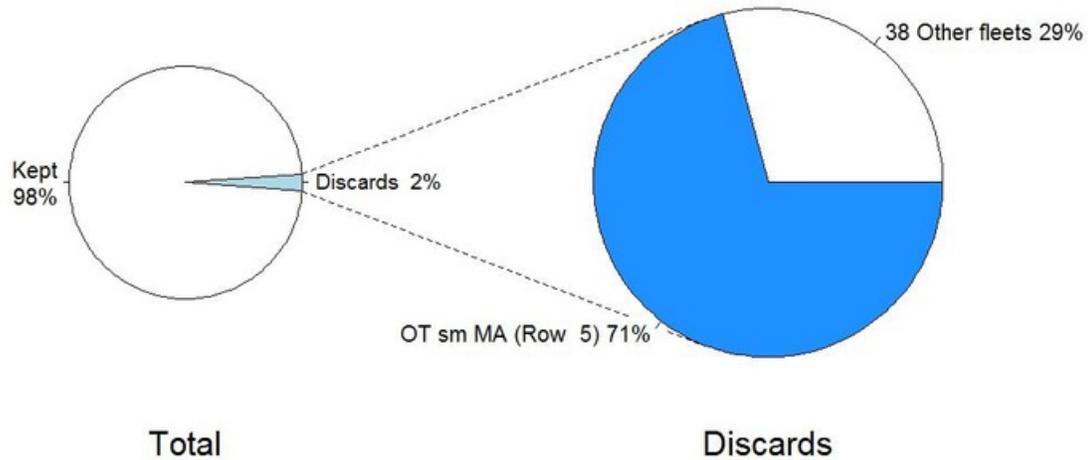
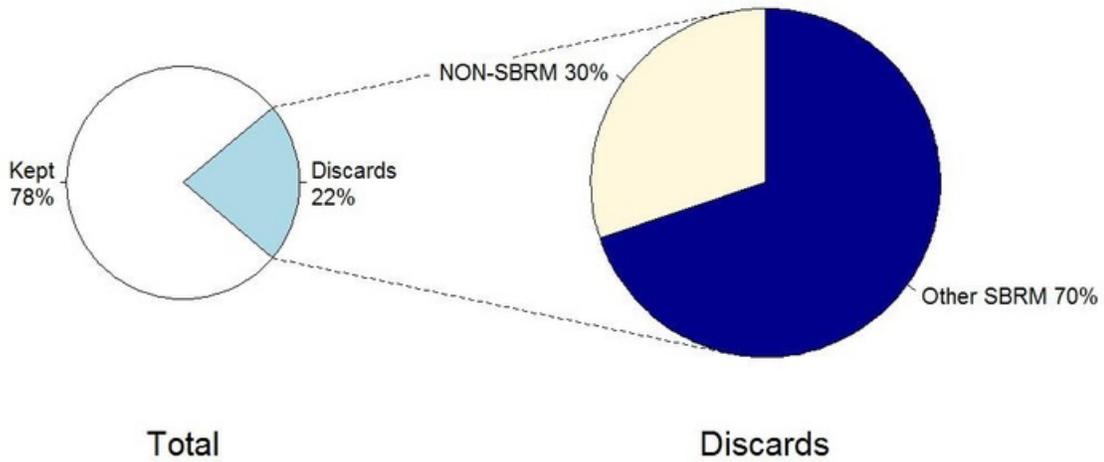


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: Longfin inshore squid (*Doryteuthis [Amerigo] pealeii*).

## FLEET: Longline OPEN all MA all (Row 1)



## FLEET: Longline OPEN all NE all (Row 2)

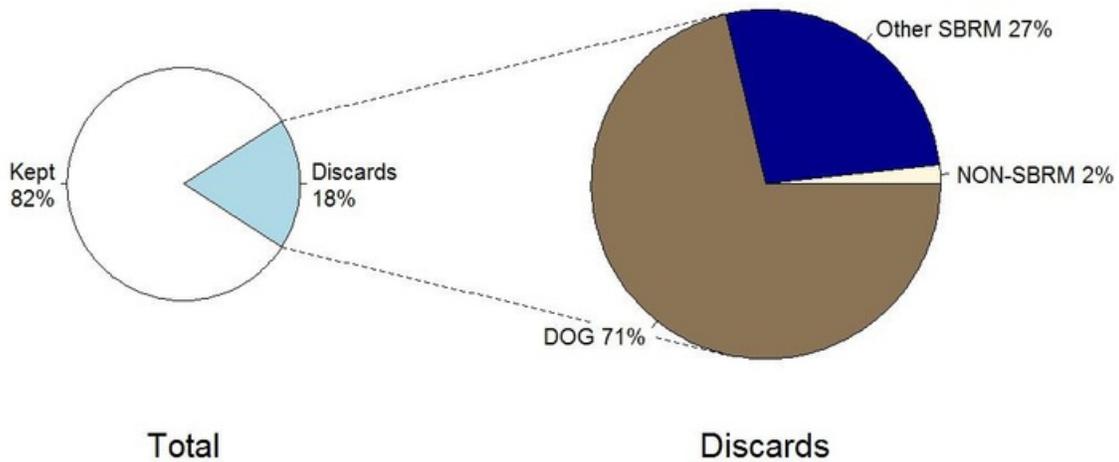
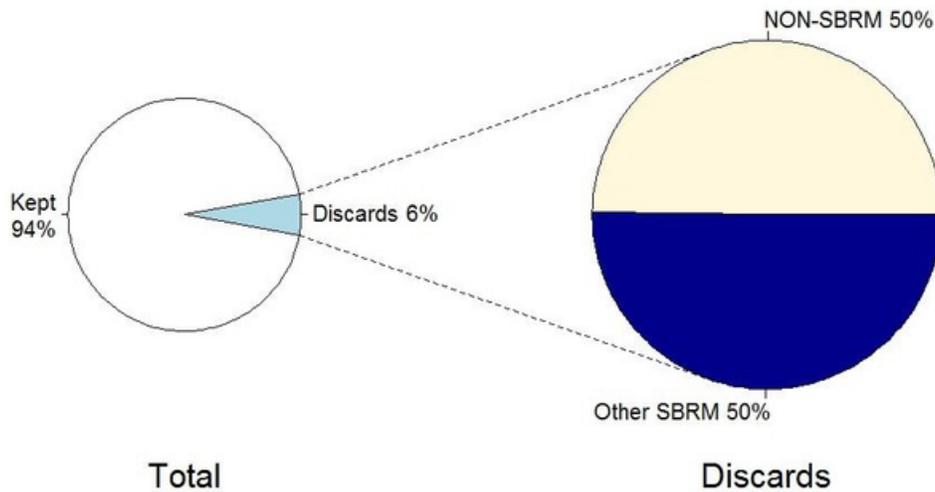


Figure 2. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Hand Line OPEN all NE all (Row 4)



## FLEET: Otter Trawl OPEN all MA sm (Row 5)

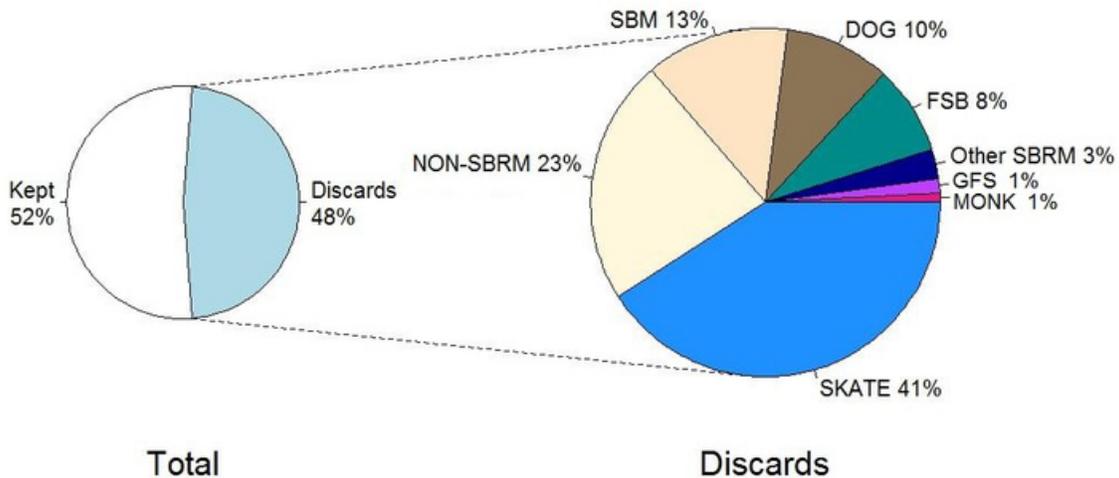
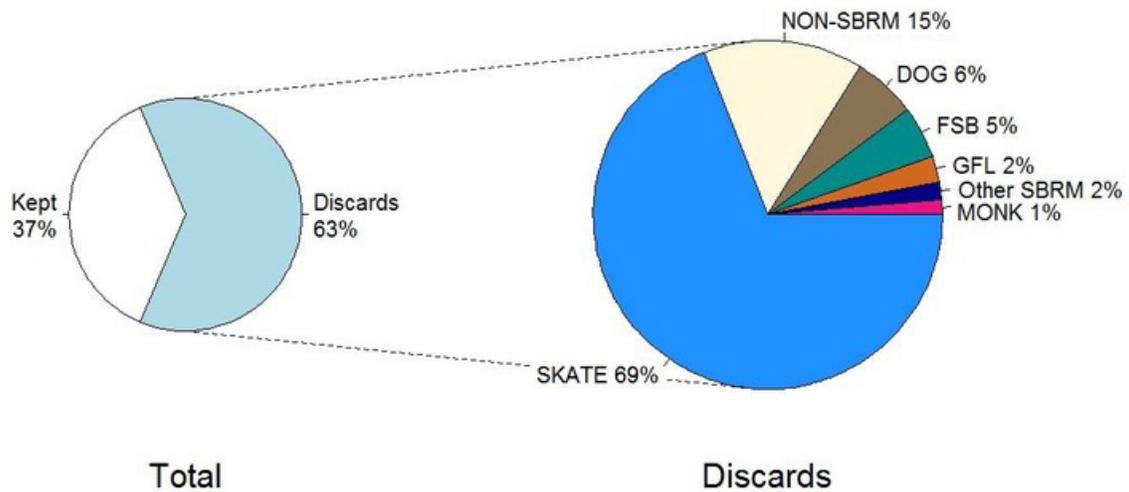


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Otter Trawl OPEN all MA Ig (Row 6)



## FLEET: Otter Trawl OPEN all NE sm (Row 7)

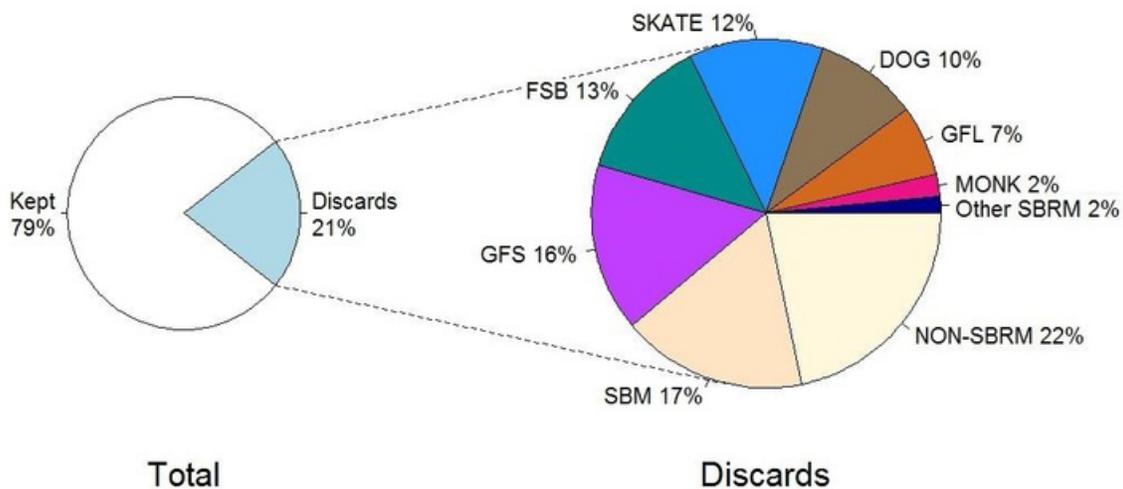
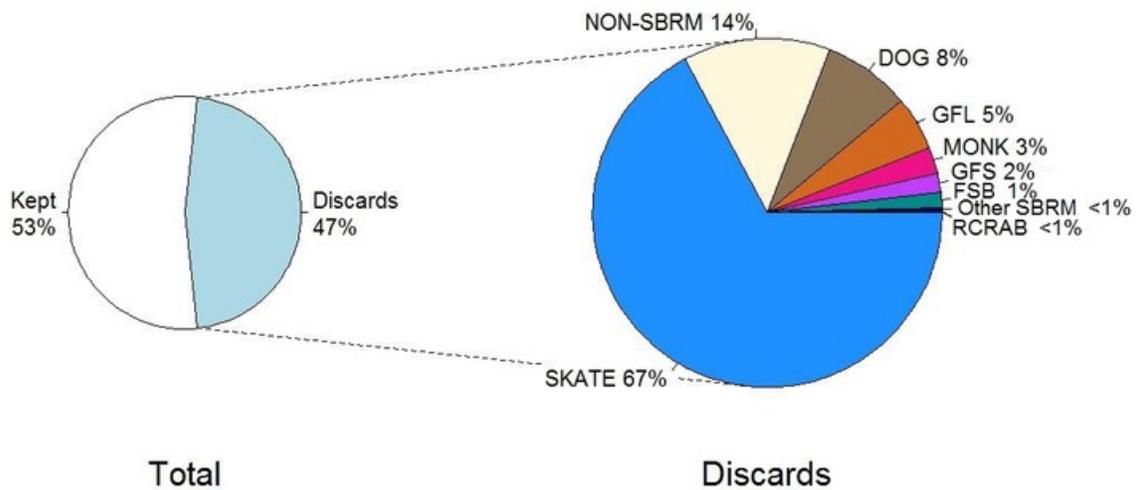


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Otter Trawl OPEN all NE Ig (Row 8)



## FLEET: Scallop Trawl AA GEN MA all (Row 9)

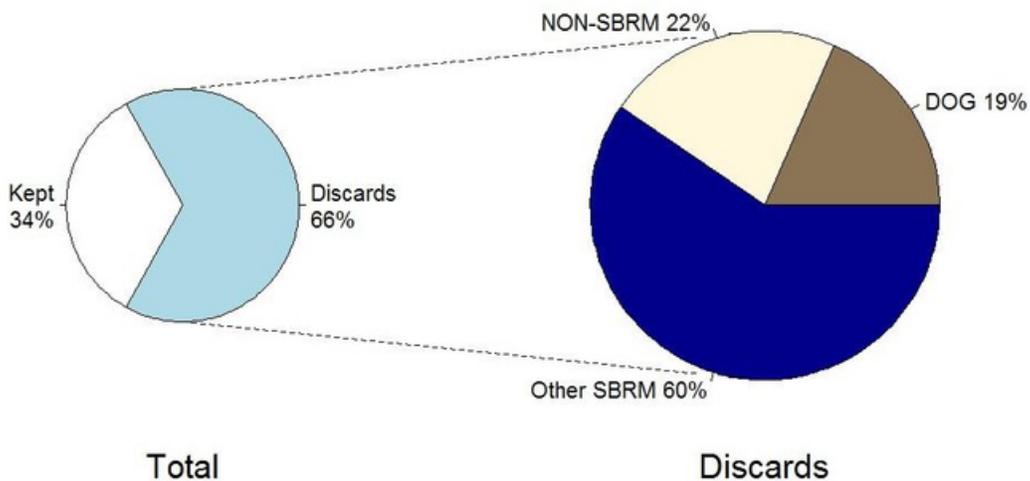
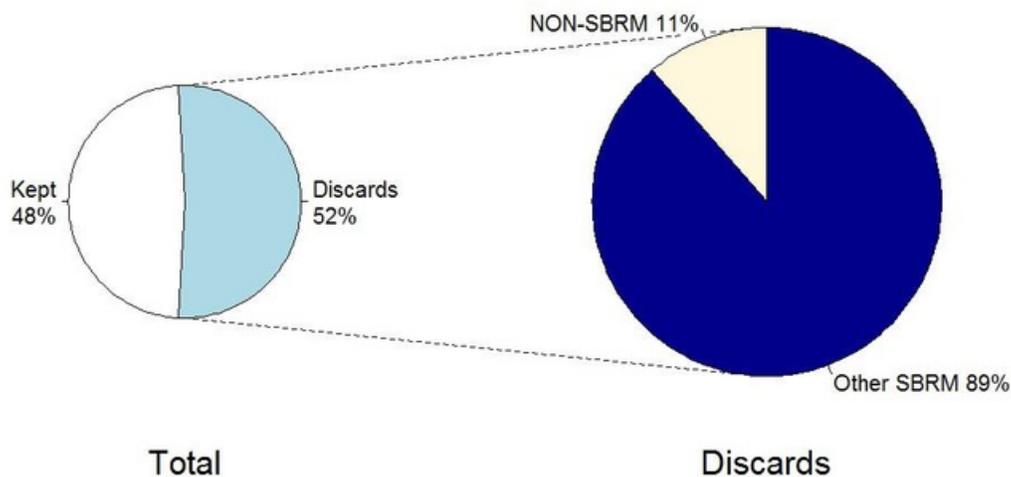


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Scallop Trawl OPEN GEN MA all (Row 11)



## FLEET: Otter Trawl, Haddock Separator OPEN all NE Ig (Row 18)

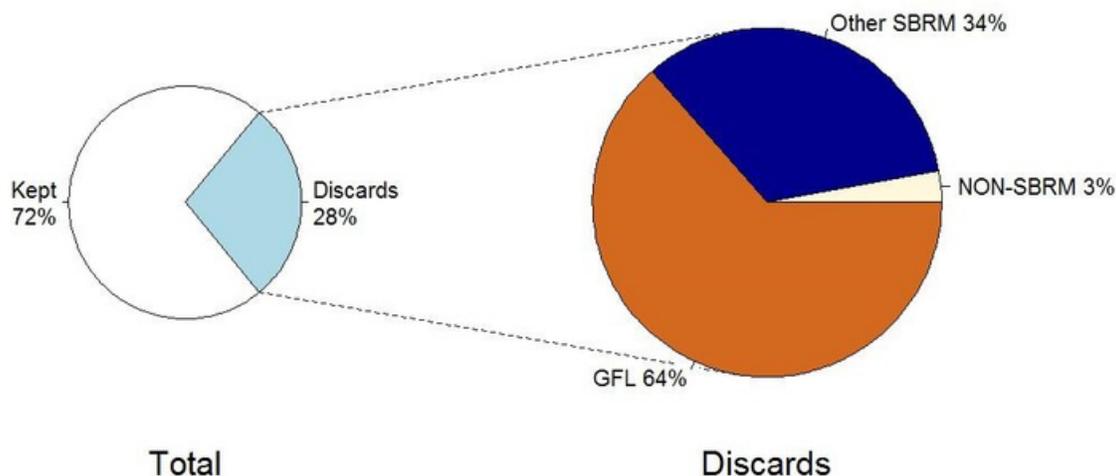
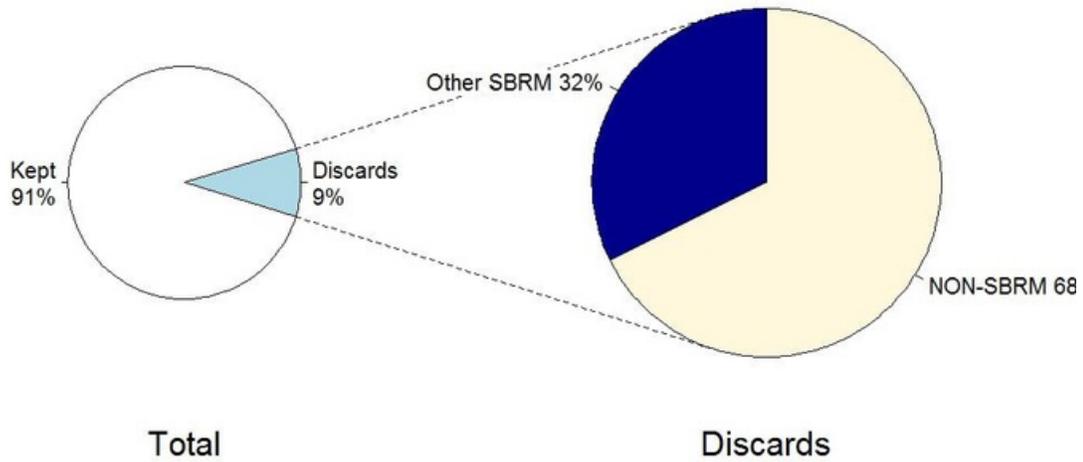


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Gillnet OPEN all MA sm (Row 23)



## FLEET: Gillnet OPEN all MA lg (Row 24)

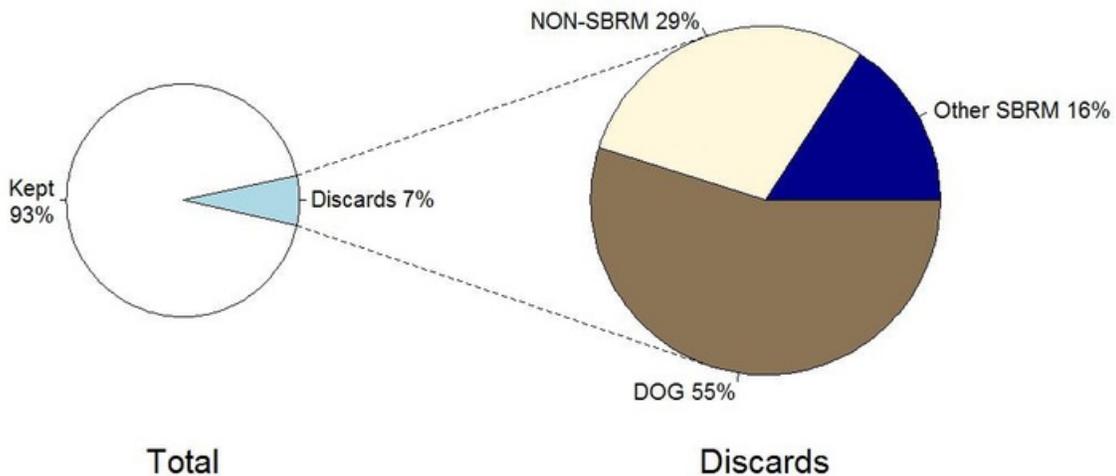
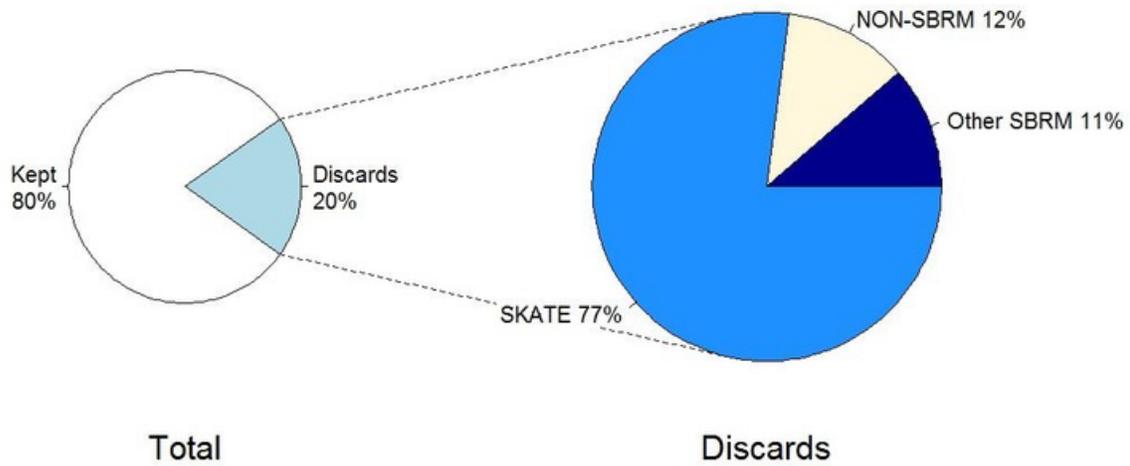


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Gillnet OPEN all MA xlg (Row 25)



## FLEET: Gillnet OPEN all NE lg (Row 27)

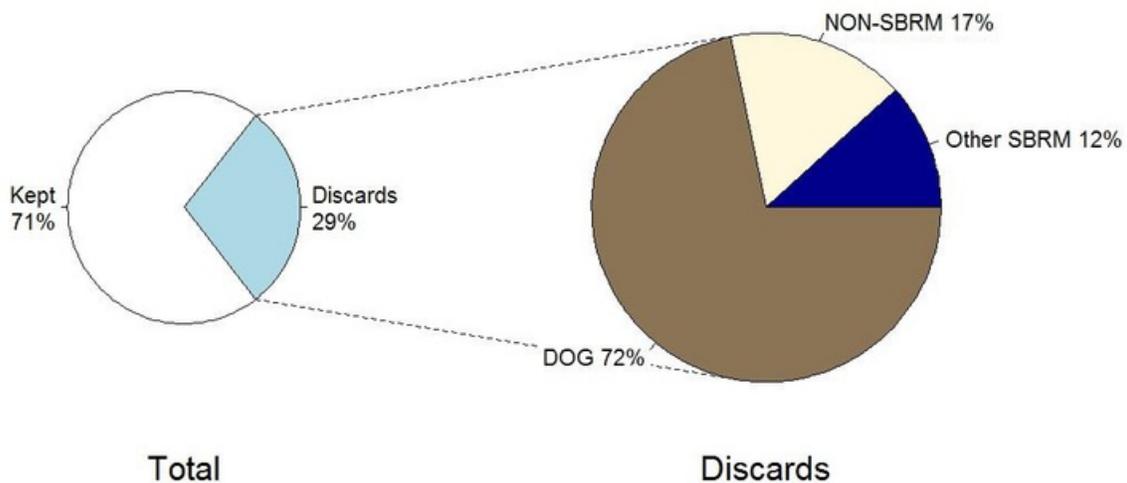
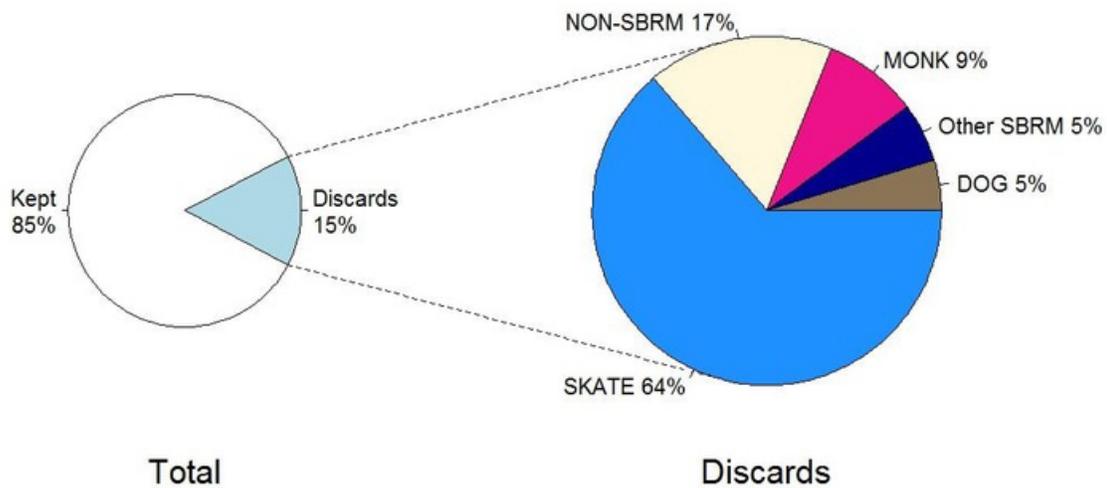


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Gillnet OPEN all NE xlg (Row 28)



## FLEET: Purse Seine OPEN all NE all (Row 30)

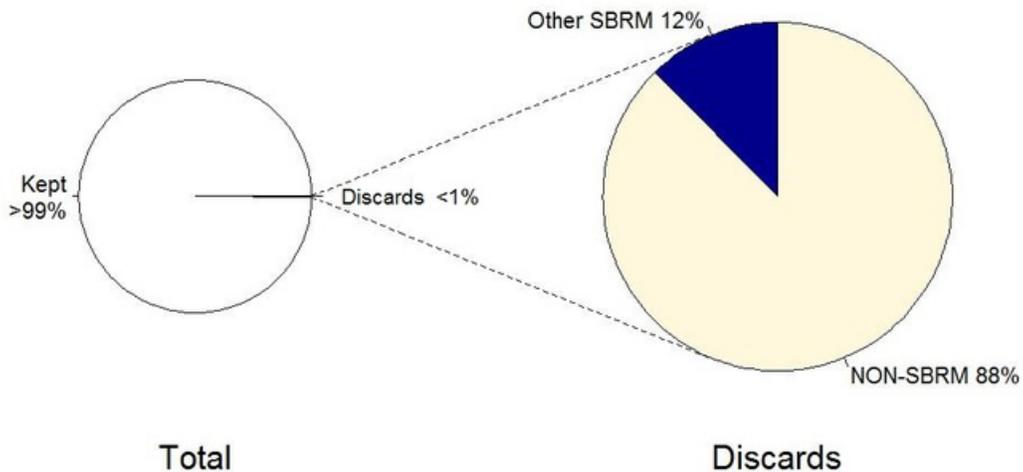
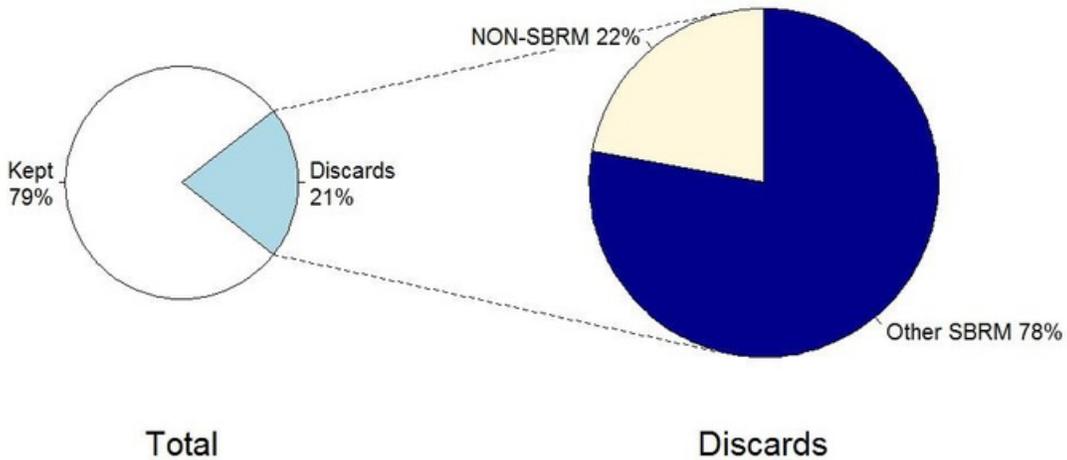


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Scallop Dredge AA GEN MA all (Row 31)



## FLEET: Scallop Dredge AA GEN NE all (Row 32)

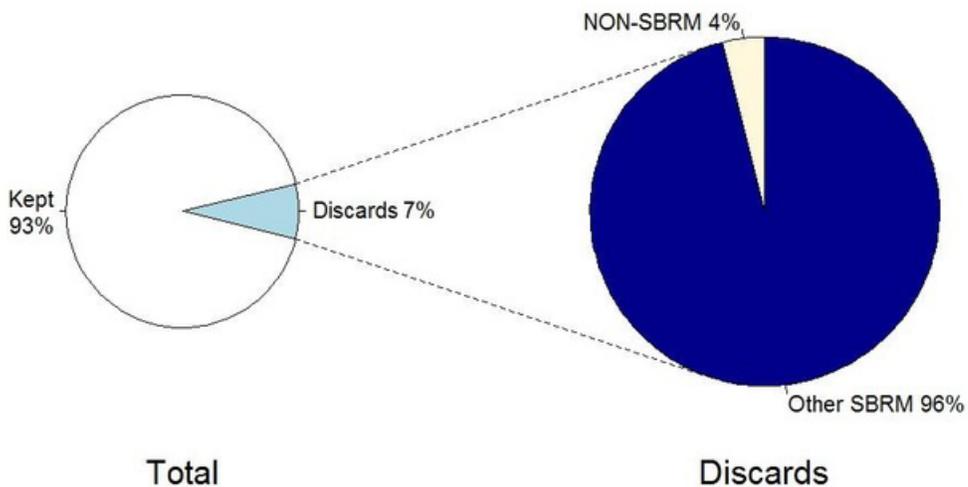
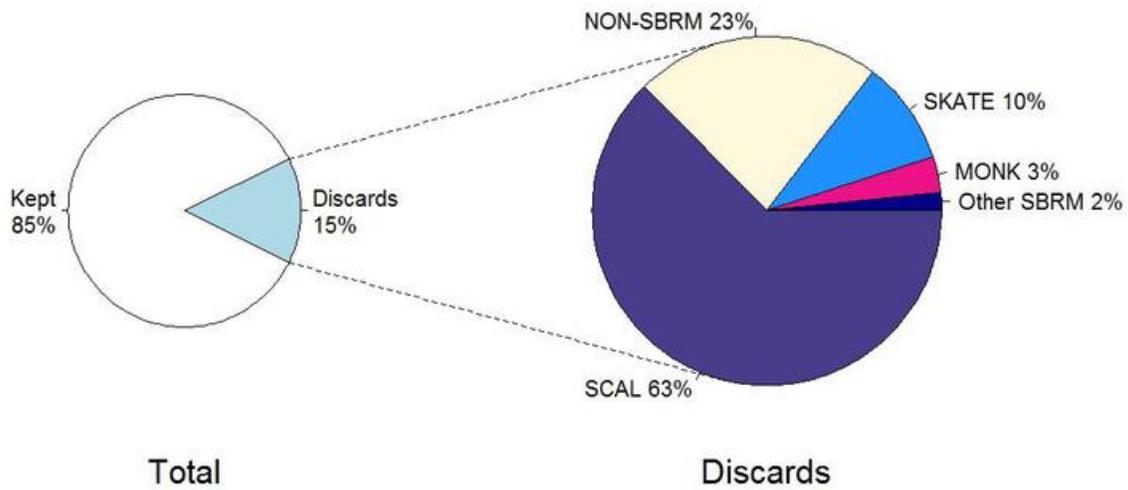


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Scallop Dredge AA LIM MA all (Row 33)



## FLEET: Scallop Dredge AA LIM NE all (Row 34)

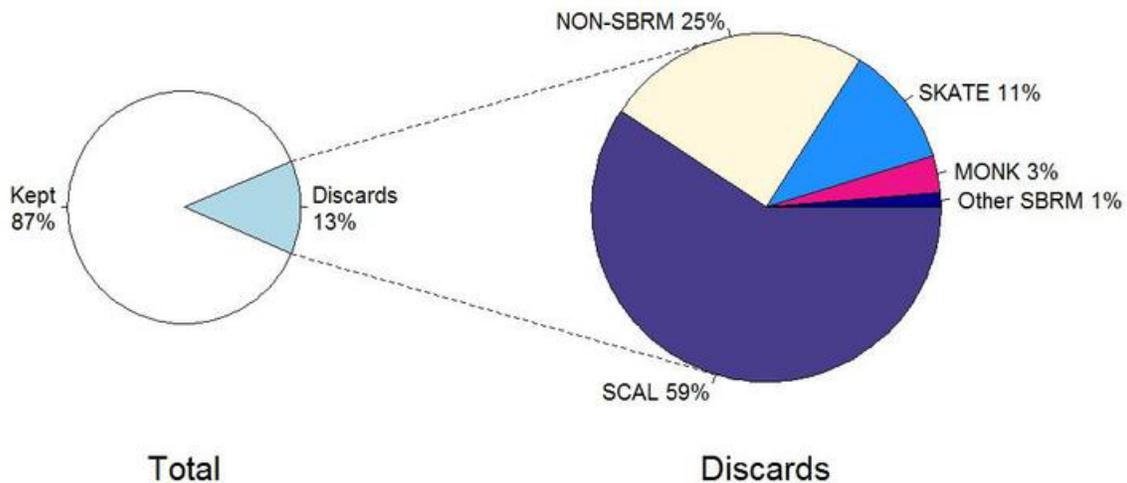
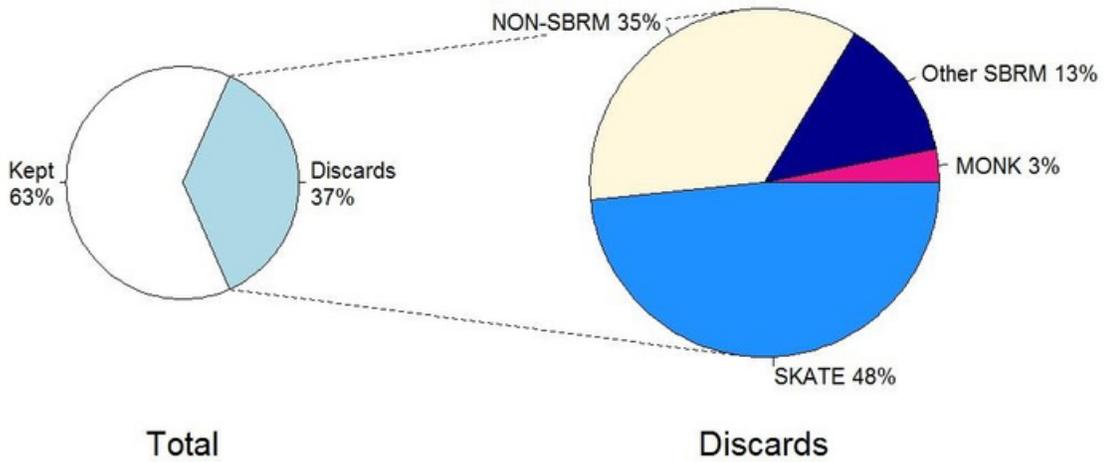


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Scallop Dredge OPEN GEN MA all (Row 35)



## FLEET: Scallop Dredge OPEN GEN NE all (Row 36)

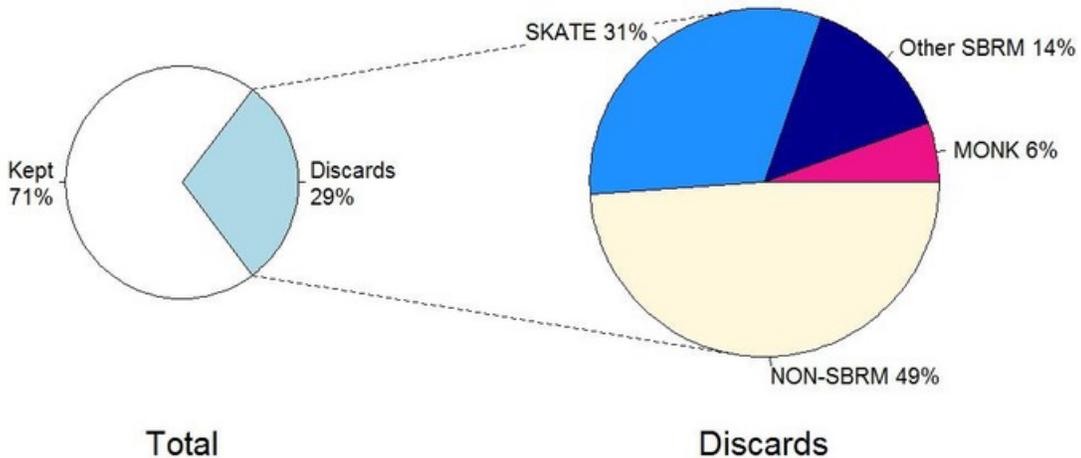
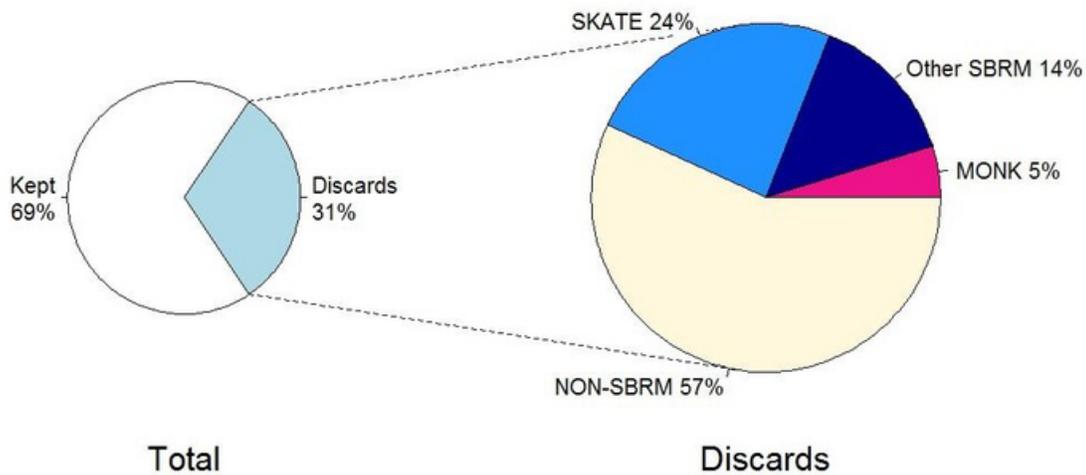


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Scallop Dredge OPEN LIM MA all (Row 37)



## FLEET: Scallop Dredge OPEN LIM NE all (Row 38)

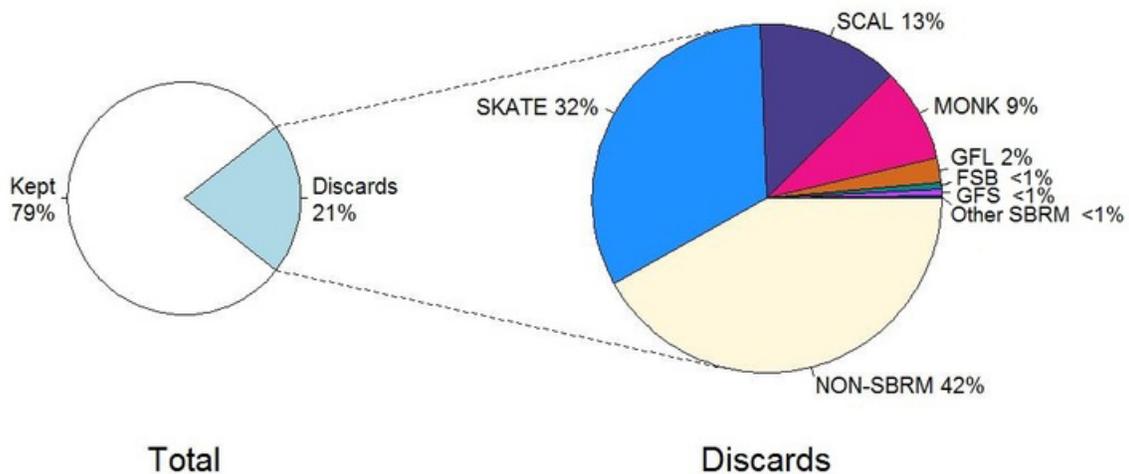
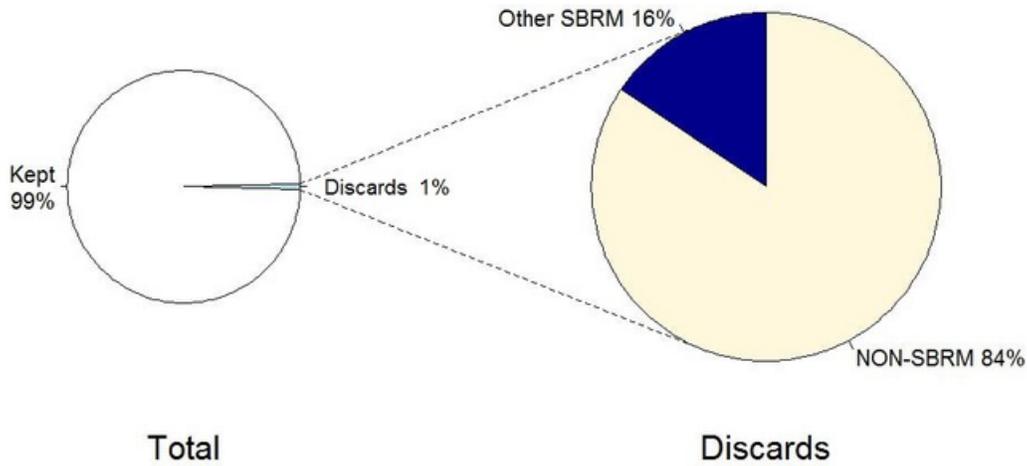


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Mid-water Trawl AA all NE all (Row 40)



## FLEET: Mid-water Trawl OPEN all NE all (Row 42)

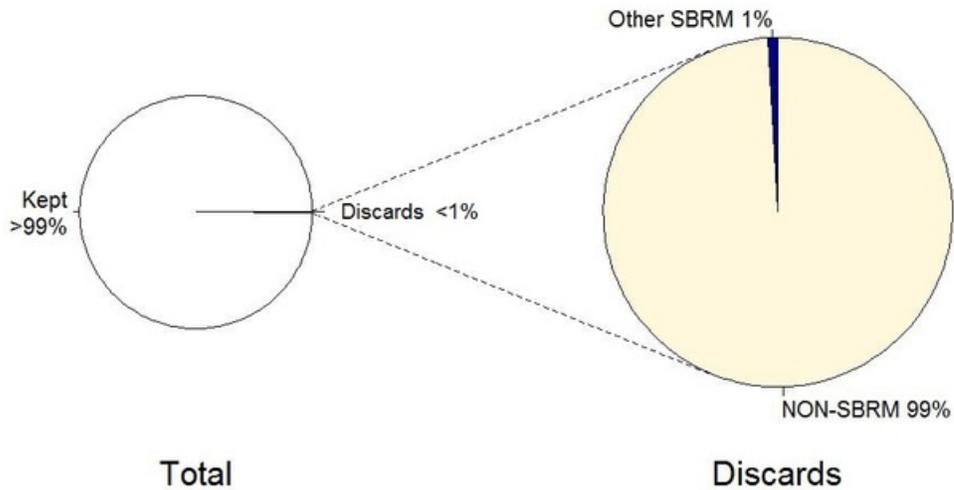
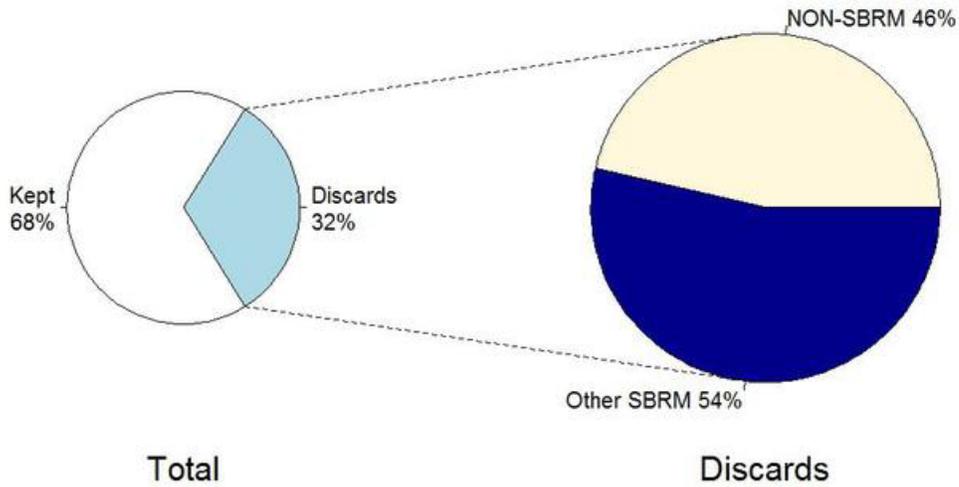


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Pots and Traps, Fish OPEN all MA all (Row 43)



## FLEET: Pots and Traps, Fish OPEN all NE all (Row 44)

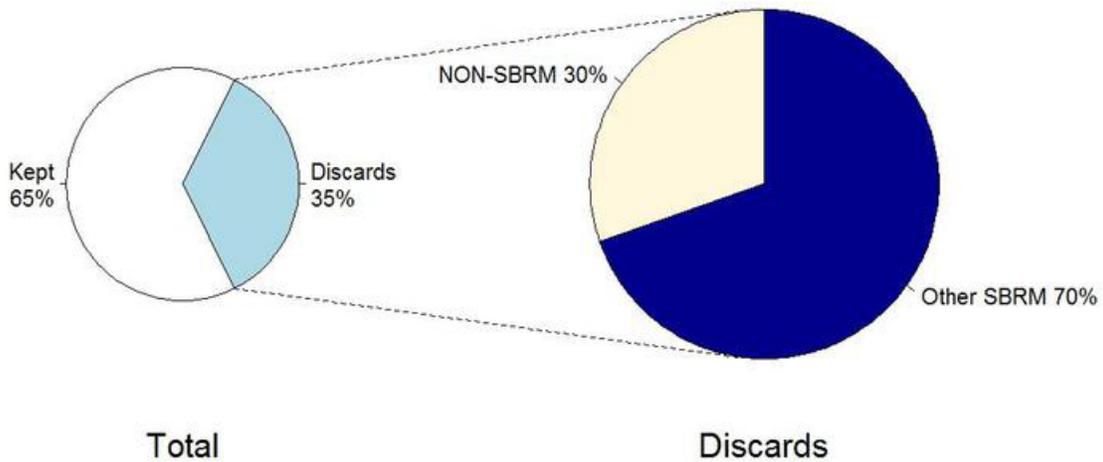
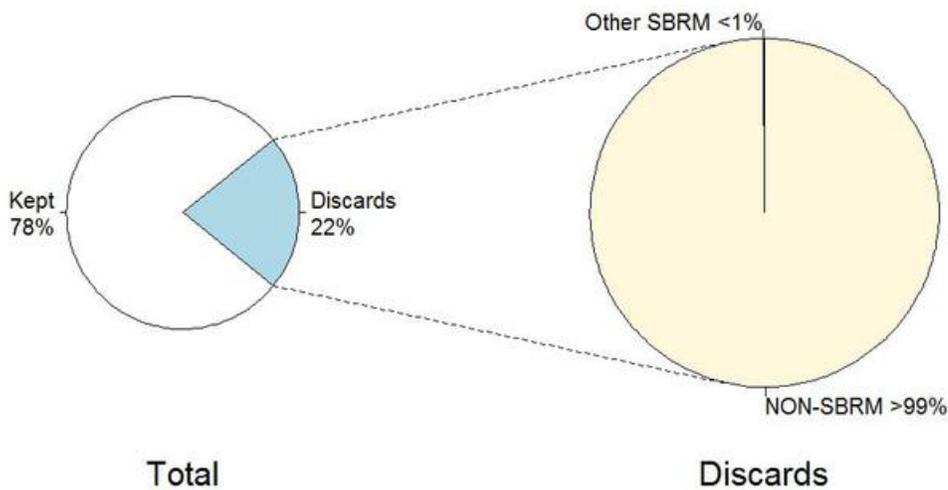


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Pots and Traps, Conch OPEN all MA all (Row 45)



## FLEET: Pots and Traps, Conch OPEN all NE all (Row 46)

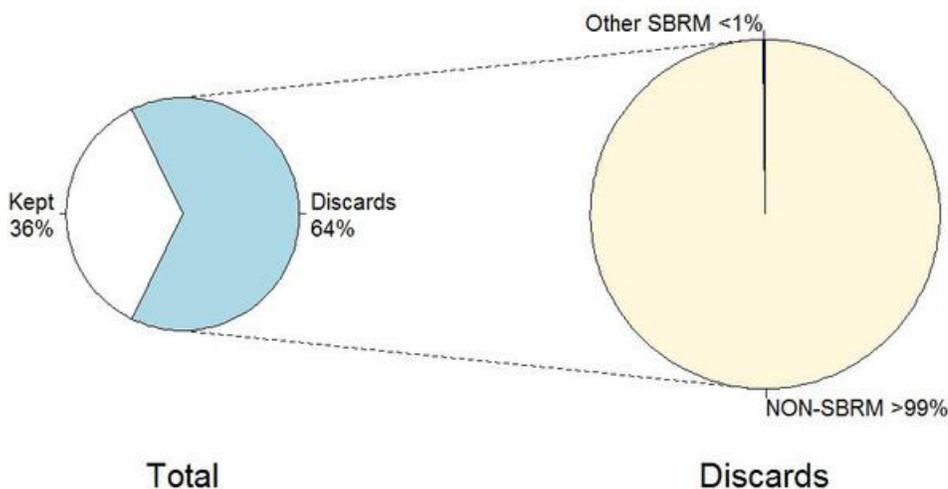
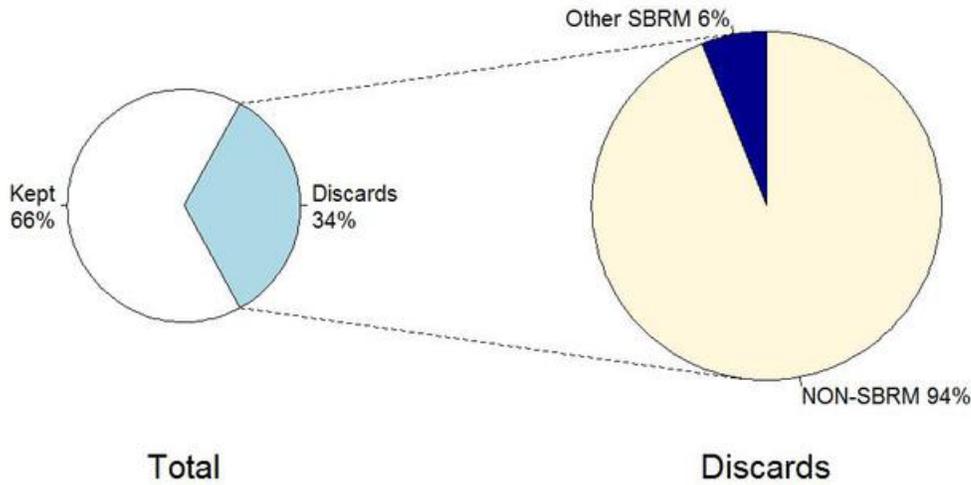


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Pots and Traps, Lobster OPEN all MA all (Row 48)



## FLEET: Pots and Traps, Lobster OPEN all NE all (Row 49)

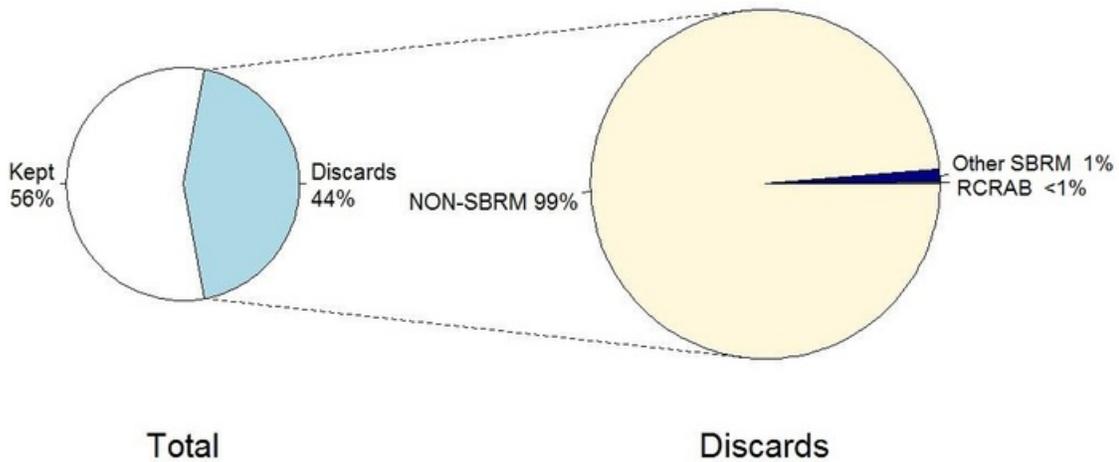
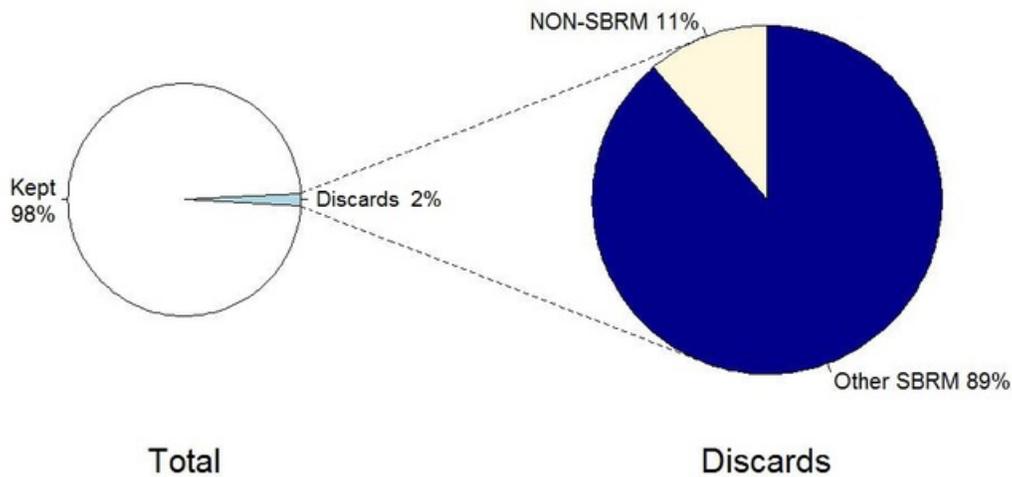


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

## FLEET: Ocean Quahog/Surf Clam Dredge OPEN all MA all (Row 55)



## FLEET: Ocean Quahog/Surf Clam Dredge OPEN all NE all (Row 56)

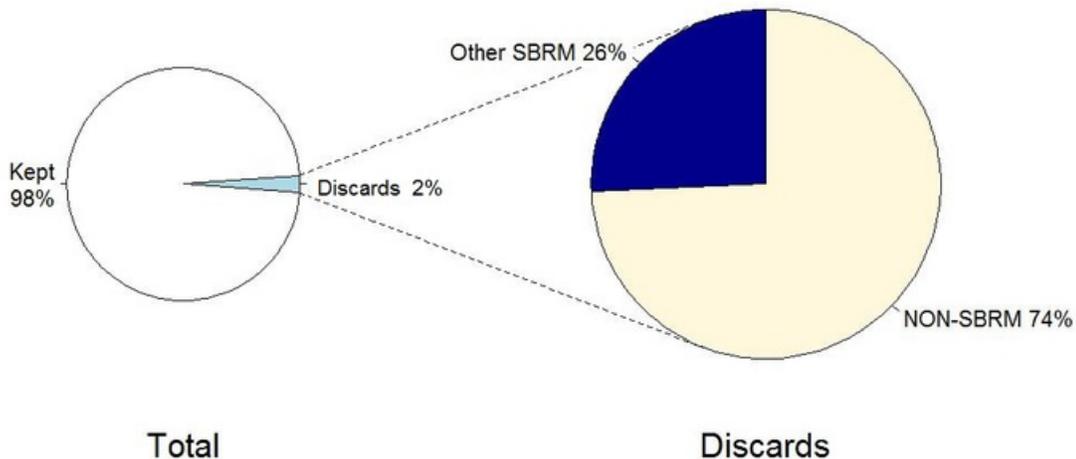


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2015 through June 2016 data. Because percentages have been rounded, they may not always sum to 100%. See Table 1 for species group abbreviations; see text and Appendix Table 4 for fleet abbreviations. Standardized Bycatch Reporting Methodology (SBRM) species groups that were filtered out through the importance filter have been aggregated and labeled “Other SBRM;” non-SBRM species have been grouped and labeled “Non-SBRM.”

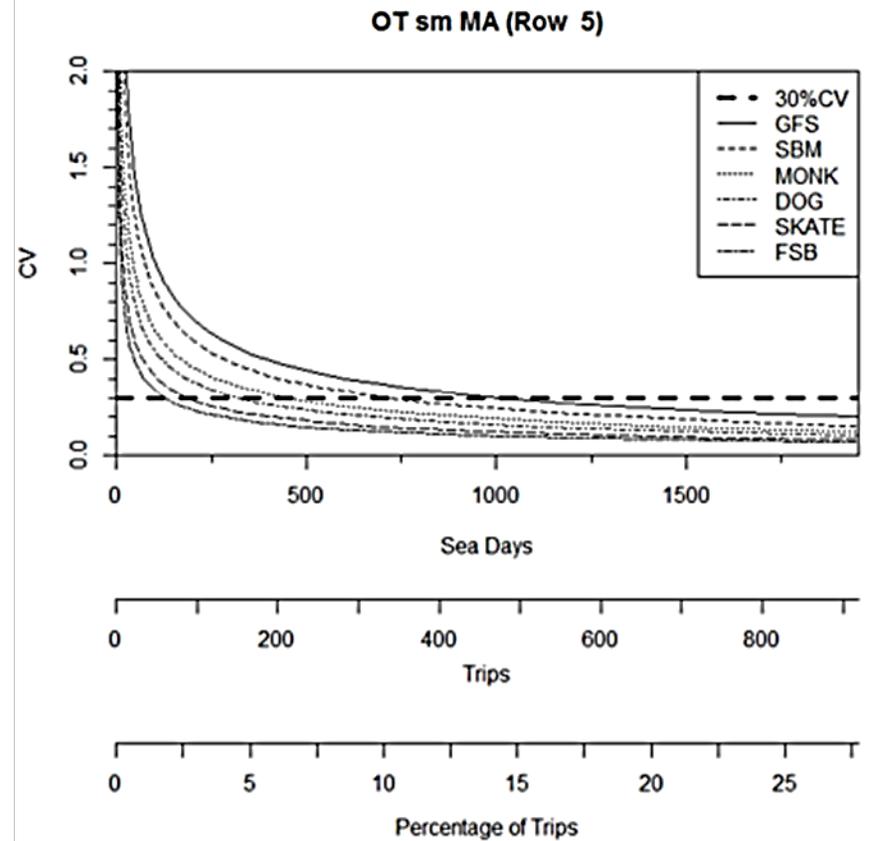
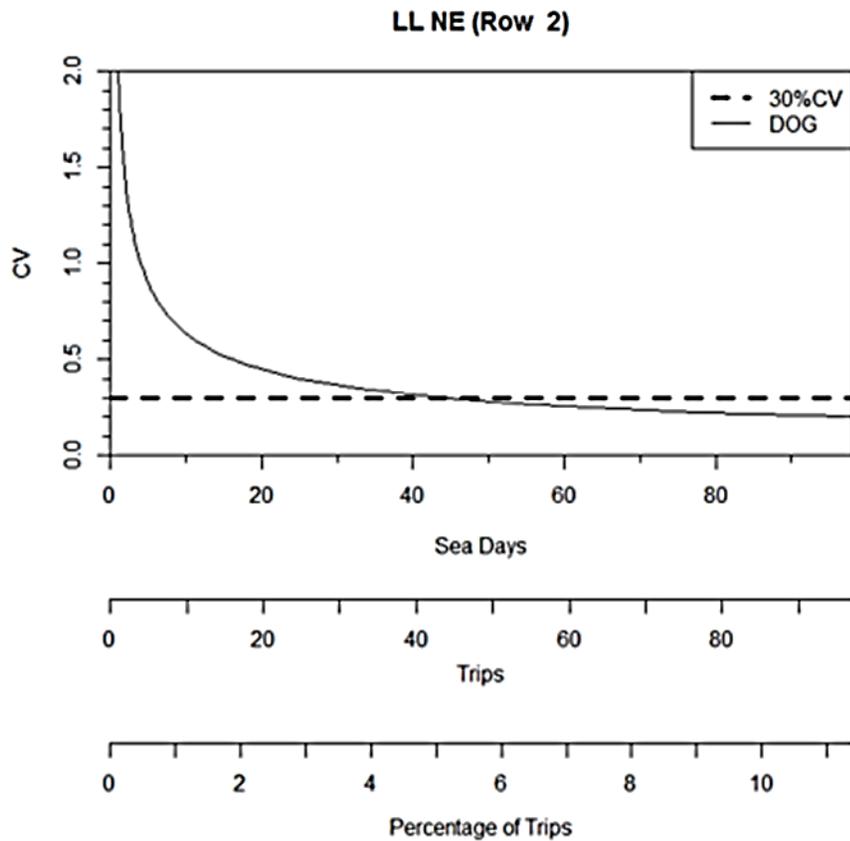


Figure 3. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

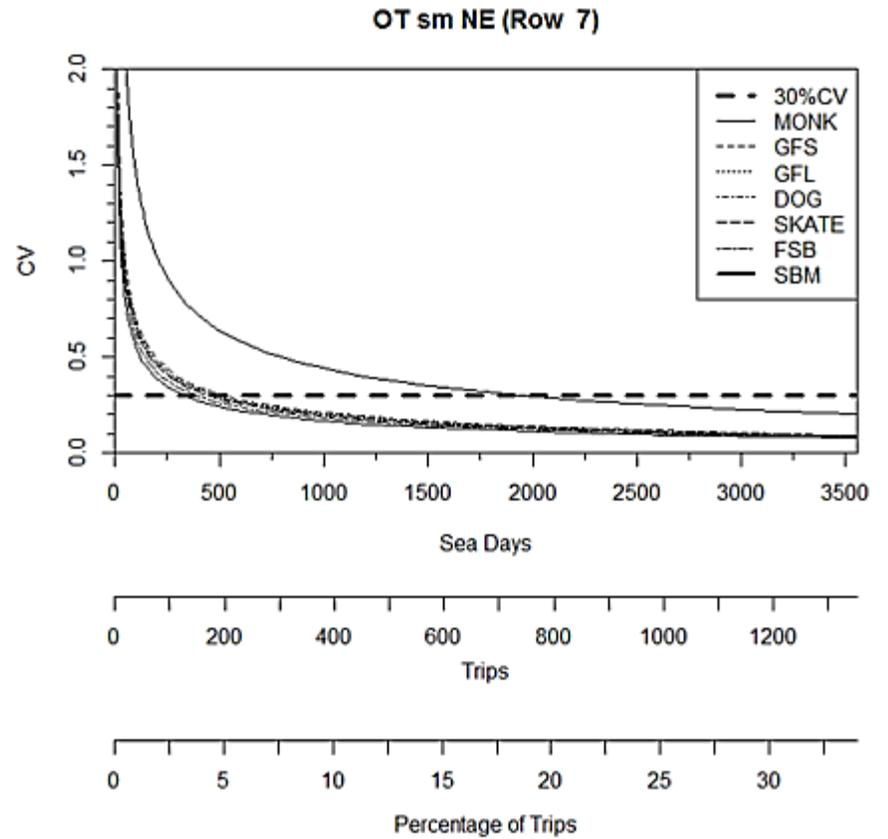
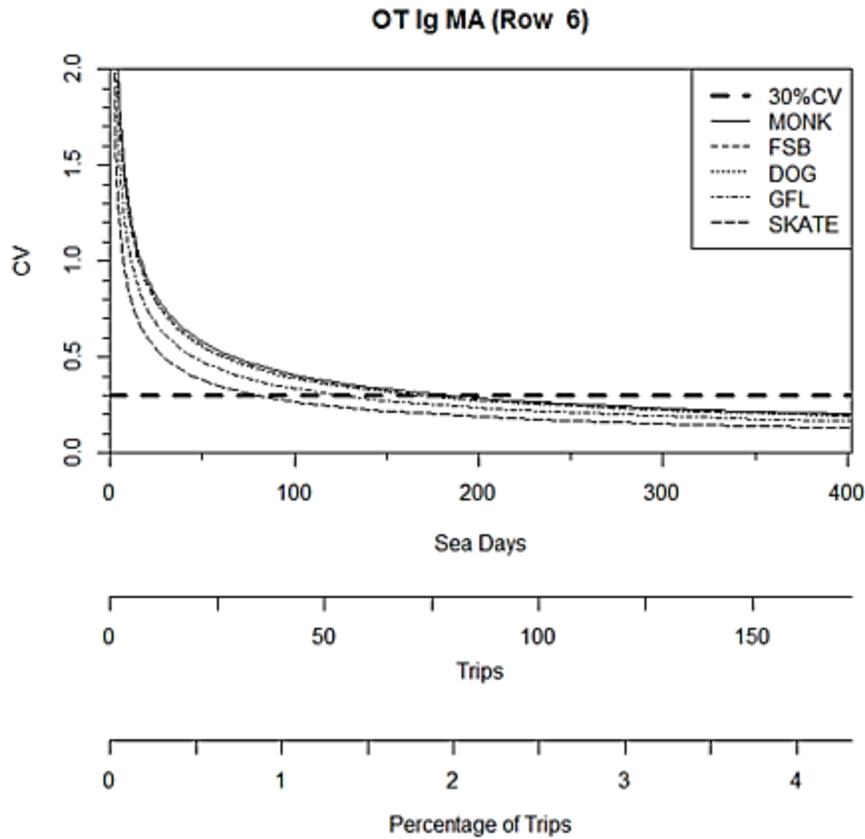


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

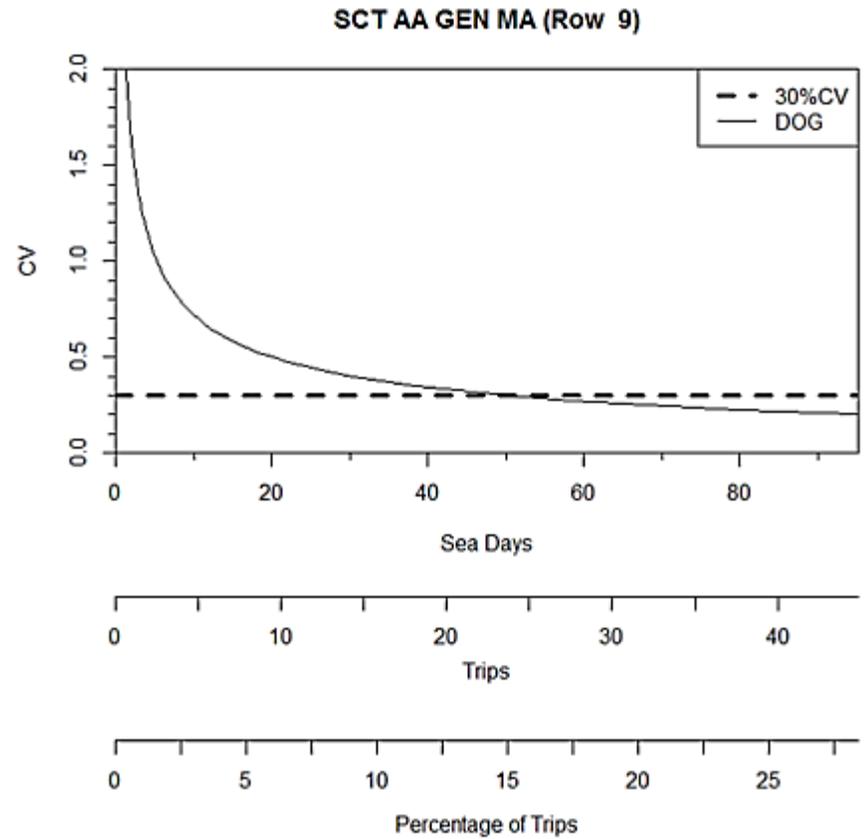
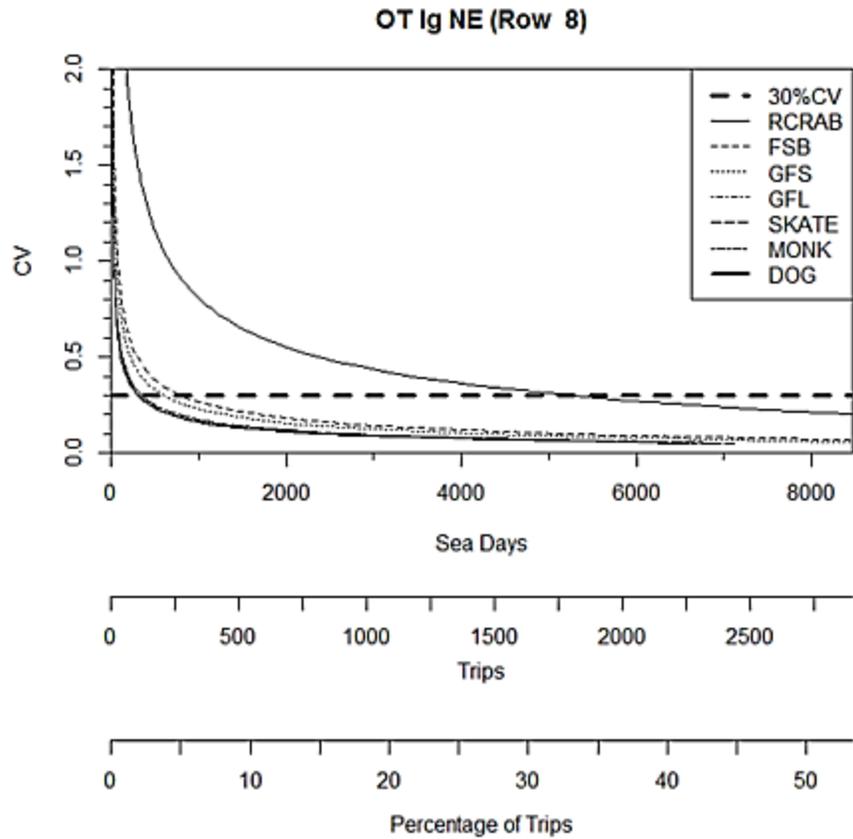


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

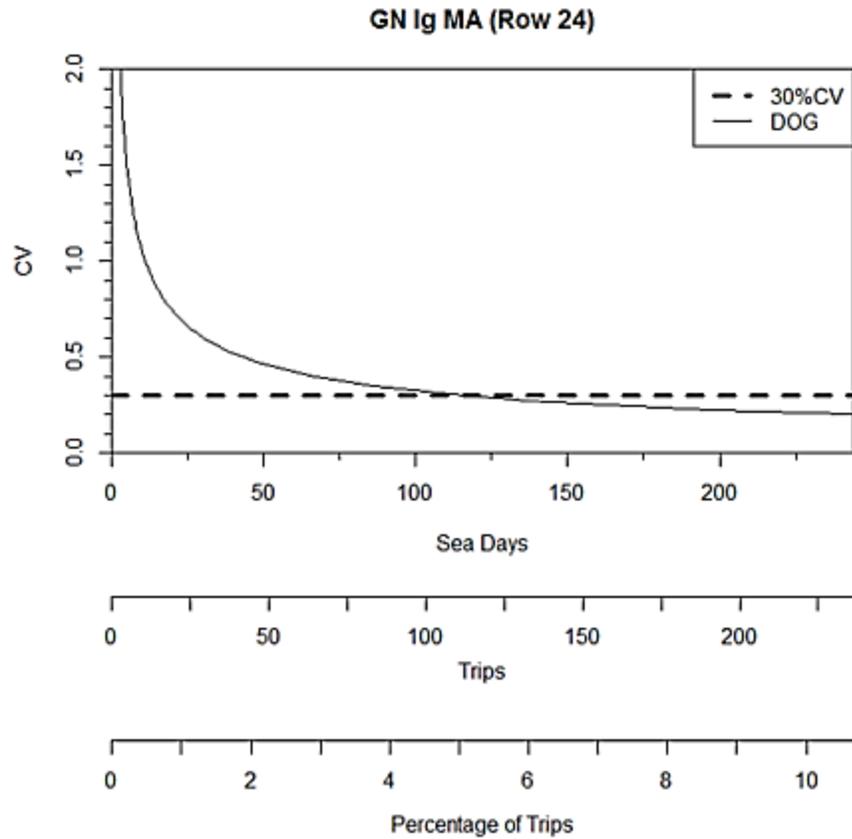
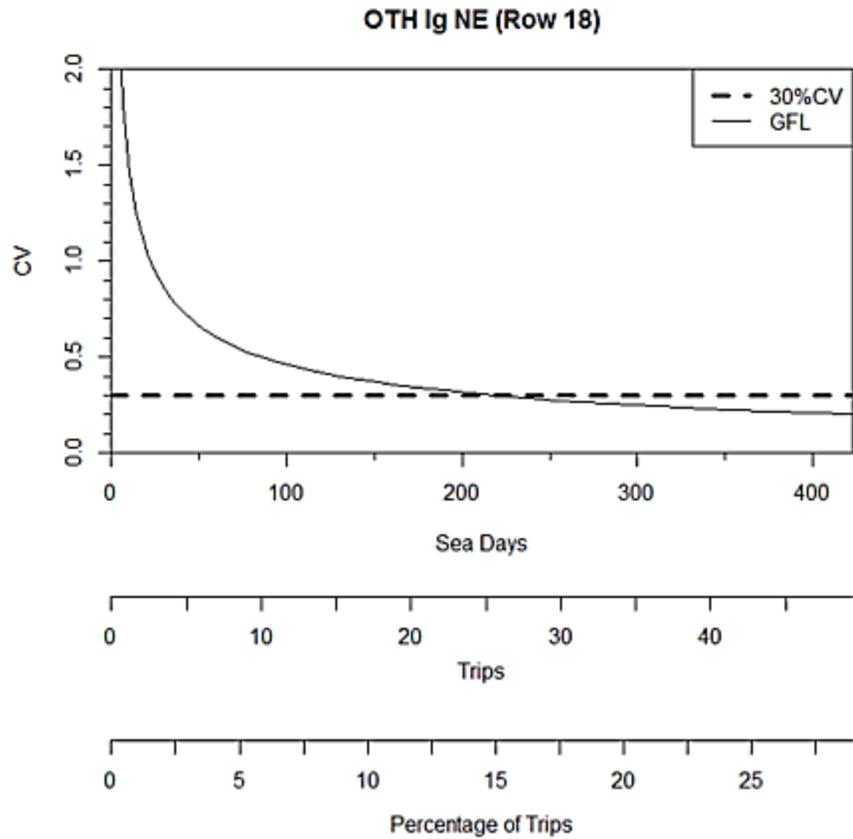


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

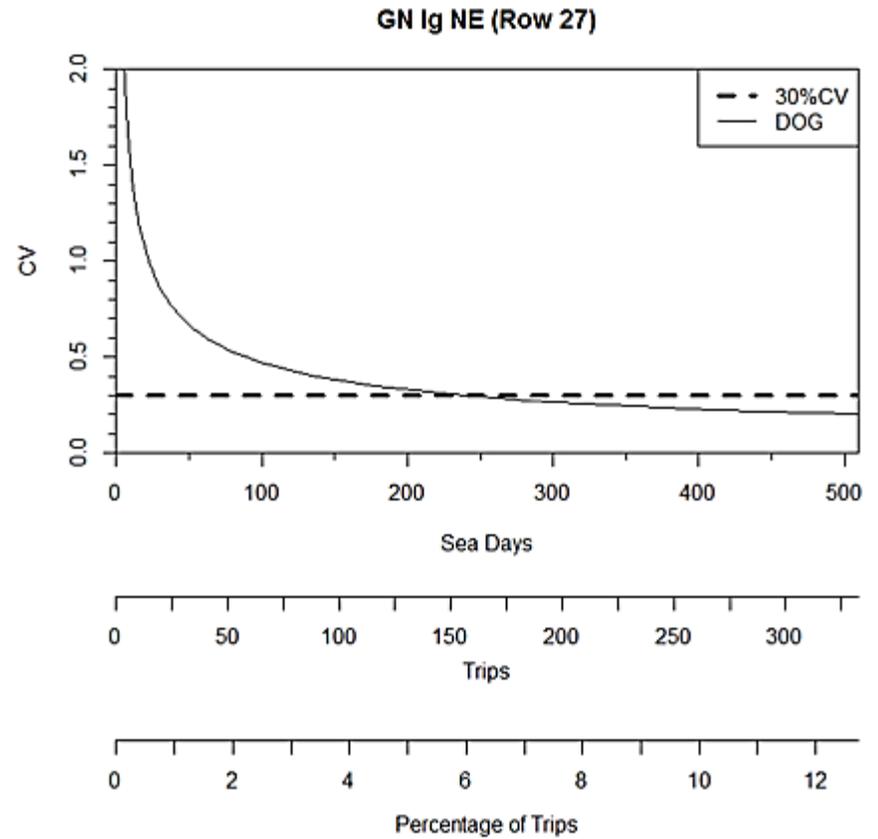
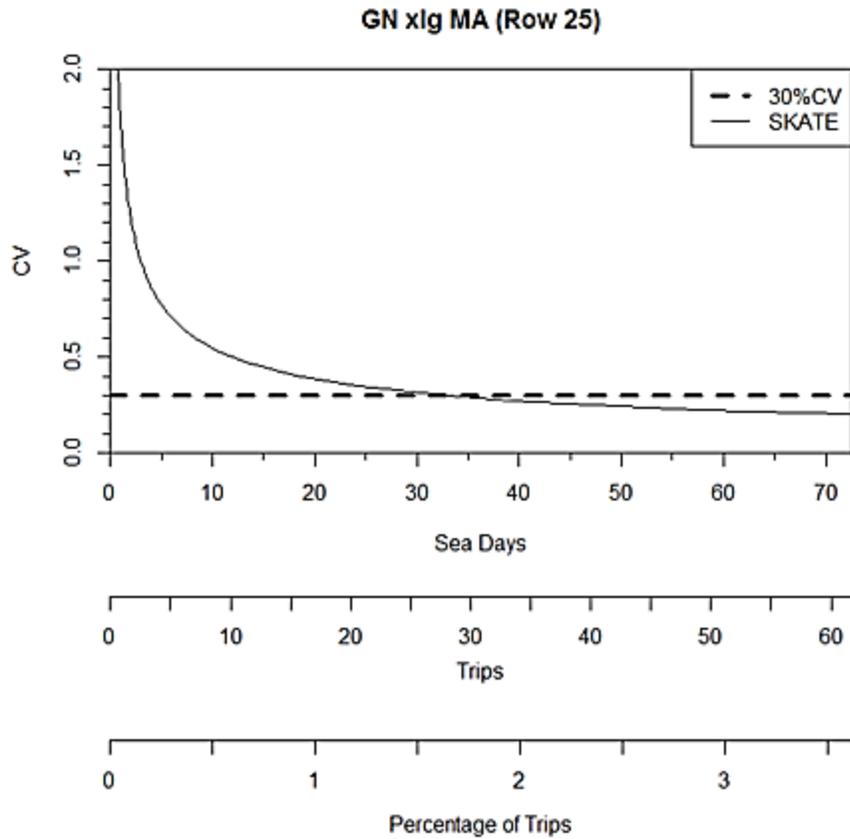


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

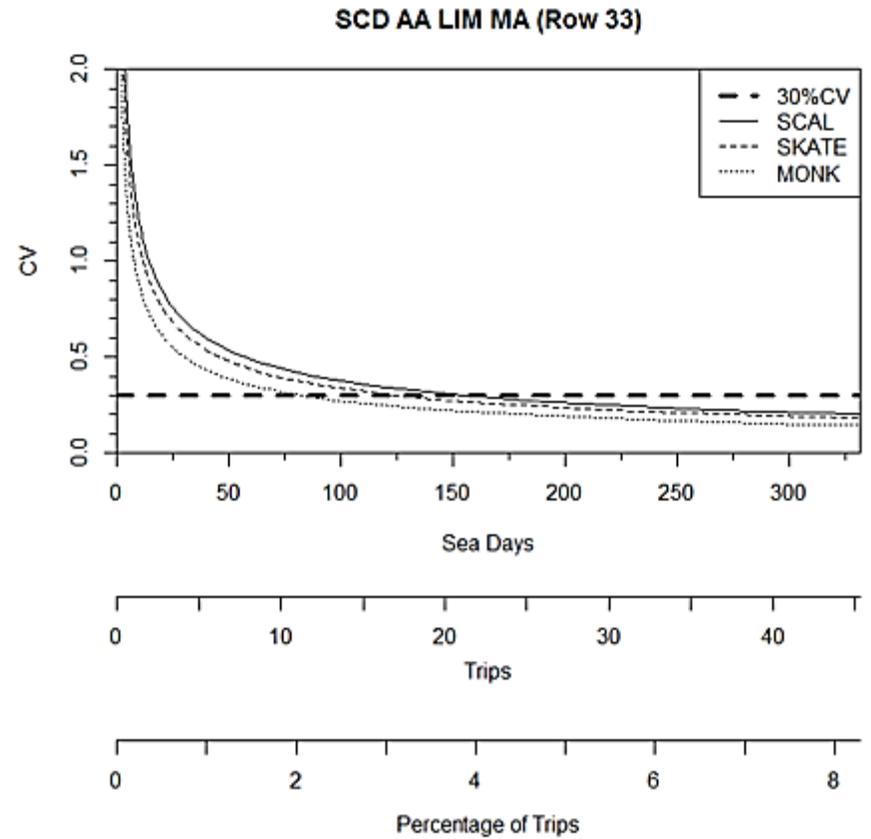
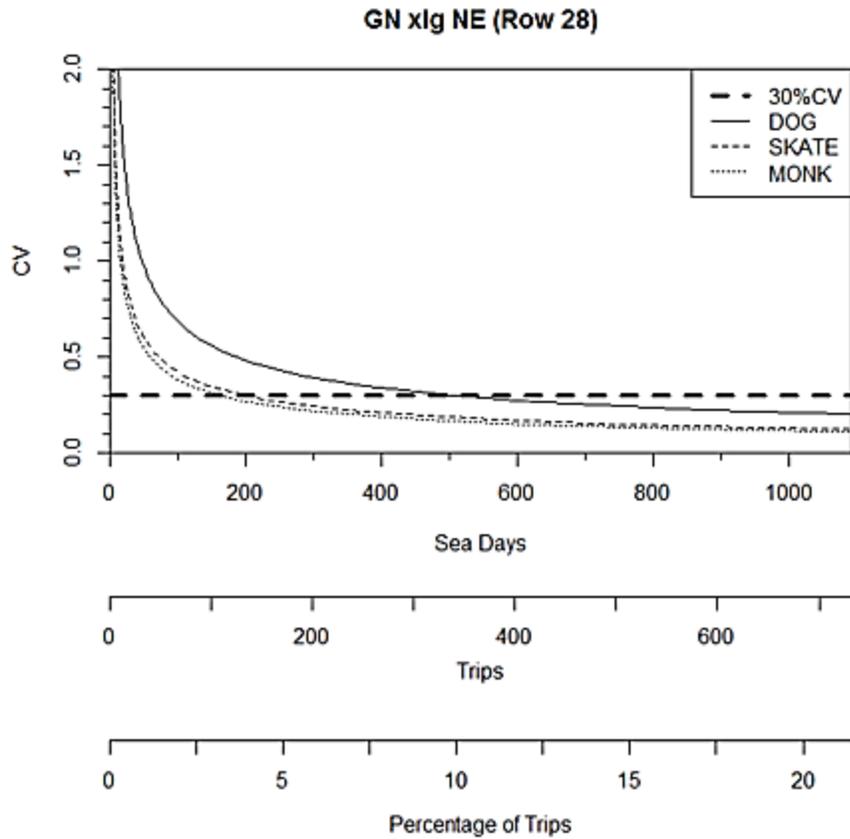


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

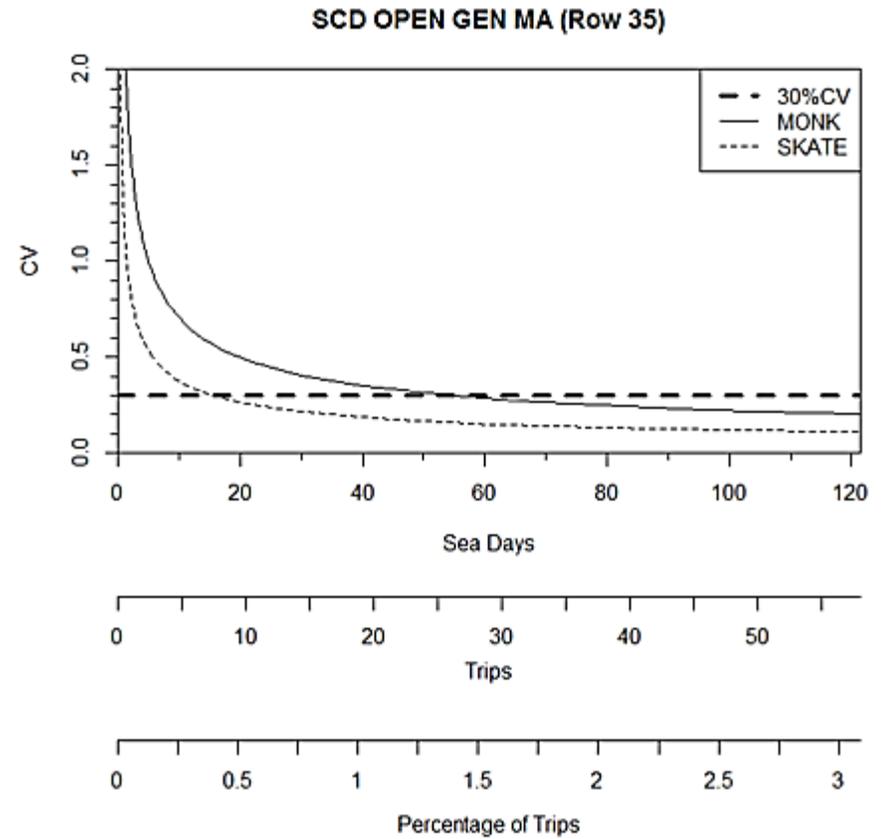
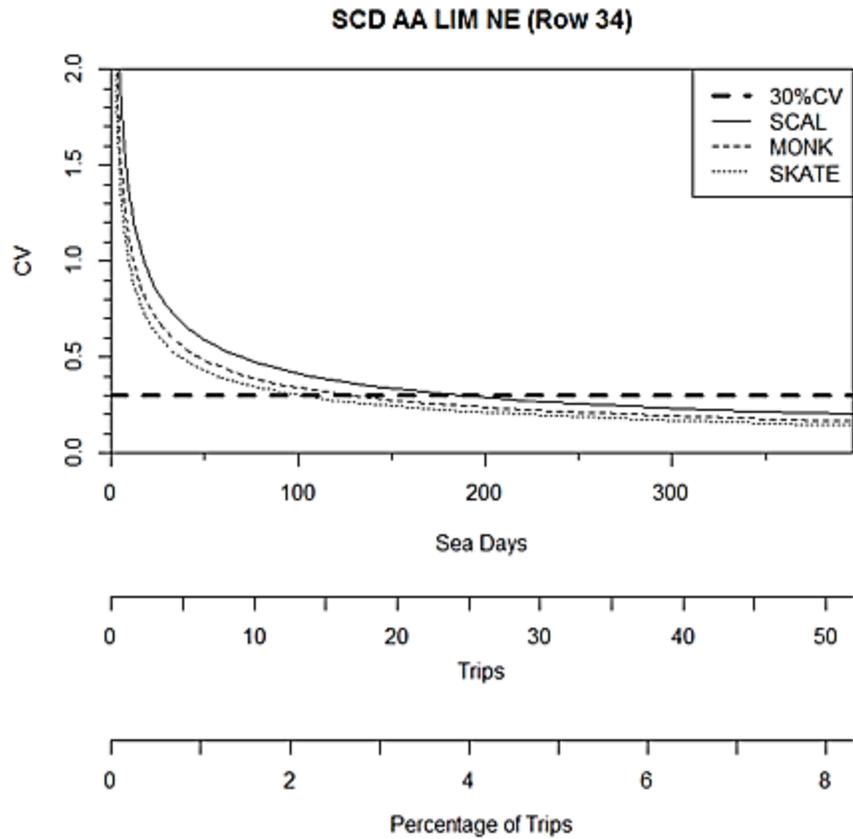


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

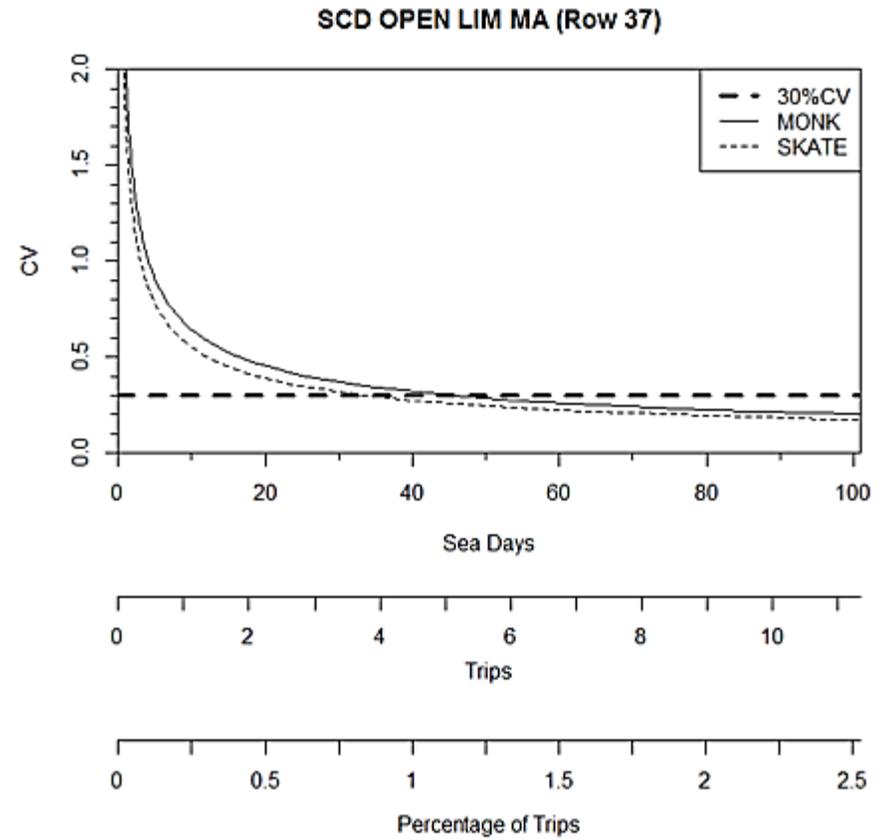
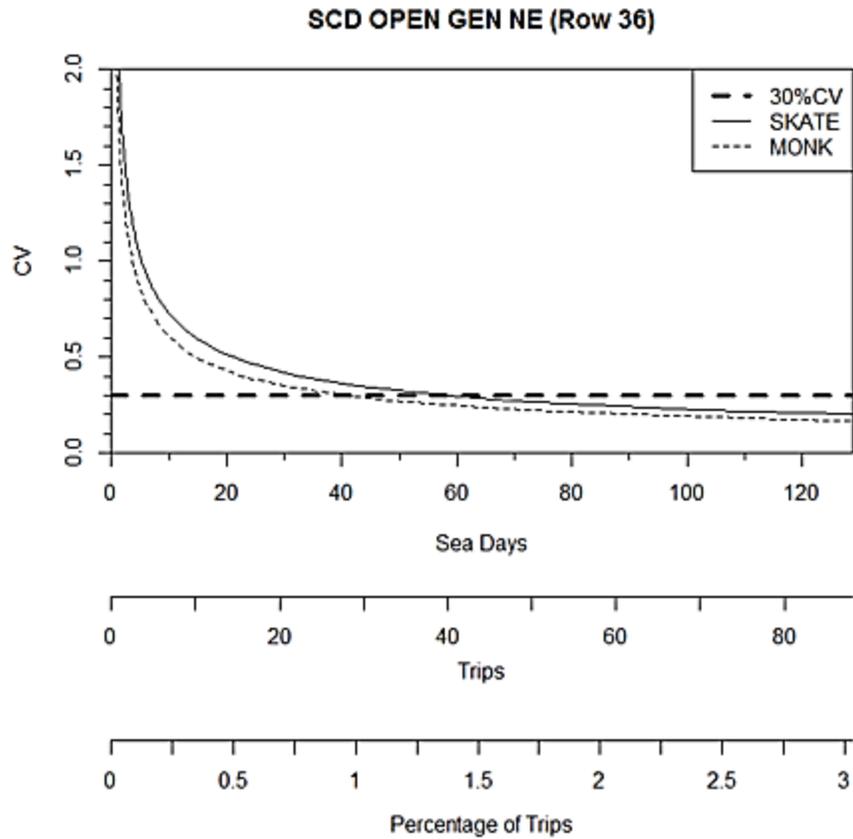


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

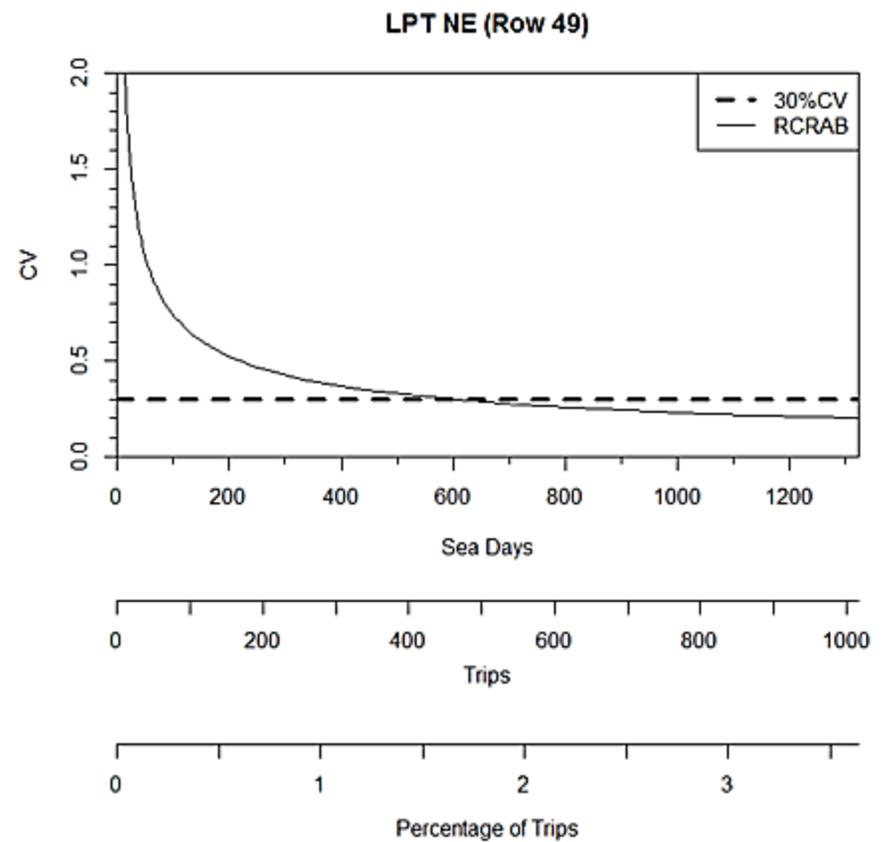
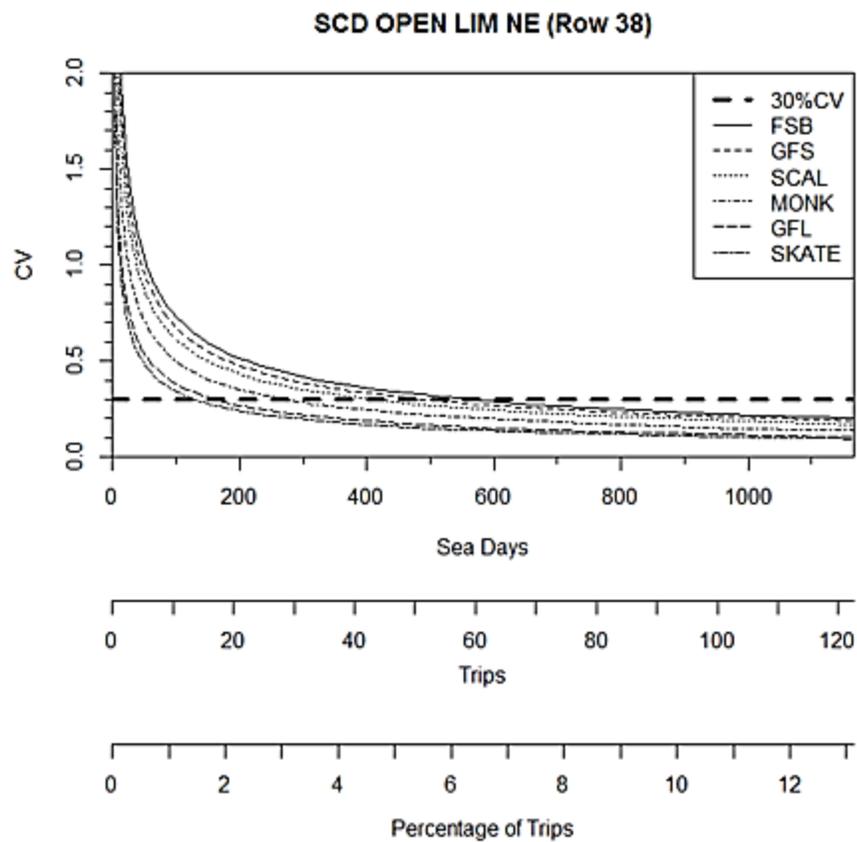


Figure 3, continued. Results from the 2017 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percentage of trips [based on the July 2015 through June 2016 VTR trips]) for each of the species groups that was not filtered out. The dash line is the 30% CV. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

**Appendix Table 1. The number of fleets used in 2017 analyses and reported in the tables of this report.**

56 fleets uniquely identified in Tables 2 & 3

17 fleets with no observer coverage  
discard estimation not conducted  
pilot fleet designation for sample size analysis

4 confidential fleets (Rows 10, 15, 21, 41)  
aggregated into "Confidential fleets" in Tables 4 & 5  
13 nonconfidential fleets

5 fleets with sparse observer coverage  
discard estimation conducted  
pilot fleet designation for sample size analysis

0 confidential fleets

5 nonconfidential fleets

34 fleets with sufficient observer coverage  
discard estimation conducted  
variance of discard used for sample size analysis  
nonpilot fleets

0 confidential fleets

34 nonconfidential fleets

Other minor fleets  
not uniquely identified  
aggregated into "Other minor fleets" in Tables 4 & 5

**Appendix Table 2. Discard reason categories used in Appendix Tables 3A and 3B and the associated discard fish dispositions.**

Discard Reason Category	FISH DISPOSITION Code	FISH DISPOSITION Description
No Market	001	NO MARKET, REASON NOT SPECIFIED
	002	NO MARKET, TOO SMALL
	003	NO MARKET, TOO LARGE
	005	NO MARKET, WONT KEEP UNTIL TRIP END
	006	NO MARKET, BUT RETAINED BY VESSEL FOR ALTERNATE PROGRAM
	007	NO MARKET, BUT RETAINED FOR OBSERVER FOR SCIENTIFIC PURPOSES
	008	NO MARKET, BROUGHT ONBOARD ONLY FOR THE PURPOSE OF OBSERVER SAMPLING
	Regulation (Size)	012
013		REGULATIONS PROHIBIT RETENTION, TOO LARGE
Regulation (Quota)	004	NO MARKET, QUOTA FILLED
	014	REGULATIONS PROHIBIT RETENTION, QUOTA FILLED
	015	REGULATIONS PROHIBIT RETENTION, NO QUOTA IN AREA
	025	REGULATIONS PROHIBIT ANY RETENTION
Regulation (Other)	011	REGULATIONS PROHIBIT RETENTION, REASON NOT SPECIFIED
	022	REGULATIONS PROHIBIT RETENTION, V-NOTCHED
	023	REGULATIONS PROHIBIT RETENTION, SOFT-SHELL
	024	REGULATIONS PROHIBIT RETENTION, WITH EGGS
Poor Quality	030	POOR QUALITY, GREY MEAT/PARASITES OBSERVED
	031	POOR QUALITY, REASON NOT SPECIFIED
	032	POOR QUALITY, SANDFLEA DAMAGE
	033	POOR QUALITY, SEAL DAMAGE
	034	POOR QUALITY, SHARK DAMAGE
	035	POOR QUALITY, CETACEAN DAMAGE
	036	POOR QUALITY, HAGFISH DAMAGE
	037	POOR QUALITY, SHELL DISEASE
Other	038	POOR QUALITY, GEAR DAMAGE
	000	DISCARDED, UNKNOWN REASON
	040	NOT BROUGHT ON BOARD, OPERATIONAL DISCARDS
	041	NOT BROUGHT ON BOARD, REASON NOT SPECIFIED
	042	NOT BROUGHT ON BOARD, GEAR DAMAGE PREVENTED CAPTURE
	043	NOT BROUGHT ON BOARD, FELL OUT/OFF OF GEAR
	044	NOT BROUGHT ON BOARD, CONSIDERED TO HAVE NO MARKET VALUE
	045	NOT BROUGHT ON BOARD, SAFETY REASON
	046	NOT BROUGHT ON BOARD, MECHANICAL FAILURE
	047	NOT BROUGHT ON BOARD, SPINY DOG CLOGGING PUMP
	048	NOT BROUGHT ON BOARD, VESSEL CAPACITY FILLED
	049	NOT BROUGHT ON BOARD, NOT ENOUGH FISH TO PUMP ABOARD
	052	INCIDENTAL TAKE (MAMMAL, SEA TURTLE, SEA BIRD)
	053	DEBRIS
	054	EMPTY SHELLS
	062	UPGRADED
	063	RETAINING ONLY CERTAIN SIZE BETTER PRICE TRIP QUOTA IN EFFECT
064	RETAINING ONLY CERTAIN SIZE FOR BEST PRICE DUE TO PRICE DIFFERENCE	
070	NOT BROUGHT ON BOARD, QUALITY OF FISH	
071	NOT BROUGHT ON BOARD, CLOGGED PUMP OTHER	
099	DISCARDED, OTHER	

Note: Fish disposition code '039' = POOR QUALITY, PREVIOUSLY DISCARDED has been excluded from this report.

**Appendix Table 3A. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2015 through June 2016 data.**

*Species Group: ATLANTIC SALMON (Salmo salar)* No discards

*Species Group: BLUEFISH (Pomatomus saltatrix)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out						48,125	29.1	2.1	34.9	0.3	32.4	1.2	100.0
Total						48,125	29.1	2.1	34.9	0.3	32.4	1.2	100.0

*Species Group: FLUKE (Paralichthys dentatus) - SCUP (Stenotomus chrysops) - BLACK SEA BASS (Centropristis striata)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	1,923,060	9.4	52.3	31.4	1.6	0.2	5.1	100.0
6	Otter Trawl	OPEN	all	MA	lg	1,326,967	13.2	38.9	35.5	3.6	0.4	8.4	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,906,717	9.9	58.5	24.1	1.6	0.0	5.9	100.0
8	Otter Trawl	OPEN	all	NE	lg	642,565	17.0	17.5	50.1	0.2	0.1	15.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	163,672	63.3	0.0	36.7	0.0	0.0	0.0	100.0
34 Other fleets filtered out						847,949	43.6	14.3	35.3	1.2	0.8	4.8	100.0
Total						6,810,931	16.6	42.2	32.5	1.8	0.2	6.7	100.0

*Species Group: HERRING, ATLANTIC (Clupea harengus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out						219,925	53.9	0.0	37.1	0.0	0.1	8.9	100.0
Total						219,925	53.9	0.0	37.1	0.0	0.1	8.9	100.0

See text for fleet abbreviations.

**Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2015 through June 2016 data.**

*Species Group: LARGE MESH GROUND FISH*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
6	Otter Trawl	OPEN	all	MA	lg	660,780	34.1	3.6	61.1	0.5	0.7	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	936,435	24.5	9.7	65.7	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	2,215,435	7.2	77.7	14.5	0.0	0.3	0.2	100.0
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1,028,166	0.2	98.0	0.7	0.0	0.1	1.1	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	642,537	63.1	0.2	36.6	0.0	0.1	0.0	100.0
34 Other fleets filtered out						1,059,994	24.7	24.6	34.2	0.2	13.0	3.2	100.0
Total						6,543,347	19.6	47.5	29.7	0.1	2.3	0.8	100.0

*Species Group: MONKFISH (Lophius americanus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	207,339	24.4	74.2	0.0	0.0	0.2	1.2	100.0
6	Otter Trawl	OPEN	all	MA	lg	376,357	8.9	90.8	0.0	0.3	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	290,275	1.6	94.4	4.0	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,108,657	2.8	96.4	0.7	0.0	0.1	0.0	100.0
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	301,228	5.6	3.9	2.7	0.0	87.5	0.3	100.0
33	Scallop Dredge	AA	LIM	MA	all	318,491	78.8	18.4	0.0	0.0	0.1	2.7	100.0
34	Scallop Dredge	AA	LIM	NE	all	374,879	88.5	10.5	0.8	0.0	0.0	0.2	100.0
35	Scallop Dredge	OPEN	GEN	MA	all	124,397	34.9	51.2	12.3	0.0	0.2	1.4	100.0
36	Scallop Dredge	OPEN	GEN	NE	all	161,104	65.0	33.0	1.0	0.0	0.1	0.8	100.0
37	Scallop Dredge	OPEN	LIM	MA	all	845,484	72.1	25.0	0.2	0.0	0.1	2.6	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	2,387,166	78.5	18.5	0.9	0.0	0.1	2.0	100.0
28 Other fleets filtered out						422,464	52.3	20.0	9.3	0.0	14.3	4.1	100.0
Total						6,917,842	51.6	40.5	1.6	0.0	4.8	1.5	100.0

See text for fleet abbreviations.

**Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2015 through June 2016 data.**

*Species Group: RED DEEPSEA CRAB (Chaceon quinquegens)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
8	Otter Trawl	OPEN	all	NE	1g	77,154	100.0	0.0	0.0	0.0	0.0	0.0	100.0
49	Pots and Traps, Lobster	OPEN	all	NE	all	50,745	100.0	0.0	0.0	0.0	0.0	0.0	100.0
37 Other fleets filtered out						102,573	99.9	0.0	0.0	0.1	0.0	0.0	100.0
Total						230,472	100.0	0.0	0.0	0.0	0.0	0.0	100.0

*Species Group: SEA SCALLOP (Placopecten magellanicus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
33	Scallop Dredge	AA	LIM	MA	all	6,031,504	80.0	0.0	1.9	0.0	4.8	13.2	100.0
34	Scallop Dredge	AA	LIM	NE	all	6,482,707	77.6	1.4	2.1	0.0	5.5	13.4	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	3,621,199	89.9	0.3	0.0	0.0	9.6	0.3	100.0
36 Other fleets filtered out						6,577,985	73.5	1.3	12.7	0.2	2.2	10.2	100.0
Total						22,713,394	79.0	0.8	4.8	0.0	5.0	10.3	100.0

See text for fleet abbreviations.

**Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2015 through June 2016 data.**

*Species Group: SKATE COMPLEX (Rajidae)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	9,447,941	94.2	0.8	5.0	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	19,024,846	89.0	3.5	7.2	0.0	0.0	0.3	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,763,759	84.7	0.0	15.3	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	29,667,310	89.8	0.2	9.8	0.1	0.0	0.1	100.0
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xl	1,080,702	80.1	0.4	15.9	0.0	2.2	1.4	100.0
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xl	2,183,668	42.9	0.0	32.3	0.5	24.0	0.2	100.0
33	Scallop Dredge	AA	LIM	MA	all	928,959	99.5	0.0	0.4	0.0	0.0	0.0	100.0
34	Scallop Dredge	AA	LIM	NE	all	1,218,752	94.0	0.0	6.0	0.0	0.0	0.0	100.0
35	Scallop Dredge	OPEN	GEN	MA	all	1,928,500	90.1	0.0	6.9	2.1	0.0	0.9	100.0
36	Scallop Dredge	OPEN	GEN	NE	all	903,803	97.4	0.0	2.6	0.0	0.0	0.0	100.0
37	Scallop Dredge	OPEN	LIM	MA	all	4,285,525	99.7	0.0	0.2	0.0	0.0	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	8,918,963	99.4	0.0	0.6	0.0	0.0	0.0	100.0
27 Other fleets filtered out						3,441,937	82.9	0.0	16.3	0.0	0.0	0.7	100.0
Total						84,794,666	90.2	1.0	8.0	0.1	0.6	0.2	100.0

*Species Group: SMALL MESH GROUND FISH*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	305,508	77.3	21.1	0.0	0.0	1.6	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,226,063	89.4	6.6	0.8	0.0	2.1	1.1	100.0
8	Otter Trawl	OPEN	all	NE	lg	760,953	97.6	1.3	0.4	0.0	0.3	0.4	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	160,091	100.0	0.0	0.0	0.0	0.0	0.0	100.0
35 Other fleets filtered out						352,582	74.1	13.5	7.5	0.0	4.9	0.1	100.0
Total						3,805,198	89.1	7.0	1.2	0.0	1.9	0.7	100.0

See text for fleet abbreviations.

**Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2015 through June 2016 data.**

*Species Group: SPINY DOGFISH (Squalus acanthias)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
2	Longline	OPEN	all	NE	all	518,016	88.0	0.0	12.0	0.0	0.0	0.0	100.0
5	Otter Trawl	OPEN	all	MA	sm	2,258,853	99.4	0.1	0.5	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	1,626,280	99.6	0.0	0.4	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,364,615	99.5	0.0	0.5	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	3,536,027	99.5	0.1	0.4	0.0	0.0	0.0	100.0
9	Scallop Trawl	AA	GEN	MA	all	277,811	31.5	0.0	68.5	0.0	0.0	0.0	100.0
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	272,529	10.3	0.0	60.6	0.0	29.0	0.2	100.0
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	2,155,098	93.4	0.3	4.4	0.0	1.7	0.3	100.0
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	161,438	74.1	0.3	3.8	0.0	21.7	0.0	100.0
30 Other fleets filtered out						677,740	79.3	0.4	11.6	0.3	8.4	0.1	100.0
Total						12,848,406	93.3	0.1	4.9	0.0	1.6	0.1	100.0

*Species Group: SQUID (Doryteuthis [Amerigo] pealeii, Illex illecebrosus)- BUTTERFISH (Peprilus triacanthus) - MACKEREL (Scomber scombrus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	3,075,277	90.4	2.7	1.8	0.0	4.8	0.3	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,449,611	92.7	3.5	0.8	0.3	1.7	1.0	100.0
37 Other fleets filtered out						509,052	90.4	2.5	0.3	0.0	5.1	1.7	100.0
Total						6,033,940	91.3	3.0	1.3	0.1	3.6	0.7	100.0

See text for fleet abbreviations.

**Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2015 through June 2016 data.**

*Species Group: SURFCLAM (Spisula solidissima) - OCEAN QUAHOG (Arctica islandica)*

Fleet					Percentage by Discard Reason Category									
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out							2,654,459	95.6	0.0	4.1	0.0	0.3	0.0	100.0
Total							2,654,459	95.6	0.0	4.1	0.0	0.3	0.0	100.0

*Species Group: TILEFISH (Lopholatilus chamaeleonticeps)*

Fleet					Percentage by Discard Reason Category									
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out							22,627	55.2	24.0	10.1	0.0	10.7	0.0	100.0
Total							22,627	55.2	24.0	10.1	0.0	10.7	0.0	100.0

**Appendix Table 3B. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: BLACK SEA BASS (Centropristis striata)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	343,395	12.9	15.9	53.4	0.1	0.1	17.5	100.0
6	Otter Trawl	OPEN	all	MA	lg	250,877	6.7	16.6	32.5	0.4	0.8	42.9	100.0
7	Otter Trawl	OPEN	all	NE	sm	301,116	1.4	2.3	85.6	0.6	0.0	10.1	100.0
8	Otter Trawl	OPEN	all	NE	lg	64,305	11.9	3.0	80.9	2.4	0.1	1.8	100.0
43	Pots and Traps, Fish	OPEN	all	MA	all	99,846	0.0	84.9	15.1	0.0	0.0	0.0	100.0
44	Pots and Traps, Fish	OPEN	all	NE	all	95,189	57.7	5.8	0.0	0.0	0.0	36.5	100.0
33 Other fleets filtered out						115,871	46.4	1.1	52.4	0.0	0.0	0.1	100.0
Total						1,270,599	14.3	15.5	51.2	0.4	0.2	18.4	100.0

*Species: FLUKE (Paralichthys dentatus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	347,348	3.5	19.2	59.5	8.0	0.6	9.3	100.0
6	Otter Trawl	OPEN	all	MA	lg	572,611	1.4	27.7	61.8	7.8	0.5	0.8	100.0
7	Otter Trawl	OPEN	all	NE	sm	209,584	10.6	10.3	67.5	0.0	0.2	11.4	100.0
8	Otter Trawl	OPEN	all	NE	lg	463,783	18.8	2.8	57.9	0.0	0.1	20.3	100.0
34	Scallop Dredge	AA	LIM	NE	all	106,752	64.9	0.0	35.1	0.0	0.0	0.0	100.0
37	Scallop Dredge	OPEN	LIM	MA	all	90,568	77.6	3.2	18.7	0.1	0.3	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	163,349	63.2	0.0	36.7	0.0	0.0	0.0	100.0
32 Other fleets filtered out						312,368	34.5	6.2	52.3	3.3	1.9	1.8	100.0
Total						2,266,363	21.2	12.4	55.1	3.7	0.5	7.1	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: SCUP (Stenotomus chrysops)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	1,232,317	10.2	73.8	15.9	0.0	0.1	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	503,479	30.5	63.4	5.9	0.2	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,396,017	11.5	78.1	4.1	2.1	0.0	4.0	100.0
36 Other fleets filtered out						142,156	19.7	76.3	3.9	0.0	0.0	0.0	100.0
Total						3,273,968	14.3	74.2	8.8	0.9	0.1	1.7	100.0

*Species: AMERICAN PLAICE (Hippoglossoides platessoides)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
8	Otter Trawl	OPEN	all	NE	lg	171,599	1.5	97.2	0.0	0.0	1.1	0.2	100.0
38 Other fleets filtered out						54,683	42.9	14.5	41.9	0.0	0.7	0.0	100.0
Total						226,281	11.5	77.2	10.1	0.0	1.0	0.1	100.0

*Species: ATLANTIC COD (Gadus morhua)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
4	Hand Line	OPEN	all	NE	all	39,055	0.0	65.3	0.0	0.0	0.3	34.4	100.0
8	Otter Trawl	OPEN	all	NE	lg	64,353	0.1	99.2	0.0	0.7	0.1	0.0	100.0
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	26,463	1.1	17.1	2.8	0.0	36.8	42.2	100.0
49	Pots and Traps, Lobster	OPEN	all	NE	all	67,850	30.5	1.1	68.4	0.0	0.0	0.0	100.0
35 Other fleets filtered out						63,595	15.2	35.6	24.7	0.0	21.7	2.7	100.0
Total						261,317	11.7	44.9	24.1	0.2	9.1	10.1	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: ATLANTIC HALIBUT (Hippoglossus hippoglossus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
8	Otter Trawl	OPEN	all	NE	lg	41,233	0.0	60.5	32.6	0.1	0.0	6.7	100.0
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	73,645	0.0	79.2	2.3	0.3	16.5	1.8	100.0
37 Other fleets filtered out						8,338	5.1	74.2	16.3	0.3	0.9	3.2	100.0
Total						123,216	0.3	72.6	13.4	0.2	9.9	3.5	100.0

*Species: ATLANTIC WOLFFISH (Anarhichas lupus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
2	Longline	OPEN	all	NE	all	6,065	27.7	0.0	72.3	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	33,804	13.1	0.0	86.9	0.0	0.0	0.0	100.0
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	4,031	20.9	0.0	79.1	0.0	0.0	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	3,635	92.7	0.0	7.3	0.0	0.0	0.0	100.0
49	Pots and Traps, Lobster	OPEN	all	NE	all	4,832	0.0	0.0	100.0	0.0	0.0	0.0	100.0
34 Other fleets filtered out						2,099	11.4	0.0	88.6	0.0	0.0	0.0	100.0
Total						54,465	19.4	0.0	80.6	0.0	0.0	0.0	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: HADDOCK (Melanogrammus aeglefinus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
7	Otter Trawl	OPEN	all	NE	sm	720,513	27.4	5.4	67.2	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,151,974	0.1	99.8	0.0	0.0	0.1	0.0	100.0
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	995,916	0.0	98.9	0.0	0.0	0.0	1.1	100.0
36 Other fleets filtered out						115,259	10.8	62.5	9.5	0.0	17.2	0.0	100.0
Total						2,983,662	7.1	75.3	16.6	0.0	0.7	0.4	100.0

*Species: OCEAN POUT (Zoarces americanus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	14,874	96.3	0.0	3.7	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	4,855	61.9	0.0	14.0	24.1	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	4,716	41.7	0.0	58.3	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	86,049	67.2	0.0	32.8	0.0	0.0	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	3,479	76.9	0.0	23.1	0.0	0.0	0.0	100.0
49	Pots and Traps, Lobster	OPEN	all	NE	all	19,156	38.7	0.0	61.3	0.0	0.0	0.0	100.0
33 Other fleets filtered out						5,276	37.5	0.0	62.5	0.0	0.0	0.0	100.0
Total						138,405	64.4	0.0	34.8	0.8	0.0	0.0	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: POLLOCK (Pollachius virens)*

Fleet						Percentage by Discard Reason Category								
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
27	Sink, Anchor, Drift Gillnet		OPEN	all	NE	lg	73,827	0.0	35.1	0.1	0.0	64.7	0.1	100.0
38 Other fleets filtered out							133,326	0.6	85.4	0.4	0.0	11.5	2.1	100.0
Total							207,152	0.4	67.5	0.3	0.0	30.5	1.4	100.0

*Species: REDFISH (Sebastes fasciatus)*

Fleet						Percentage by Discard Reason Category								
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out							117,566	15.2	82.8	1.0	0.0	0.6	0.4	100.0
Total							117,566	15.2	82.8	1.0	0.0	0.6	0.4	100.0

*Species: WHITE HAKE (Urophycis tenuis)*

Fleet						Percentage by Discard Reason Category								
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out							68,366	51.4	5.1	19.6	0.0	23.7	0.1	100.0
Total							68,366	51.4	5.1	19.6	0.0	23.7	0.1	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: WINDOWPANE FLOUNDER (Scophthalmus aquosus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	176,259	49.3	0.4	50.4	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	574,651	34.7	0.0	64.9	0.4	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	43,944	13.0	1.3	85.4	0.3	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	322,360	21.6	0.0	78.4	0.0	0.0	0.0	100.0
35	Scallop Dredge	OPEN	GEN	MA	all	28,365	56.4	0.0	42.6	0.0	0.0	1.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	205,925	56.0	0.0	44.0	0.0	0.0	0.0	100.0
33 Other fleets filtered out						61,817	41.6	0.2	58.0	0.0	0.0	0.2	100.0
Total						1,413,321	36.7	0.1	63.0	0.2	0.0	0.0	100.0

*Species: WINTER FLOUNDER (Pseudopleuronectes americanus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	99,680	18.4	4.7	75.0	1.8	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	50,664	13.8	31.3	46.2	0.0	8.6	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	71,077	17.1	9.0	73.8	0.0	0.0	0.1	100.0
8	Otter Trawl	OPEN	all	NE	lg	47,155	11.2	75.9	8.0	0.0	4.6	0.3	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	227,766	77.1	0.1	22.8	0.0	0.0	0.0	100.0
34 Other fleets filtered out						35,651	34.4	2.8	62.0	0.0	0.7	0.1	100.0
Total						531,992	43.4	12.0	42.9	0.3	1.3	0.0	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: WITCH FLOUNDER (Glyptocephalus cynoglossus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	24,489	35.4	11.2	53.4	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	12,201	41.9	21.6	36.5	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	25,441	24.6	12.5	62.8	0.0	0.1	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	88,611	1.8	95.2	1.8	0.0	0.2	1.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	27,259	90.5	2.2	6.8	0.0	0.6	0.0	100.0
34 Other fleets filtered out						20,025	56.9	35.2	7.6	0.0	0.0	0.2	100.0
Total						198,028	29.1	50.8	19.4	0.0	0.2	0.5	100.0

*Species: YELLOWTAIL FLOUNDER (Limanda ferruginea)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
8	Otter Trawl	OPEN	all	NE	lg	54,479	3.7	96.1	0.0	0.0	0.2	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	101,830	37.9	0.0	62.1	0.0	0.0	0.0	100.0
37 Other fleets filtered out						63,267	26.4	10.2	62.2	0.7	0.4	0.0	100.0
Total						219,576	26.1	26.8	46.7	0.2	0.2	0.0	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: OFFSHORE HAKE (Merluccius albidus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	10,097	100.0	0.0	0.0	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	1,917	100.0	0.0	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	956	74.7	0.0	0.0	0.0	25.3	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	437	100.0	0.0	0.0	0.0	0.0	0.0	100.0
35 Other fleets filtered out						3,004	97.6	1.9	0.0	0.0	0.5	0.0	100.0
Total						16,411	98.1	0.3	0.0	0.0	1.6	0.0	100.0

*Species: RED HAKE (Urophycis chuss)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	219,239	70.8	29.2	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,875,496	90.6	7.4	0.7	0.0	0.1	1.3	100.0
8	Otter Trawl	OPEN	all	NE	lg	245,656	97.1	2.9	0.0	0.0	0.0	0.0	100.0
38	Scallop Dredge	OPEN	LIM	NE	all	133,504	100.0	0.0	0.0	0.0	0.0	0.0	100.0
49	Pots and Traps, Lobster	OPEN	all	NE	all	103,587	79.7	0.0	20.3	0.0	0.0	0.0	100.0
34 Other fleets filtered out						102,255	89.2	5.5	5.0	0.0	0.1	0.1	100.0
Total						2,679,737	89.6	8.0	1.4	0.0	0.1	0.9	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: SILVER HAKE (Merluccius bilinearis)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
7	Otter Trawl	OPEN	all	NE	sm	349,612	82.4	1.8	1.7	0.0	14.2	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	514,929	97.9	0.6	0.5	0.0	0.4	0.6	100.0
37 Other fleets filtered out						244,510	73.0	18.1	0.2	0.0	8.7	0.0	100.0
Total						1,109,051	87.5	4.8	0.8	0.0	6.6	0.3	100.0

*Species: ATLANTIC MACKEREL (Scomber scombrus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
39 Other fleets filtered out						35,145	97.4	0.0	1.2	0.0	0.5	0.9	100.0
Total						35,145	97.4	0.0	1.2	0.0	0.5	0.9	100.0

*Species: BUTTERFISH (Peprilus triacanthus)*

Fleet						Percentage by Discard Reason Category							
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	1,952,074	95.2	3.0	1.8	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,765,637	96.0	2.4	1.1	0.3	0.1	0.2	100.0
37 Other fleets filtered out						98,789	87.0	12.8	0.2	0.0	0.0	0.0	100.0
Total						3,816,500	95.3	3.0	1.4	0.2	0.0	0.1	100.0

See text for fleet abbreviations.

**Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 23 individual species that compose the 14 species groups, based on July 2015 through June 2016 data.**

*Species: NORTHERN SHORTFIN SQUID (Illex illecebrosus)*

Fleet						Percentage by Discard Reason Category								
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl		OPEN	all	MA	sm	431,373	94.2	0.0	5.7	0.0	0.2	0.0	100.0
7	Otter Trawl		OPEN	all	NE	sm	482,562	92.5	0.0	0.4	0.0	5.4	1.7	100.0
37 Other fleets filtered out							310,848	99.9	0.0	0.0	0.0	0.0	0.0	100.0
Total							1,224,783	95.0	0.0	2.2	0.0	2.2	0.7	100.0

*Species: LONGFIN INSHORE SQUID (Doryteuthis [Amerigo] pealeii)*

Fleet						Percentage by Discard Reason Category								
Row	Gear	Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl		OPEN	all	MA	sm	659,373	73.4	3.7	0.0	0.0	21.5	1.4	100.0
38 Other fleets filtered out							271,132	59.6	15.4	0.4	0.0	14.2	10.4	100.0
Total							930,506	69.4	7.1	0.1	0.0	19.4	4.0	100.0

**Appendix Table 4. Fleet abbreviations used in Figures 1A, 1B, 2, and 3. Fleets that were filtered out through the importance filter and fleets designated as in need of pilot coverage have been aggregated into "Other fleets."**

Row	Fleet Gear Type	Access Area	Trip Category	Region	Mesh Group	Fleet Abbreviation
1	Longline	OPEN	all	MA	all	LL MA (Row 1)
2	Longline	OPEN	all	NE	all	LL NE (Row 2)
3	Hand Line	OPEN	all	MA	all	HL MA (Row 3)
4	Hand Line	OPEN	all	NE	all	HL NE (Row 4)
5	Otter Trawl	OPEN	all	MA	sm	OT sm MA (Row 5)
6	Otter Trawl	OPEN	all	MA	lg	OT lg MA (Row 6)
7	Otter Trawl	OPEN	all	NE	sm	OT sm NE (Row 7)
8	Otter Trawl	OPEN	all	NE	lg	OT lg NE (Row 8)
9	Scallop Trawl	AA	GEN	MA	all	SCT AA GEN MA (Row 9)
10	Scallop Trawl	AA	LIM	MA	all	SCT AA LIM MA (Row 10)
11	Scallop Trawl	OPEN	GEN	MA	all	SCT OPEN GEN MA (Row 11)
12	Scallop Trawl	OPEN	LIM	MA	all	SCT OPEN LIM MA (Row 12)
13	Otter Trawl, Twin	OPEN	all	MA	all	OTT MA (Row 13)
14	Otter Trawl, Twin	OPEN	all	NE	all	OTT NE (Row 14)
15	Otter Trawl, Ruhle	OPEN	all	MA	lg	OTR lg MA (Row 15)
16	Otter Trawl, Ruhle	OPEN	all	NE	sm	OTR sm NE (Row 16)
17	Otter Trawl, Ruhle	OPEN	all	NE	lg	OTR lg NE (Row 17)
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	OTH lg NE (Row 18)
19	Shrimp Trawl	OPEN	all	MA	all	SHT MA (Row 19)
20	Shrimp Trawl	OPEN	all	NE	all	SHT NE (Row 20)
21	Floating Trap	OPEN	all	MA	all	FT MA (Row 21)
22	Floating Trap	OPEN	all	NE	all	FT NE (Row 22)
23	Sink, Anchor, Drift Gillnet	OPEN	all	MA	sm	GN sm MA (Row 23)
24	Sink, Anchor, Drift Gillnet	OPEN	all	MA	lg	GN lg MA (Row 24)
25	Sink, Anchor, Drift Gillnet	OPEN	all	MA	xlg	GN xlg MA (Row 25)
26	Sink, Anchor, Drift Gillnet	OPEN	all	NE	sm	GN sm NE (Row 26)
27	Sink, Anchor, Drift Gillnet	OPEN	all	NE	lg	GN lg NE (Row 27)
28	Sink, Anchor, Drift Gillnet	OPEN	all	NE	xlg	GN xlg NE (Row 28)
29	Purse Seine	OPEN	all	MA	all	PS MA (Row 29)
30	Purse Seine	OPEN	all	NE	all	PS NE (Row 30)
31	Scallop Dredge	AA	GEN	MA	all	SCD AA GEN MA (Row 31)
32	Scallop Dredge	AA	GEN	NE	all	SCD AA GEN NE (Row 32)
33	Scallop Dredge	AA	LIM	MA	all	SCD AA LIM MA (Row 33)
34	Scallop Dredge	AA	LIM	NE	all	SCD AA LIM NE (Row 34)
35	Scallop Dredge	OPEN	GEN	MA	all	SCD OPEN GEN MA (Row 35)
36	Scallop Dredge	OPEN	GEN	NE	all	SCD OPEN GEN NE (Row 36)
37	Scallop Dredge	OPEN	LIM	MA	all	SCD OPEN LIM MA (Row 37)

**Appendix Table 4, continued. Fleet abbreviations used in Figures 1A, 1B, 2, and 3. Fleets that were filtered out through the importance filter and fleets designated as in need of pilot coverage have been aggregated into "Other fleets."**

Row	Fleet Gear Type	Access Area	Trip Category	Region	Mesh Group	Fleet Abbreviation
38	Scallop Dredge	OPEN	LIM	NE	all	SCD OPEN LIM NE (Row 38)
39	Danish Seine	OPEN	all	MA	all	DS MA (Row 39)
40	Mid-water Paired & Single Trawl	AA	all	NE	all	MWT AA NE (Row 40)
41	Mid-water Paired & Single Trawl	OPEN	all	MA	all	MWT MA (Row 41)
42	Mid-water Paired & Single Trawl	OPEN	all	NE	all	MWT NE (Row 42)
43	Pots and Traps, Fish	OPEN	all	MA	all	FPT MA (Row 43)
44	Pots and Traps, Fish	OPEN	all	NE	all	FPT NE (Row 44)
45	Pots and Traps, Conch	OPEN	all	MA	all	CPT MA (Row 45)
46	Pots and Traps, Conch	OPEN	all	NE	all	CPT NE (Row 46)
47	Pots and Traps, Hagfish	OPEN	all	NE	all	HPT NE (Row 47)
48	Pots and Traps, Lobster	OPEN	all	MA	all	LPT MA (Row 48)
49	Pots and Traps, Lobster	OPEN	all	NE	all	LPT NE (Row 49)
50	Pots and Traps, Crab	OPEN	all	MA	all	CRPT MA (Row 50)
51	Pots and Traps, Crab	OPEN	all	NE	all	CRPT NE (Row 51)
52	Beam Trawl	OPEN	all	MA	all	BT MA (Row 52)
53	Beam Trawl	OPEN	all	NE	all	BT NE (Row 53)
54	Dredge, Other	OPEN	all	MA	all	DRO MA (Row 54)
55	Ocean Quahog/Surfclam Dredge	OPEN	all	MA	all	CDR MA (Row 55)
56	Ocean Quahog/Surfclam Dredge	OPEN	all	NE	all	CDR NE (Row 56)
	Other fleets filtered out					Other fleets

## APPENDIX: EQUATIONS USED IN DISCARD ESTIMATION AND SAMPLE SIZE ANALYSES

Total discarded pounds for species  $j$  in fleet  $h$  (i.e., gear type, access area, trip category, region, and mesh group stratum combination) is defined as:

$$(1) \hat{D}_{j,h} = \sum_{q=1}^Q K_{q,h} r_{c,j,h}$$

where

$$(2) r_{c,j,h} = \frac{\sum_{q=1}^Q N_{q,h} \sum_{i=1}^{n_{q,h}} \frac{d_{j,i,q,h}}{n_{q,h}}}{\sum_{q=1}^Q N_{q,h} \sum_{i=1}^{n_{q,h}} \frac{k_{i,q,h}}{n_{q,h}}}$$

Where  $\hat{D}_{j,h}$  is total discarded pounds for species  $j$  in fleet  $h$ ;  $K_{q,h}$  is vessel trip report (VTR) total kept pounds of all species in quarter  $q$  and fleet  $h$ ;  $r_{c,j,h}$  is the combined ratio of species  $j$  in fleet  $h$ ;  $d_{j,i,q,h}$  is discards of species  $j$  from trip  $i$  in quarter  $q$  and fleet  $h$ ;  $k_{i,q,h}$  is kept pounds of all species on trip  $i$  in quarter  $q$  and fleet  $h$ ;  $N_{q,h}$  is the number of VTR trips in quarter  $q$  and fleet  $h$ ;  $n_{q,h}$  is the number of observed trips in quarter  $q$  and fleet  $h$ . A fleet is defined by a gear type, access area, trip category, region, and mesh group combination. In Eq. 2  $q$  denotes calendar quarters.

Variance of  $\hat{D}_{j,h}$  for species  $j$  in fleet  $h$  is defined as:

$$(3) V(\hat{D}_{j,h}) = \sum_{q=1}^Q K_{q,h}^2 \left( \frac{N_{q,h} - n_{q,h}}{n_{q,h} N_{q,h}} \right) \left( \frac{\sum_{i=1}^{n_{q,h}} k_{i,q,h}}{n_{q,h}} \right)^2 \left[ \frac{\sum_{i=1}^{n_{q,h}} (d_{j,i,q,h}^2 + (r_{c,j,h})^2 k_{i,q,h}^2 - 2r_{c,j,h} d_{j,i,q,h} k_{i,q,h})}{n_{q,h} - 1} \right]$$

where  $\hat{D}_{j,h}$  is total discarded pounds for species  $j$  in fleet  $h$ ;  $K_{q,h}$  is VTR total kept pounds of all species in quarter  $q$  and fleet  $h$ ;  $r_{c,j,h}$  is the combined ratio of species  $j$  in fleet  $h$ ;  $d_{j,i,q,h}$  is discards of species  $j$  from trip  $i$  in quarter  $q$  and fleet  $h$ ;  $k_{i,q,h}$  is kept pounds of all species on trip  $i$  in quarter  $q$  and fleet  $h$ ;  $N_{q,h}$  is the number of VTR trips in quarter  $q$  and fleet  $h$ ;  $n_{q,h}$  is the number of observed trips in quarter  $q$  and fleet  $h$ .

Standard Error of the discard estimate for species  $j$  in fleet  $h$  is defined as:

$$(4) \quad SE(\hat{D}_{j,h}) = \sqrt{V(\hat{D}_{j,h})}$$

Coefficient of variation (CV) of  $\hat{D}_{j,h}$  for species  $j$  in fleet  $h$  is defined as:

$$(5) \quad CV(\hat{D}_{j,h}) = \frac{\sqrt{V(\hat{D}_{j,h})}}{\hat{D}_{j,h}}$$

Total discarded pounds of species  $j$  over all fleets,  $h$ , from 1 to  $H$  fleets, is defined as:

$$(6) \quad \hat{D}_{T,j} = \sum_{h=1}^H \hat{D}_{j,h}$$

Variance of  $\hat{D}_{T,j}$  for species  $j$  over all fleets is defined as:

$$(7) \quad V(\hat{D}_{T,j}) = \sum_{h=1}^H V(\hat{D}_{j,h}) + \sum_{h=1}^H \sum_{k \neq h}^H Cov(\hat{D}_{j,h}, \hat{D}_{j,k})$$

where the covariance term equals zero (fleets are independent; nonoverlapping strata)

Coefficient of variation of  $\hat{D}_{T,j}$  for species  $j$  over all fleets is defined as:

$$(8) \quad CV(\hat{D}_{T,j}) = \frac{\sqrt{V(\hat{D}_{T,j})}}{\hat{D}_{T,j}}$$

The number of sea days and trips needed to achieve a 30% coefficient of variation (CV) is derived based on the variance of the total discards for species  $j$  in fleet  $h$  using the combined ratio method and the d/k discard ratio (Eq. 3).

From Eq. 3, let

$$(9) \quad \hat{S}_{j,q,h}^2 = \left[ \frac{\sum_{i=1}^{n_{q,h}} (d_{j,i,q,h}^2 + (r_{c,j,h})^2 k_{i,q,h}^2 - 2r_{c,j,h} d_{j,i,q,h} k_{i,q,h})}{n_{q,h} - 1} \right] \quad \text{and}$$

$$(10) \quad \delta_{q,h} = \frac{n_{q,h}}{\sum_{q=1}^Q n_{q,h}}$$

where  $\delta_{q,h}$  is the fraction of the trips in quarter  $q$  in fleet  $h$ ;  $r_{c,j,h}$  is the combined annual ratio of species  $j$  in fleet  $h$ ;  $d_{j,i,q,h}$  is discards of species  $j$  from trip  $i$  in quarter  $q$  in fleet  $h$ ;  $k_{i,q,h}$  is kept pounds of all species on trip  $i$  in quarter  $q$  in fleet  $h$ ; and  $n_{q,h}$  is the number of observed trips in quarter  $q$  in fleet  $h$ . The  $r_{c,j,h}$  in Eq. 9 is defined in Eq. 2 where the summation is over quarters within a given fleet defined by gear, region, access area, trip type, and so forth.

The number of trips necessary to achieve a 30% CV based on the variance of the composite annual total discards for species group  $j$  in fleet  $h$  is defined as:

$$(11) \quad \hat{T}D_{30j,h} = \frac{\sum_{q=1}^Q \left( \frac{K_{q,h}^2}{\bar{k}_{q,h}^2} \hat{S}_{j,q,h}^2 \frac{1}{\delta_{q,h}} \right)}{(0.09) \hat{D}_{j,h}^2 + \frac{\sum_{q=1}^Q \frac{K_{q,h}^2}{\bar{k}_{q,h}^2} \hat{S}_{j,q,h}^2}{N_h}}$$

where  $0.09 = 0.30^2$ , the square of the 30% CV, the given precision level.

The number of sea days necessary to achieve a 30% CV based on the variance of the composite annual total discards for species group  $j$  in fleet  $h$  is defined as:

$$(12) \quad \hat{S}D_{30j,h} = \hat{T}D_{30j,h} * \overline{DA}_h$$

where  $\overline{DA}_h$  is the weighted average trip length of VTR trips in fleet  $h$  (weighted by the number of VTR trips in each quarter).

When total discards could not be estimated because of little or no observer coverage (no data) or when total discards are zero (no variance), sample size was determined by pilot coverage, where 2% of the quarterly VTR trips for a fleet were multiplied by the quarterly mean VTR trip length.

$$(13) \quad \hat{S}_{30,j,h,q} = \hat{T}_{h,q} * \overline{DA}_{h,q}$$

where  $\hat{T}_{h,q}$  is 2% of the VTR trips in fleet  $h$  and quarter  $q$ , and  $3 \leq \hat{T}_{h,q} \leq 100$  trips;  $\overline{DA}_{h,q}$  is the average trip length of VTR trips in fleet  $h$  and quarter  $q$ . If there were less than 3 VTR trips in fleet  $h$  and quarter  $q$ , then pilot coverage was set to zero for that fleet and quarter. The quarterly trips and sea days were then summed for annual number of trips and sea days.

The achieved precision resulting from the number of funded sea days can be derived by converting funded sea days into funded trips. The number of funded trips,  $\hat{T}F_h$  for fleet  $h$  is defined as:

$$(14) \quad \hat{T}F_h = \hat{S}F_h / \overline{DA}_h$$

where  $\hat{S}_h$  is the number of funded sea days in fleet  $h$  and  $\overline{DA}_h$  is the weighted average trip length of VTR trips in fleet  $h$  (weighted by the number of VTR trips in each quarter).

The achieved coefficient of variation (CV) of  $\hat{D}_j$  is based on the variance of the composite annual total discards for species group  $j$  in fleet  $h$  and the number of funded trips in fleet  $h$  and rewriting Eq. 11.

From Eq. 11, let

$$(15) \quad CV(\hat{D}_{j,h}) = \sqrt{\frac{\sum_{q=1}^Q \left( \frac{K_{q,h}^2}{\bar{k}_{q,h}^2} \hat{S}_{j,q,h}^2 \frac{1}{\delta_{q,h}} \right) - \hat{T}F_h \left[ \frac{\sum_{q=1}^Q \left( \frac{K_{q,h}^2}{\bar{k}_{q,h}^2} \hat{S}_{j,q,h}^2 \right)}{N_h} \right]}{\hat{T}F_h * \hat{D}_{j,h}^2}}$$

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