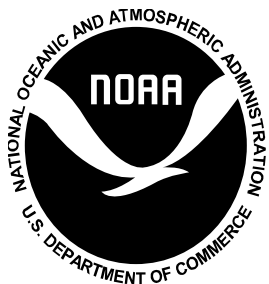




NOAA Technical Memorandum NMFS-NE-243

2018 Discard Estimation, Precision, and Sample Size Analyses for 14 Federally Managed Species Groups in the Waters off the Northeastern United States

**US DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Fisheries Science Center
Woods Hole, Massachusetts
April 2018**



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2018 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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Editorial Notes

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.

Species Names: The NEFSC Editorial Office's policy on the use of species names in all technical communications is generally to follow the American Fisheries Society's lists of scientific and common names for fishes, mollusks, and decapod crustaceans and to follow the Society for Marine Mammalogy's guidance on scientific and common names for marine mammals. Exceptions to this policy occur when there are subsequent compelling revisions in the classifications of species, resulting in changes in the names of species.

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TABLE OF CONTENTS

LIST OF TABLES	v
LIST OF FIGURES	vi
LIST OF APPENDICES.....	vii
LIST OF ACRONYMS AND ABBREVIATIONS	viii
EXECUTIVE SUMMARY	ix
INTRODUCTION	1
METHODS	1
Data Sources	1
Discard Estimation.....	5
Discard Reasons.....	5
Sample Size Analysis.....	6
RESULTS	7
DISCUSSION	11
ACKNOWLEDGMENTS	13
REFERENCES CITED.....	14
APPENDIX: EQUATIONS USED IN DISCARD ESTIMATION AND SAMPLE SIZE ANALYSES	179

LIST OF TABLES

Table 1.	List of the 14 fish and invertebrate species groups, 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.....	16
Table 2.	Number of Northeast Fisheries Observer Program and Vessel Trip Report trips, by fleet and calendar quarter based on July 2016 through June 2017 data	17
Table 3.	Number of Northeast Fisheries Observer Program and Vessel Trip Report sea days, by fleet and calendar quarter based on July 2016 through June 2017 data	19
Table 4.	Vessel Trip Report kept weight of all species, percentage of kept weight of all species across all fleets, kept weight of all species with Northeast Fisheries Observer Program 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 2016 through June 2017 data	21
Table 5A.	Total catch, Vessel Trip Report landings, estimated discards, associated coefficient of variation, and standard error of the estimated discards for 14 fish and invertebrate species groups, by fleet, based on July 2016 through June 2017 data	23
Table 5B.	Total catch, Vessel Trip Report landings, estimated discards, associated coefficient of variation, and standard error of the estimated discards for 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data	51
Table 5C.	Total catch, Vessel Trip Report landings, estimated discards, associated coefficient of variation, and standard error of the estimated discards for 14 Standardized Bycatch Reporting Methodology species groups combined, by fleet, based on July 2016 through June 2017 data.....	101
Table 6A.	Number of trips 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 trips, the number of minimum pilot trips, and the maximum number of trips needed for each fleet for fish and invertebrate species groups based on July 2016 through June 2017 data	103
Table 6B.	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 for fish and invertebrate species groups based on July 2016 through June 2017 data.....	105
Table 7.	Number of sea days, trips, and percentage of trips needed to achieve a 30% coefficient of variation of the discard estimate, by fleet and species group, based on July 2016 through June 2017 data	107

LIST OF FIGURES

Figure 1A.	Percentage of Vessel Trip Report landings and estimated discards and the percentage of estimated discards by fleet for each of the 14 species groups, based on July 2016 through June 2017 data.....	109
Figure 1B.	Percentage of Vessel Trip Report landings and estimated discards and the percentage of estimated discards by fleet for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data	116
Figure 2.	Percentage of Vessel Trip Report landings and estimated discards and the percentage of estimated discards by species groups for 38 nonpilot fleets, based on July 2016 through June 2017 data.....	129
Figure 3.	Results from the 2018 sample size analysis conducted for selected fleets	148

LIST OF APPENDICES

Appendix Table 1. The number of fleets used in 2018 analyses and reported in the tables of this report	159
Appendix Table 2. Discard reason categories used in Appendix Tables 3A and 3B and the associated discard fish dispositions	160
Appendix Table 3A. Estimated discards and percentage by discard reason category for 14 species groups, based on July 2016 through June 2017 data	161
Appendix Table 3B. Estimated discards and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data	167
Appendix Table 4. Fleet abbreviations used in Figures 1A, 1B, 2, and 3	177
Appendix: Equations used in discard estimation and sample size analyses	179

LIST OF ACRONYMS AND ABBREVIATIONS

AA = Access area
ASM = At-Sea Monitoring Program
CFDBS = commercial landings database
CV = coefficient of variation
d/k = discard/kept
FED = finfish excluder device
FMP = fishery management plan
FSB = Fisheries Sampling Branch
GEN = General category
IFS = Industry Funded Scallop Observer program
lg = large mesh
LIM = Limited access category
MA = Mid-Atlantic
MAFMC = Mid-Atlantic Fishery Management Council
MRIP = Marine Recreational Information Program
NE = New England
NEFMC = New England Fishery Management Council
NEFOP = Northeast Fisheries Observer Program
NEFSC = Northeast Fisheries Science Center
NOAA = National Oceanic and Atmospheric Administration
NMFS = National Marine Fisheries Service
OB = observed or observer
OBDBS = observer database
OPEN = Nonaccess area
SBRM = Standardized Bycatch Reporting Methodology
SE = standard error of the estimate
sm = small mesh
US = United States
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 2016 through June 2017 time period and the expected coverage needed by at-sea observers for northeastern US fisheries for the April 2018 through March 2019 time period using the Standardized Bycatch Reporting Methodology.

An estimated 69,947 mt (154,206,116 lb) of federally regulated species were discarded during the July 2016 through June 2017 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 15,599 sea days for the 14 fish and invertebrate species groups across 68 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 2018 are similar to those conducted in 2017 (Wigley and Tholke 2017) 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 New England Fishery Management Council (NEFMC) and Mid-Atlantic Fishery Management Council (MAFMC) federal fishery management plans (FMPs) in northeastern US fleets¹. 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 prioritization² and does not contain information about sea turtles.

METHODS

Data Sources

The data sets used include July 2016 through June 2017 data from the Northeast Fisheries Science Center's (NEFSC) observer (OBDBS) database, the Vessel Trip Report (VTR; including logbooks from the surfclam [*Spisula solidissima*] and ocean quahog [*Arctica islandica*] fishery) database, the NEFSC commercial landings (CFDBS) database, and the National Oceanic and Atmospheric Administration (NOAA) Marine Recreational Information Program (MRIP) database.

During the July 2016 through June 2017 time period, the NEFSC's Fisheries Sampling Branch (FSB) managed three comprehensive observer programs (the Northeast Fisheries Observer Program [NEFOP], the Industry Funded Scallop Observer Program [IFS], and the At-Sea Monitoring Program [ASM]) that collect a broad range of data including information on all species, by disposition (retained and discarded), that are encountered during a fishing trip as well as gear characteristics data and economic information. Biological samples are collected in the NEFOP and IFS programs but not the ASM program (NEFSC 2016a, 2016b). The FSB employs trained sea-going observers and monitors to collect these data. Fish and invertebrate species are

¹ "Fleet" is synonymous with "fishing mode."

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

recorded by weight. Conversion factors were applied to convert any dressed-weight data to live³-weight equivalents.

For this analysis, only observed hauls from non-state funded NEFOP⁴ and IFS trips with a “complete” sampling protocol were used and are referred to collectively as observed (OB) trips. A “complete” sampling protocol includes obtaining species weights for both kept and discarded portions of all species in the catch. Observer 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 Grand Banks (statistical areas < “400”) and the NMFS Southeast Region (statistical areas $\geq$ “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, hauls using a try net⁵, 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. There were 1 observed New England (NE) large mesh belly panel otter trawl trip, 1 observed NE large mesh mid-water trawl trip, 1 observed Mid-Atlantic (MA) blue crab pot and trap trip, and 1 NE large mesh scallop beam trawl trip for which there were no corresponding VTR trips for the gear type. There were 2 observed MA small mesh OPEN GEN scallop trawl trips, 2 observed MA small mesh shrimp trawl trips, and 1 observed MA Other dredge trip with no corresponding VTR trips for the calendar quarter. Hence, these 9 observed trips were removed 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 and Mid-Atlantic based on port of departure⁶; 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 all trawl⁷ and gillnet

³ In this document, “live” is equivalent to “round” grade (i.e., includes the weight of the shell for shellfish).

⁴ State-funded NEFOP trips, such as Atlantic States Marine Fisheries Commission funded trips (program code = 042) and the New York Department of Conservation funded trips (program code= 045) are excluded from this analysis. Additionally, the ASM trips (program codes = 230, 231, 241) associated with Northeast Multispecies (groundfish) fishery management plan are also excluded. These trips may have different goals/objectives and/or difference stratification/sea day allocations than the other NEFOP trips and IFS trips. To reduce potential bias within SBRM, these observed trips have not been used in the 2018 analyses. This differs from the previous analyses conducted between 2012 and 2017.

⁵ A try net is often used concurrently with shrimp trawl and shrimp twin trawls but has not been reported in the VTR (no corresponding gear code in the VTR database), hence a sampling frame is not available for this gear type.

⁶ Wigley et al. (2007) found that the majority (over 93%) of 2004 observed trips both originated and fished in the same region and exhibit the same general pattern as the in the VTR data. An updated analysis using July 2007 through June 2011 data found similar results (Wigley et al. 2012a). While data from both the VTR and OB as summarized by port landed, the allocation of sea day coverage is necessarily based on port of departure since an observer must physically board the vessel. A review of the NEFOP and VTR databases revealed few instances (approximately 2%) where the change of port of landing from port of departure results in a change in region (i.e., NE to MA or vice versa).

⁷ In the 2018 analyses, specific mesh size groups were applied to all trawl gear. In previous analysis, only otter trawl, Rhule trawl, and haddock separator trawl had specific mesh size groups. The application of specific mesh size groups to all trawl gear represents a refinement and resolves the inconsistent use of mesh size among trawl gear.

gear types. For 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 48—row references in this text apply to Tables 2-7).

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 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 permit⁸. (See NOAA Fisheries Greater Atlantic Regional Fisheries Office [Vessel Trip Report Instructions](#) for guidance.) These self-reported data⁹ constitute the basis of commercial fishing activity. While dealer data are preferred 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 OB 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.

There are some fleets that contain few VTR trips. In the 2018 analysis¹⁰, if a fleet has 3 or more VTR trips in any quarter then the fleet is included in the analysis as a unique fleet. If a

⁸ In Fall 2017, NEFMC and MAFMC approved the SBRM Framework action to allow the inclusion of vessels with federal commercial lobster only permits into the SBRM analyses. The pending framework action may be implemented in April 2018; hence, the 2018 SBRM discard estimation and sample size analysis do not include fishing trips of vessels that hold only a federal commercial lobster permit.

⁹ See Wigley et al. 2007 for more details on self-reported VTR data.

¹⁰ Prior to the 2018 analysis, fleets with few trips were handled in a similar fashion qualitatively and not formally described in the documents.

fleet has fewer than 3 trips per quarter for all quarters then there were too few trips to analyze as a fleet and these trips were aggregated into “Other minor fleets.” This aggregated fleet had no discard estimation and no observer coverage estimated for the upcoming year (Appendix Table 1); however, landings from these trips were aggregated and reported to allow tracking of industry activity not included in the analysis.

Gear types that continue to be aggregated into “Other minor fleets” were: gear unknown (negear = 999); harpoon (negear = 030); longline pelagic (negear = 040); rakes (negear = 250); and diving (negear = 330).

The VTR trips associated with the MA shrimp trawl and MA shrimp twin trawl fleets (Rows 22 and 24) were partitioned into 2 groups: trips fishing in Pamlico Sound and trips fishing in ocean waters. Partitioning was needed because the NMFS 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 and MA shrimp twin 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 clam logbook data were used to augment the VTR data for the clam dredge fishery.

The commercial¹¹ and recreational landings (in live weight; from the CFDBS and MRIP databases) for the federally managed species were used only in the sample size analysis and not in the discard estimation 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. In the 2018 analysis, blueline tilefish¹² (*Caulolatilus microps*) was added to the tilefish species group. Summaries of the data used, in terms of number of trips and number of sea days, by fleet, calendar quarter, and data source (OB 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 observed trip occurred in the fleet-quarter-statistical area cell and at least 3 observed trips¹³ 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.

¹¹ Aquaculture landings for Atlantic salmon (*catch_source* = “A”) have been excluded from the commercial dealer data (CFDBS) because these landings are not removals from the wild population.

¹² As of December 15, 2017, blueline tilefish became a federally managed species in the [Mid-Atlantic Fishery Management Council’s Golden and Blueline Tilefish Fishery Management Plan](#).

¹³ The 3 trips for fleet-quarter correspond with a minimum threshold for allocating observer coverage.

Discard Estimation

Total discards of each of the 14 federally managed species groups were estimated for the July 2016 through June 2017 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 coverage¹⁴. 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.

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

¹⁴ 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).

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 2016 through June 2017 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. To avoid assigning more coverage than could be attained, if fewer 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 2018 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 retained for those fleets where discards constituted the upper cumulative 95% of the discard mortality and where discards constituted the upper cumulative 98% of the total fishing mortality.

To determine the number of sea days (referred to as the “2018 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 SBRM species groups retained by the filter will have a 30% CV or less. In the event that sea days for each species group within a fleet were filtered out, or the number of sea days needed is less than the minimum pilot days, 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 68 fleets uniquely identified in the July 2016 through June 2017 data (Tables 2 and 3; Appendix Table 1). Based upon the industry activity during this time period, refinements to quantitatively define unique fleets as those with at least 3 VTR trips in a fleet and calendar quarter (other trips are aggregated in “Other minor fleets”), and application of specific mesh size groups to all trawls, several new fleets were added to the collection of fleets analyzed. New fleets include: MA small mesh Ruhle otter trawl (Row 18), MA small mesh shrimp twin otter trawl (Row 24), MA small mesh other otter trawl (Row 25), MA large mesh other otter trawl (Row 26), NE small mesh other otter trawl (Row 27), NE Danish seine (Row 47), MA and NE other pots and traps (Rows 51 and 52, respectively), NE weir (Row 60), and NE urchin dredge (Row 66). Existing trawl fleets split into 2 specific mesh groups include: MA AA GEN small mesh and large mesh scallop otter trawl (Rows 9 and 10, respectively), MA OPEN GEN small mesh and large mesh scallop otter trawl (Rows 11 and 12, respectively), MA Open LIM small mesh and large mesh scallop otter trawl (Rows 13 and 14, respectively), and MA small mesh and large mesh twin otter trawl (Rows 15 and 16, respectively). Existing trawl fleets with a single specific mesh size (representing a re-labeled fleet) include: NE small mesh twin otter trawl (Row 17), MA small mesh shrimp trawl (Row 22), NE small mesh shrimp trawl (Row 23), NE AA small mesh mid-water trawl (Row 48), MA OPEN small mesh mid-water trawl (Row 49), NE OPEN small mesh mid-water trawl (Row 50), MA small mesh beam trawl (Row 63), and NE large mesh beam trawl (Row 64). The aforementioned fleets are indicated with a “+” in Tables 2 and 3. In the 2018 analyses, some gear types have been re-labeled for clarity (e.g., Longline to Longline, bottom) but do not represent new or revised fleets.

Fleets in the 2017 analysis with either no activity or with less than 3 trips per quarter in all quarters were excluded from this analysis; these are: MA AA LIM scallop trawl and MA large mesh Ruhle otter trawl. 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 13 unique fleets (MA OPEN LIM small mesh scallop trawl [Row 13], MA large mesh twin otter trawl [Row 16], NE small mesh twin otter trawl [Row 17], MA large mesh other otter trawl [Row 26], MA floating trap [Row 28], MA and NE Danish seine [Rows 46 and 47], MA and NE other pots and traps [Rows 51 and 52], NE hagfish pots and traps [Row 57], NE weir [Row 60], NE large mesh beam trawl [Row 64], and NE urchin dredge [Row 66] in Tables 2 and 3) were combined into a single aggregated fleet labeled “Confidential fleets” for reporting purposes in Tables 4 and 5. Hence, the fleet row numbers within Tables 2, 3,

6A, and 6B 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 68 fleets examined, 30 fleets had little or no observer data: 12 fleets had sparse observer data across all quarters, while 18 fleets were missing observer data in all quarterly cells. The fleets with no observer coverage include trawl, purse seine, Danish seine, and pot and trap fleets, several of which have little industry activity. No discard estimation was performed for the 18 fleets with no observer coverage, and they were designated as fleets in need of pilot coverage (Tables 2 and 3; Appendix Table 1). The 12 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 38 remaining fleets (designated as nonpilot fleets; Rows 1, 2, 4-9, 12, 17, 24, 30-32, 34, 35, 37-45, 48-50, 53-56, 58, 59, 61, 62, 67, and 68), estimates of discards and their associated variance were derived and used to determine the sample sizes needed for a 30% CV. Of the 38 fleets, there were 19 fleets (Rows 1, 2, 4, 9, 12, 17, 24, 32, 38, 39, 44, 49, 53, 55, 56, 58, 61, 67, and 68) where the simple imputation was applied (Tables 2 and 3).

Thus, for the discard estimation and precision analysis, 18 fleets had no discard estimation, and 50 fleets had discards estimated. For the sample size analysis, 38 fleets had sample sizes derived from the discard variances, and 30 fleets had sample sizes based upon pilot coverage.

During the July 2016 through June 2017 period, 3,238 trips (9,149 days) were observed. When these trips were stratified, some trips were partitioned between strata, resulting in 3,445 trips (9,654 days; Tables 2 and 3) in the OB data set.

In terms of number of trips, the percentages of observed trips varied by fleet and calendar quarter. For the 50 fleets with some observer coverage, the annual percentage of observed trips by fleet ranged between 0.07% (NE lobster pot, Row 59; Table 2) to 100% (NE small mesh AA mid-water trawl fleet, Row 48; Table 2). Coverage percentages at or near 100% are rare; however, this fleet is composed of the exempt fisheries trips for which 100% monitoring was required¹⁵. All trips within this fleet had an observer aboard; however, some hauls were not observed and discard estimation was necessary. For the 38 nonpilot fleets (excluding the exempted fleet [Row 48]), the percentage of observed trips ranged between 0.07% (NE lobster pot, Row 59) and 50% (MA small mesh AA GEN scallop otter trawl fleet, Row 9). Over all fleets, the percentage of observed trips was 4.0% (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 37 nonconfidential, nonpilot fleets, the percentage of observer coverage ranged between 9% and 100% with an average of 75% (Table 4). Thirty of the 37 fleets had a percentage greater than or equal to 52% with an average of 87%. This finding indicates that the majority of kept weight within the fleet was associated with statistical areas and quarters with observer coverage. Additionally, these 30 fleets composed 77% 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 68 uniquely identified fleets account for almost all of the total VTR landings.

¹⁵ For further information see the [Federal Register RIN 0648-AY47](#).

Annual VTR landings for all fleets and estimated discards (live weight, in pounds) with associated precision (CV and SE) for 46 individual fleets (Rows 1-12, 14, 15, 20-22, 24, 30-35, 37-45, 48-50, 53-56, 58, 59, 61-63, 65, 67, and 68) 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; Figs. 1A and 1B). There were 9 nonconfidential, nonpilot fleets (Rows 18, 19, 23, 25, 27, 29, 36, 63, and 65) as well as the “Other minor fleets” that have no discard estimation because of the lack of OB 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.

Based upon this analysis, 69,947 mt (154,206,116 lb; live weight) of discards for the 14 species groups occurred during the July 2016 through June 2017 period (Table 5C). The majority (66%) of the discards comprises 2 species groups: skates (*Rajidae*; 40%) and sea scallop (*Placopecten magellanicus*; 26%); 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; 1A) and individual species (Table 5B; Fig. 1B). One species group (SAL) had zero discards (this species group is not presented in Fig. 1A and Appendix Table 3A); in 2 species groups (SCOQ and HERR) discards were less than 1% of total catch; in 4 species groups (TIL, SBM, SCAL, and BLUE) percentages of discards ranged between 1% and 10% of total catch; in 2 species groups (GFL and GFS) discards ranged between 11% and 25% of total catch; and in 5 species groups (FSB, RCRA, DOG, MONK, and SKATE) discards were greater than 26% of total catch. The species groups with the highest percentage of total discards relative to total catch were: skates (70%), monkfish (*Lophius americanus*; 39%); spiny dogfish (*Squalus acanthias*; 36%; Fig. 1A). For individual species (Table 5B; Fig. 1B), most notable are the high percentages of discards to total catch for Atlantic wolffish (*Anarhichas lupus*; >99%), ocean pout (*Zoarces americanus*; >99%), windowpane flounder (*Scophthalmus aquosus*; >99%), and Atlantic halibut (*Hippoglossus hippoglossus*; 45%). Atlantic halibut have a 1 fish trip limit and no possession is allowed for the other three. Offshore hake (*Merluccius albidus*; 89%) and red hake (*Urophycis chuss*; 59%) had a high percentage of discards to total catch for economic reasons (“No Market”). The NE AA LIM scallop dredge fleet (Row 42; 20%) and NE large mesh otter trawl fleet (Row 8; 18%) 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 (78%) of discards were attributed to “No Market.” “Regulation” (size, quota, and other), “Poor Quality,” and “Other” contributed 16%, 2%, and 4%, respectively (Appendix Table 3A).

The percentages of discards to total catch by fleet were also summarized for the 38 nonpilot fleets (Fig. 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 species not federally managed have been aggregated into a species group labeled “Non-SBRM.” The percentages of discards to total catch varied by fleet (Fig. 2). There were 3 fleets (Rows 37, 48, and 58) where discards were less than 1% of the total catch in the fleet; 5 fleets (Rows 4, 31, 49, 67, and 68) where the percentages of discards ranged between 1% and 10%; 14 fleets (Rows 1, 2, 7, 30, 32, 34, 35, 38-40, 43-45, and 55) where the percentages of discards

ranged between 11% and 25% of total catch; 11 fleets (Rows 5, 8, 12, 17, 41, 42, 53, 54, 58, 61, and 62) where the percentages of discards ranged between 26% and 50% of the total catch; and 5 fleets (Rows 6, 9, 24, 56 and 59) where discards were greater than 50% of the total catch (Fig. 2).

The number of species groups discarded within a fleet also varied among fleets. In the majority of fleets (27 of the 38 fleets), discards comprised 2 or 3 species groups. For 8 of these fleets (Rows 1, 9, 38, 39, 48, 50, 53, and 67), the “Other SBRM” species group comprised the majority of the discards. This finding indicates that the majority of discards for those 8 fleets were filtered out via the importance filter. There were 11 fleets (Rows 4, 17, 24, 30, 37, 42, 49, 55, 56, 58, and 59) for which the “Non-SBRM” species group comprised the plurality of the discards. There were another 6 fleets where 2 of the 3 discarded species groups were “Other SBRM” and “Non-SBRM,” and the third represented the plurality of the discards: Rows 2 and 34 (DOG; 68% and 44% respectively), Row 32 (skate; 80%), Row 54 (FSB; 98%) and Rows 61 and 62 (RCRAB, 100% and 99% respectively; Fig. 2). There was another fleet where 2 of the 3 discarded species groups comprised the majority of discards (Row 31, DOG and “Non-SBRM” each had 43% of discards). The remaining fleets (11 of the 38 fleets) had between 4 and 9 discarded species groups. The skate species group comprised the majority of the discards in 3 of these fleets (Rows 6, 8, and 35) while the “Non-SBRM” group comprised the plurality of the discards in 6 fleets (Rows 5, 7, 43-45, and 68), and there were 2 fleets (Rows 40 and 41) for which SCAL comprised the majority of discards. The dominant “Non-SBRM” species in the MA small mesh shrimp twin trawl (Row 24; Fig. 2) were southern Kingfish (*Menticirrhus americanus*), Atlantic croaker (*Micropogonias undulatus*), and weakfish (*Cynoscion regalis*). The dominant “Non-SBRM” species in the scallop dredge fleets (Rows 38-45; Fig. 2) were sand dollar (Clypeasteroidea), starfish (Asteroidea), horseshoe crab (Limulidae), sponge (Porifera), and fish, not known. “Fish, not known” was the dominant “Non-SBRM” species in the NE purse seine fleet and the MA small mesh mid-water trawl fleets (Rows 37 and 49, respectively; Fig. 2). Whelks (Buccinidae) were the dominant “Non-SBRM” species in the MA and NE conch pot fleets (Rows 55 and 56, respectively; Fig. 2) while American lobster (*Homarus americanus*) and Jonah crab (*Cancer borealis*) were the dominant “Non-SBRM” species in the MA and NE lobster pot fleets (Rows 58 and 59, respectively; Fig. 2). Mussels (Mytilidae) were the dominant “Non-SBRM” species in the NE ocean quahog/surfclam dredge (Row 68, Fig. 2).

The precision of the discard estimates varied by species group and fleet (Table 5A). Of the 14 species groups, 11 species groups (BLUE, FSB, GFL, MONK, RCRAB, SCAL, SKATE, GFS, DOG, SBM, and TIL) had an overall CV that was less than 30%, 2 species groups (HERR and 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; Fig. 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 trips and sea days needed for each species group and fleet, as well as the number of pilot coverage trips and sea days, minimum pilot coverage trips and sea days, and the trips and sea days needed for the fleet (referred to as “2018 Trips Needed” and “2018 Sea Days Needed”, respectively), are summarized in Tables 6A (trips) and 6B (sea days), respectively. For the 68 fleets 5,948 trips and 15,599 days are needed.

As mentioned, 30 fleets had insufficient observer information to estimate discards, and the sea days for these fleets were based on pilot coverage. For fleets with the pilot coverage

designation, 782 days (5% of 15,599 days; Table 6B) were needed. There are 17 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, 9, 12, 17, 37-39, 48-50, 53, 55, 56, 58, 59, and 67; Table 6B). For 5 fleets (Rows 42, 44, 54, 61, and 62) the sea days derived from the discard variance were less than the minimum pilot coverage, hence minimum pilot coverage days were used. The 22 fleets with minimum pilot coverage were associated with 715 sea days (5% of 15,599 days; Table 6B). The sea days needed for the remaining 16 fleets (14,102 days, representing 90% of the total sea days needed) were derived by using the variance of the discard estimate (Tables 6B). Of the 15,599 days, 6,059 days (39%) were associated with 1 fleet (NE large mesh otter trawl [Row 8]; Table 6B) because of high variability of red deepsea crab discards among trips within this fleet.

The sample size (in terms of number of sea days, number of trips, and percentage of trips based on the July 2016 through June 2017 VTR trips) needed to achieve a 30% CV of the discard estimate in 21 fleets is given in Table 7. The relationship between sample size and precision, over a range of sample sizes, is shown in Fig. 3 for species groups and fleets.

DISCUSSION

A broad stratification was used to support 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, 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.

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.

These analyses used master data and are predicated upon accurately reported and audited data. After these analyses were completed, some of the VTR data used were found to be incorrect, including the data elements used for the fleet stratification. While it is possible to remove the “erroneous” fleets and the associated sea days, the misaligned trips cannot be realigned without database corrections and completely rerunning the analyses. A rerun with corrected data may result in a change in the number of fleets and the number of sea days needed, but is not expected to create major changes in the sea days needed. Examples of such fleets include the MA small mesh scallop trawl fleets (Rows 9, 11, and 13). In these fleets, some vessels reported the wrong gear used (reported scallop trawl [VTR gear code ‘OTC’] when a scallop dredge [VTR gear code “DRS”] or a shrimp trawl [VTR gear code “OTS”]) was used. Some vessels accurately reported gear and mesh size; however, the small mesh used was below the regulated mesh size for the fishery. These types of errors can be identified using enhanced database audits (including data leveraging between data collection systems) coupled with targeted outreach and education on the importance of accurate reporting. The identification of other “erroneous” fleets in this analysis may occur. The number of fleets to be monitored and the number of sea days needed may be reduced in the sea day allocation process due to the removal of “erroneous” fleets.

In 2014, the northern shrimp fishery was closed and remained closed through 2017. In years past, the VTR trips associated with NE shrimp trawl fleet (Row 23; 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 in the shrimp trawl. An additional data element within the VTR database is needed to distinguish shrimp trawl 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 quantitatively define unique fleets as those with at least 3 VTR trips in a fleet and calendar quarter allows the minimum number of trips in a fleet for analytical purposes to be decoupled from the minimum number of trips in a fleet for observer sea day deployment purposes. This improves the transparency of the SBRM process (including the need for enhanced data auditing, consistency between data collection systems, minimum number of trips needed for a unique fleet for discard estimation, sample size analyses, and subsequent sea day allocations)

and supports future implementation of observer deployment systems (e.g., a PTNS-like system) across all fleets. This refinement has resulted in additional fleets, some of which have few trips and may not be detectable by the observer program at this time. The subsequent sea day allocation process allows for consideration of observer program limitations (e.g., detection, deployment, or database limitations). Hence, the number of fleets to be monitored and the number of sea days needed may be reduced in the sea day allocation process.

There are 2 fleets with high sea day requirements (>2,000 sea days). The high monitoring coverage for MA small mesh otter trawl fleet (Row 5) and NE large mesh otter trawl fleet (Row 8; Table 6B) 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, Wigley and Tholke 2017), 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 and/or reached their incidental bycatch limit, thus the red deepsea crabs must be discarded.

If the next largest value of sea days is used in the NE large mesh otter trawl fleet (i.e., 565 days rather than 6,059 days for Row 8; Table 6B), then the total number of sea days needed across the 68 fleets would be 10,105 days (a 35% decrease from the 15,599 days). When the next largest value is used¹⁶, the expected achieved precision of red deepsea crab discards in Row 8 would be about 126% CV (Fig. 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. Observers classify the discards by fish disposition based upon the NEFOP sampling protocol (NEFSC, 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.

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.

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 defined in the SBRM Omnibus Amendment (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.

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¹⁶ This scenario illustrates the relationship between precision and sample size for this species group and fleet. Please see the 2018 SBRM Annual Discard Report with Observer Sea Day Allocation document for the number of sea days that are allocated to each fleet based on the 15 SBRM species groups (14 fish/invertebrate species groups and 1 sea turtle species) and the available funding.

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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.

ATLANTIC SALMON (SAL)	<i>Salmo salar</i>
BLUEFISH (BLUE)	<i>Pomatomus saltatrix</i>
FLUKE - SCUP - BLACK SEA BASS (FSB)	
Black sea bass	<i>Centropristis striata</i>
Fluke	<i>Paralichthys dentatus</i>
Scup	<i>Stenotomus chrysops</i>
HERRING, ATLANTIC (HERR)	<i>Clupea harengus</i>
LARGE MESH GROUND FISH (GFL)	
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>
MONKFISH (MONK)	<i>Lophius americanus</i>
RED DEEPSEA CRAB (RCRAB)	<i>Chaceon quinquedens</i>
SEA SCALLOP (SCAL)	<i>Placopecten magellanicus</i>
SKATE COMPLEX¹⁷ (SKATE)	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>
SMALL MESH GROUND FISH (GFS)	
Offshore hake	<i>Merluccius albidus</i>
Red hake	<i>Urophycis chuss</i>
Silver hake	<i>Merluccius bilinearis</i>
SPINY DOGFISH (DOG)	<i>Squalus acanthias</i>
SQUID¹⁸ - BUTTERFISH - MACKEREL (SBM)	
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>
SURFLAM - OCEAN QUAHOG (SCOQ)¹⁹	
Surfclam	<i>Spisula solidissima</i>
Ocean quahog	<i>Arctica islandica</i>
TILEFISH²⁰ (TILE)	
Blueline tilefish	<i>Caulolatilus microps</i>
Golden tilefish	<i>Lopholatilus chamaeleonticeps</i>

¹⁷ Skate complex is composed of 7 species as well as skate, unknown, and little/winter mixed skate. Individual species are not summarized separately.

¹⁸ 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.

¹⁹ In this analysis, surfclams and ocean quahogs compose the species group and are not reported separately.

²⁰ Tilefish, unclassified is included in this species group.

Table 2 Number of observed (OB) and Vessel Trip Report (VTR) trips, by fleet and calendar quarter (Q) based on July 2016 through June 2017 data. "P" indicates fleets with "pilot" designation.

FLEET						OB					VTR					
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
1	Longline, Bottom	OPEN	all	MA	all	2	1	3	3	9	82	67	22	50	221	
2	Longline, Bottom	OPEN	all	NE	all	2	3	2	8	15	955	265	35	211	1,466	
3	Hand Line	OPEN	all	MA	all	1	1	1	6	9	1,627	835	119	928	3,509	P
4	Hand Line	OPEN	all	NE	all	7	5	.	8	20	1,455	749	19	499	2,722	
5	Otter Trawl	OPEN	all	MA	sm	145	122	96	154	517	1,347	850	493	1,023	3,713	
6	Otter Trawl	OPEN	all	MA	lg	82	53	55	53	243	1,365	685	588	964	3,602	
7	Otter Trawl	OPEN	all	NE	sm	139	60	33	218	450	2,134	1,044	426	1,224	4,828	
8	Otter Trawl	OPEN	all	NE	lg	69	41	73	73	256	1,359	1,082	1,170	1,441	5,052	
9+	Otter Trawl, Scallop	AA	GEN	MA	sm	.	.	.	4	4	.	.	1	7	8	
10+	Otter Trawl, Scallop	AA	GEN	MA	lg	.	.	.	2	2	6	.	.	46	52	P
11+	Otter Trawl, Scallop	OPEN	GEN	MA	sm	.	.	.	2	2	.	1	3	3	7	P
12+	Otter Trawl, Scallop	OPEN	GEN	MA	lg	3	1	1	4	9	202	38	6	30	276	
13+	Otter Trawl, Scallop	OPEN	LIM	MA	sm	.	.	.	.	.	.	4	.	3	7	P
14+	Otter Trawl, Scallop	OPEN	LIM	MA	lg	1	.	.	.	1	3	5	2	.	10	P
15+	Otter Trawl, Twin	OPEN	all	MA	sm	2	1	2	1	6	22	9	11	7	49	P
16+	Otter Trawl, Twin	OPEN	all	MA	lg	2	.	.	.	2	40	42	36	14	132	P
17+	Otter Trawl, Twin	OPEN	all	NE	sm	.	3	2	.	5	4	9	8	.	21	
18+	Otter Trawl, Ruhle	OPEN	all	MA	sm	.	.	.	.	.	1	6	2	6	15	P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	.	.	.	.	.	.	28	15	3	46	P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1	.	.	.	1	5	2	.	2	9	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	2	.	1	.	3	40	23	23	25	111	P
22+	Otter Trawl, Shrimp	OPEN	all	MA	sm	.	.	.	1	1	.	9	5	1	15	P
23+	Otter Trawl, Shrimp	OPEN	all	NE	sm	.	.	.	.	.	13	5	34	57	109	P
24+	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	.	8	2	.	10	34	101	48	2	185	
25+	Otter Trawl, Other	OPEN	all	MA	sm	.	.	.	.	.	.	3	6	3	12	P
26+	Otter Trawl, Other	OPEN	all	MA	lg	.	.	.	.	.	.	5	5	.	10	P
27+	Otter Trawl, Other	OPEN	all	NE	sm	.	.	.	.	.	28	7	2	26	63	P
28	Floating Trap	OPEN	all	MA	all	.	.	.	.	.	46	4	.	32	82	P
29	Floating Trap	OPEN	all	NE	all	.	.	.	.	.	17	.	1	23	41	P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	61	68	117	50	296	459	563	651	340	2,013	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	24	97	75	39	235	276	915	584	456	2,231	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	.	46	20	91	157	24	394	255	782	1,455	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	1	.	.	1	2	3	.	.	3	6	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	84	28	7	36	155	1,598	413	90	454	2,555	

See text for fleet abbreviations; "+" indicates new or revised fleets in 2018.

Table 2, continued. Number of observed (OB) and Vessel Trip Report (VTR) trips, by fleet and calendar quarter (Q) based on July 2016 through June 2017 data. "P" indicates fleets with "pilot" designation.

FLEET						OB					VTR					
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	63	48	18	50	179	1,185	687	318	914	3,104	
36	Purse Seine	OPEN	all	MA	all	.	.	.	.	.	5	.	.	185	190	P
37	Purse Seine	OPEN	all	NE	all	3	4	.	3	10	137	36	.	50	223	
38	Dredge, Scallop	AA	GEN	MA	all	2	1	10	28	41	178	55	82	485	800	
39	Dredge, Scallop	AA	GEN	NE	all	1	.	11	54	66	9	3	69	739	820	
40	Dredge, Scallop	AA	LIM	MA	all	18	14	14	36	82	206	166	107	278	757	
41	Dredge, Scallop	AA	LIM	NE	all	22	28	12	73	135	165	158	88	508	919	
42	Dredge, Scallop	OPEN	GEN	MA	all	42	25	27	21	115	1,085	517	510	424	2,536	
43	Dredge, Scallop	OPEN	GEN	NE	all	33	16	18	14	81	607	622	1,179	412	2,820	
44	Dredge, Scallop	OPEN	LIM	MA	all	19	2	4	11	36	194	63	49	151	457	
45	Dredge, Scallop	OPEN	LIM	NE	all	40	5	32	11	88	357	132	240	213	942	
46	Danish Seine	OPEN	all	MA	all	.	.	.	.	.	2	.	.	8	10	P
47+	Danish Seine	OPEN	all	NE	all	.	.	.	.	.	3	.	.	.	3	P
48+	Trawl, Mid-water Paired&Single	AA	all	NE	sm	5	9	.	4	18	5	10	.	3	18	
49+	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	.	.	3	.	3	.	1	10	.	11	
50+	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	7	16	13	3	39	30	114	68	41	253	
51+	Pots and Traps, Other	OPEN	all	MA	all	.	.	.	.	.	.	15	3	.	18	P
52+	Pots and Traps, Other	OPEN	all	NE	all	.	.	.	.	.	19	3	.	21	43	P
53	Pots and Traps, Fish	OPEN	all	MA	all	.	2	3	6	11	265	177	75	287	804	
54	Pots and Traps, Fish	OPEN	all	NE	all	10	3	.	4	17	472	58	.	178	708	
55	Pots and Traps, Conch	OPEN	all	MA	all	.	11	5	3	19	132	496	17	148	793	
56	Pots and Traps, Conch	OPEN	all	NE	all	3	3	.	3	9	369	479	2	289	1,139	
57	Pots and Traps, Hagfish	OPEN	all	NE	all	1	.	1	.	2	13	2	4	4	23	P
58	Pots and Traps, Lobster	OPEN	all	MA	all	4	3	1	1	9	711	298	123	314	1,446	
59	Pots and Traps, Lobster	OPEN	all	NE	all	5	4	6	5	20	12,567	8,415	1,977	4,709	27,668	
60+	Weir	OPEN	all	NE	all	.	.	.	.	.	.	.	.	12	12	P
61	Pots and Traps, Crab	OPEN	all	MA	all	.	.	2	3	5	14	16	7	56	93	
62	Pots and Traps, Crab	OPEN	all	NE	all	3	6	3	3	15	16	20	17	8	61	
63+	Beam Trawl	OPEN	all	MA	sm	.	.	.	.	.	2	4	.	2	8	P
64+	Beam Trawl	OPEN	all	NE	lg	.	.	.	1	1	20	6	.	5	31	P
65	Dredge, Other	OPEN	all	MA	all	.	.	.	.	.	.	79	134	.	213	P
66+	Dredge, Urchin	OPEN	all	NE	all	.	.	.	.	.	.	.	11	.	11	P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	7	3	6	2	18	649	421	423	620	2,113	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	7	4	3	2	16	663	431	455	581	2,130	
Total						923	745	682	1,095	3,445	33,225	21,647	10,628	20,310	85,810	

See text for fleet abbreviations; "+" indicates new or revised fleets in 2018.

Table 3 Number of observed (OB) and Vessel Trip Report (VTR) sea days, by fleet and calendar quarter (Q) based on July 2016 through June 2017 data. "P" indicates fleets with "pilot" designation.

FLEET						OB					VTR					
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
1	Longline, Bottom	OPEN	all	MA	all	18	12	38	33	101	449	292	211	428	1,380	
2	Longline, Bottom	OPEN	all	NE	all	2	13	3	8	26	974	296	46	247	1,563	
3	Hand Line	OPEN	all	MA	all	3	1	1	6	11	1,769	850	136	965	3,720	P
4	Hand Line	OPEN	all	NE	all	15	5	.	12	32	1,665	787	23	538	3,013	
5	Otter Trawl	OPEN	all	MA	sm	247	321	364	364	1,296	1,819	1,720	1,786	1,727	7,052	
6	Otter Trawl	OPEN	all	MA	lg	120	140	184	124	568	2,031	1,672	2,103	1,785	7,591	
7	Otter Trawl	OPEN	all	NE	sm	318	190	123	544	1,175	4,092	2,470	1,852	2,766	11,180	
8	Otter Trawl	OPEN	all	NE	lg	175	83	216	178	652	3,358	3,218	3,881	3,967	14,424	
9+	Otter Trawl, Scallop	AA	GEN	MA	sm	.	.	.	8	8	.	.	3	16	19	
10+	Otter Trawl, Scallop	AA	GEN	MA	lg	.	.	.	4	4	12	.	.	96	108	P
11+	Otter Trawl, Scallop	OPEN	GEN	MA	sm	.	.	.	4	4	.	3	8	7	18	P
12+	Otter Trawl, Scallop	OPEN	GEN	MA	lg	5	1	1	9	16	425	87	16	63	591	
13+	Otter Trawl, Scallop	OPEN	LIM	MA	sm	.	.	.	.	.	.	18	.	21	39	P
14+	Otter Trawl, Scallop	OPEN	LIM	MA	lg	6	.	.	.	6	18	27	13	.	58	P
15+	Otter Trawl, Twin	OPEN	all	MA	sm	2	11	9	1	23	22	76	96	7	201	P
16+	Otter Trawl, Twin	OPEN	all	MA	lg	2	.	.	.	2	60	50	37	14	161	P
17+	Otter Trawl, Twin	OPEN	all	NE	sm	.	19	11	.	30	28	82	50	.	160	
18+	Otter Trawl, Ruhle	OPEN	all	MA	sm	.	.	.	.	.	8	39	17	37	101	P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	.	.	.	.	.	.	87	40	20	147	P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	7	.	.	.	7	25	15	.	12	52	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	14	.	10	.	24	316	224	205	225	970	P
22+	Otter Trawl, Shrimp	OPEN	all	MA	sm	.	.	.	6	6	.	62	27	4	93	P
23+	Otter Trawl, Shrimp	OPEN	all	NE	sm	.	.	.	.	.	13	5	34	90	142	P
24+	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	.	55	14	.	69	173	656	352	10	1,191	
25+	Otter Trawl, Other	OPEN	all	MA	sm	.	.	.	.	.	.	17	38	12	67	P
26+	Otter Trawl, Other	OPEN	all	MA	lg	.	.	.	.	.	.	22	24	.	46	P
27+	Otter Trawl, Other	OPEN	all	NE	sm	.	.	.	.	.	44	45	15	39	143	P
28	Floating Trap	OPEN	all	MA	all	.	.	.	.	.	46	4	.	32	82	P
29	Floating Trap	OPEN	all	NE	all	.	.	.	.	.	17	.	1	23	41	P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	67	68	120	60	315	470	564	657	342	2,033	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	29	99	77	41	246	314	933	589	461	2,297	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	.	57	30	104	191	24	452	335	876	1,687	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	1	.	.	1	2	3	.	.	5	8	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	91	37	10	45	183	1,969	675	255	646	3,545	

See text for fleet abbreviations; “+” indicates new or revised fleets in 2018.

Table 3, continued. Number of observed (OB) and Vessel Trip Report (VTR) sea days, by fleet and calendar quarter (Q) based on July 2016 through June 2017 data. "P" indicates fleets with "pilot" designation.

FLEET							OB					VTR					
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group		Q3	Q4	Q1	Q2	TOTAL	Q3	Q4	Q1	Q2	TOTAL	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg		77	54	42	109	282	1,435	828	719	1,655	4,637	
36	Purse Seine	OPEN	all	MA	all		.	.	.	.	.	5	.	.	195	200	P
37	Purse Seine	OPEN	all	NE	all		6	8	.	6	20	291	79	.	84	454	
38	Dredge, Scallop	AA	GEN	MA	all		6	3	17	51	77	359	127	167	899	1,552	
39	Dredge, Scallop	AA	GEN	NE	all		3	.	21	111	135	26	9	133	1,452	1,620	
40	Dredge, Scallop	AA	LIM	MA	all		168	127	125	297	717	1,662	1,258	858	2,189	5,967	
41	Dredge, Scallop	AA	LIM	NE	all		217	296	119	622	1,254	1,425	1,650	809	4,130	8,014	
42	Dredge, Scallop	OPEN	GEN	MA	all		77	55	52	35	219	2,141	1,073	1,007	675	4,896	
43	Dredge, Scallop	OPEN	GEN	NE	all		54	31	40	23	148	1,084	997	1,593	639	4,313	
44	Dredge, Scallop	OPEN	LIM	MA	all		186	25	44	108	363	1,837	556	451	1,392	4,236	
45	Dredge, Scallop	OPEN	LIM	NE	all		398	35	273	137	843	3,755	1,168	2,156	2,155	9,234	
46	Danish Seine	OPEN	all	MA	all		.	.	.	.	.	2	.	.	8	10	P
47+	Danish Seine	OPEN	all	NE	all		.	.	.	.	.	3	.	.	.	3	P
48+	Trawl, Mid-water Paired&Single	AA	all	NE	sm		26	33	.	19	78	26	37	.	16	79	
49+	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm		.	.	13	.	13	.	4	52	.	56	
50+	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm		30	55	54	15	154	139	325	197	175	836	
51+	Pots and Traps, Other	OPEN	all	MA	all		.	.	.	.	.	.	15	3	.	18	P
52+	Pots and Traps, Other	OPEN	all	NE	all		.	.	.	.	.	19	13	.	21	53	P
53	Pots and Traps, Fish	OPEN	all	MA	all		.	2	3	8	13	272	182	75	292	821	
54	Pots and Traps, Fish	OPEN	all	NE	all		10	3	.	4	17	481	58	.	178	717	
55	Pots and Traps, Conch	OPEN	all	MA	all		.	11	5	3	19	135	497	17	148	797	
56	Pots and Traps, Conch	OPEN	all	NE	all		3	3	.	3	9	373	483	2	289	1,147	
57	Pots and Traps, Hagfish	OPEN	all	NE	all		6	.	5	.	11	113	15	42	49	219	P
58	Pots and Traps, Lobster	OPEN	all	MA	all		5	4	4	3	16	871	401	173	419	1,864	
59	Pots and Traps, Lobster	OPEN	all	NE	all		5	4	6	7	22	14,997	10,717	3,652	6,385	35,751	
60+	Weir	OPEN	all	NE	all		.	.	.	.	.	.	.	.	12	12	P
61	Pots and Traps, Crab	OPEN	all	MA	all		.	.	8	11	19	33	50	20	87	190	
62	Pots and Traps, Crab	OPEN	all	NE	all		25	46	30	24	125	109	154	118	41	422	
63+	Beam Trawl	OPEN	all	MA	sm		.	.	.	.	.	7	9	.	7	23	P
64+	Beam Trawl	OPEN	all	NE	lg		.	.	.	1	1	29	7	.	7	43	P
65	Dredge, Other	OPEN	all	MA	all		.	.	.	.	.	.	79	134	.	213	P
66+	Dredge, Urchin	OPEN	all	NE	all		.	.	.	.	.	.	.	11	.	11	P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all		20	7	18	6	51	1,160	862	850	1,276	4,148	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all		17	15	11	8	51	956	638	662	872	3,129	
Total							2,461	1,929	2,101	3,163	9,654	53,889	37,739	26,751	41,228	159,608	

See text for fleet abbreviations; "+" indicates new or revised fleets in 2018.

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 observer (OB) 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 2016 through June 2017 data.

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Kept Weight (mt)	Percentage of Kept Weight	Kept Weight with OB coverage (mt)	Percentage of Kept Weight with OB coverage
1	Longline, Bottom	OPEN	all	MA	all	759	0.1	154	20.3
2	Longline, Bottom	OPEN	all	NE	all	2,879	0.5	659	22.9
3	Hand Line	OPEN	all	MA	all	237	<0.1	49	20.6
4	Hand Line	OPEN	all	NE	all	1,104	0.2	670	60.7
5	Otter Trawl	OPEN	all	MA	sm	10,245	1.8	9,409	91.8
6	Otter Trawl	OPEN	all	MA	lg	5,960	1.0	5,642	94.7
7	Otter Trawl	OPEN	all	NE	sm	28,026	4.9	27,275	97.3
8	Otter Trawl	OPEN	all	NE	lg	22,317	3.9	20,730	92.9
9	Otter Trawl, Scallop	AA	GEN	MA	sm	18	<0.1	12	67.9
10	Otter Trawl, Scallop	AA	GEN	MA	lg	124	<0.1	0	0.0
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	28	<0.1	0	0.0
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	594	0.1	435	73.2
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	28	<0.1	0	0.0
15	Otter Trawl, Twin	OPEN	all	MA	sm	476	0.1	0	0.0
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	126	<0.1	0	0.0
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	689	0.1	0	0.0
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	82	<0.1	0	0.0
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1,278	0.2	0	0.0
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	56	<0.1	0	0.0
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	99	<0.1	0	0.0
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	1,127	0.2	722	64.1
25	Otter Trawl, Other	OPEN	all	MA	sm	57	<0.1	0	0.0
27	Otter Trawl, Other	OPEN	all	NE	sm	150	<0.1	0	0.0
29	Floating Trap	OPEN	all	NE	all	10	<0.1	0	0.0
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1,838	0.3	1,759	95.7
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	3,164	0.6	3,076	97.2
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2,364	0.4	2,235	94.5
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	10	<0.1	0	0.0
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	4,013	0.7	3,897	97.1
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	7,927	1.4	7,764	97.9
36	Purse Seine	OPEN	all	MA	all	11,005	1.9	0	0.0
37	Purse Seine	OPEN	all	NE	all	24,450	4.3	23,788	97.3
38	Dredge, Scallop	AA	GEN	MA	all	2,150	0.4	1,384	64.4
39	Dredge, Scallop	AA	GEN	NE	all	2,021	0.4	1,917	94.8
40	Dredge, Scallop	AA	LIM	MA	all	31,497	5.5	31,326	99.5
41	Dredge, Scallop	AA	LIM	NE	all	50,112	8.8	49,932	99.6
42	Dredge, Scallop	OPEN	GEN	MA	all	5,475	1.0	5,160	94.2
43	Dredge, Scallop	OPEN	GEN	NE	all	3,444	0.6	2,812	81.7
44	Dredge, Scallop	OPEN	LIM	MA	all	25,589	4.5	21,931	85.7
45	Dredge, Scallop	OPEN	LIM	NE	all	57,492	10.1	51,145	89.0
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	3,017	0.5	3,017	100.0
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	2,260	0.4	1,835	81.2

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 observer (OB) 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 2016 through June 2017 data.

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Kept Weight (mt)	Percentage of Kept Weight	Kept Weight with OB coverage (mt)	Percentage of Kept Weight with OB coverage
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	30,104	5.3	28,386	94.3
53	Pots and Traps, Fish	OPEN	all	MA	all	205	<0.1	43	21.0
54	Pots and Traps, Fish	OPEN	all	NE	all	85	<0.1	76	89.5
55	Pots and Traps, Conch	OPEN	all	MA	all	351	0.1	288	82.0
56	Pots and Traps, Conch	OPEN	all	NE	all	277	<0.1	227	81.9
58	Pots and Traps, Lobster	OPEN	all	MA	all	658	0.1	120	18.2
59	Pots and Traps, Lobster	OPEN	all	NE	all	13,785	2.4	3,107	22.5
61	Pots and Traps, Crab	OPEN	all	MA	all	188	<0.1	46	24.8
62	Pots and Traps, Crab	OPEN	all	NE	all	1,374	0.2	1,125	81.9
63	Beam Trawl	OPEN	all	MA	sm	15	<0.1	0	0.0
65	Dredge, Other	OPEN	all	MA	all	60	<0.1	0	0.0
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	109,514	19.2	57,205	52.2
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	98,239	17.2	42,238	43.0
Confidential fleets						1,735	0.3	155	8.9
Other minor fleets						329	0.1	0	0.0
Total						571,216	100.0	411,749	72.1

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0	0			
	Other minor fleets					0	0				
	TOTAL					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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	419	0	419	0.738	309	
2	Longline, Bottom	OPEN	all	NE	all	100	100	0			
3	Hand Line	OPEN	all	MA	all	134,839	134,839	0			P
4	Hand Line	OPEN	all	NE	all	49,179	49,179	0			
5	Otter Trawl	OPEN	all	MA	sm	136,519	113,200	23,319	0.496	11,559	
6	Otter Trawl	OPEN	all	MA	lg	72,199	71,688	511	0.702	359	
7	Otter Trawl	OPEN	all	NE	sm	152,132	113,680	38,452	0.593	22,783	
8	Otter Trawl	OPEN	all	NE	lg	19,663	19,301	362	0.704	255	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	20	20	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	50	50	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	200	200	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	7,936	60	7,876	0.238	1,875	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	1,447	1,447				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	3,423	3,423				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	400	400	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	20	20	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	695	695				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	113,046	575	112,471	0.467	52,501	
25	Otter Trawl, Other	OPEN	all	MA	sm	308	308				P
27	Otter Trawl, Other	OPEN	all	NE	sm	1,124	1,124				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	170,329	168,558	1,771	0.415	736	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	895,083	892,490	2,593	0.328	851	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	18,145	15,629	2,516	0.417	1,048	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	3,130	3,015	115	0.000	0	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	235,682	217,850	17,832	0.473	8,432	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	24,960	17,418	7,542	0.311	2,347	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	26	0	26	0.928	24	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	1,061	0	1,061	0.379	402	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	2,989	2,989	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	21	21	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	1,366	1,366	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	177	177	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						151,036	150,201	835	0.551	460	
Other minor fleets						23	23				
TOTAL						2,197,745	1,980,046	217,699	0.271	59,095	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	222	196	26	1.002	26	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	169,027	164,252	4,775	0.865	4,131	P
4	Hand Line	OPEN	all	NE	all	31,396	31,282	114	0.781	89	
5	Otter Trawl	OPEN	all	MA	sm	7,843,107	4,938,330	2,904,777	0.160	465,167	
6	Otter Trawl	OPEN	all	MA	lg	6,696,547	6,120,294	576,253	0.158	90,866	
7	Otter Trawl	OPEN	all	NE	sm	8,869,558	6,126,477	2,743,081	0.223	610,850	
8	Otter Trawl	OPEN	all	NE	lg	3,811,858	2,147,882	1,663,976	0.262	435,960	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	3,478	0	3,478	0.672	2,337	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	981	654	327	0.988	324	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	1,734	1,707	27	0.087	2	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	17,886	17,478	408	0.637	260	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	7,856	7,856	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	27,857	4,177	23,680	0.486	11,513	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	29,797	29,797				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	31,605	31,605				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	10,250	10,250	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	335	335	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	1,200	1,200	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	9,680	9,680				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	101,341	418	100,923	0.226	22,805	
25	Otter Trawl, Other	OPEN	all	MA	sm	1,388	1,388				P
27	Otter Trawl, Other	OPEN	all	NE	sm	2,560	2,560				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1,679	1,417	262	0.215	56	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	18,182	17,068	1,114	0.314	350	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	21,127	14,653	6,474	0.304	1,967	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	1,863	1,162	701	0.000	0	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	150,151	121,894	28,257	0.250	7,066	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	124,310	27,683	96,627	0.225	21,728	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	9,204	2,176	7,028	0.317	2,226	
39	Dredge, Scallop	AA	GEN	NE	all	878	0	878	0.303	266	
40	Dredge, Scallop	AA	LIM	MA	all	144,737	8,576	136,161	0.194	26,456	
41	Dredge, Scallop	AA	LIM	NE	all	284,782	260	284,522	0.176	49,980	
42	Dredge, Scallop	OPEN	GEN	MA	all	68,728	18,012	50,716	0.172	8,702	
43	Dredge, Scallop	OPEN	GEN	NE	all	32,388	75	32,313	0.327	10,576	
44	Dredge, Scallop	OPEN	LIM	MA	all	84,760	10,687	74,073	0.308	22,837	
45	Dredge, Scallop	OPEN	LIM	NE	all	284,933	483	284,450	0.440	125,219	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	5,100	5,100	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	475,584	329,667	145,917	0.256	37,336	
54	Pots and Traps, Fish	OPEN	all	NE	all	341,903	175,645	166,258	0.179	29,720	
55	Pots and Traps, Conch	OPEN	all	MA	all	6,323	6,231	92	0.899	83	
56	Pots and Traps, Conch	OPEN	all	NE	all	1,507	1,065	442	0.599	265	
58	Pots and Traps, Lobster	OPEN	all	MA	all	166,722	97,152	69,570	1.265	88,030	
59	Pots and Traps, Lobster	OPEN	all	NE	all	43,159	36,182	6,977	2.233	15,583	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	11,526	101	11,425	0.573	6,548	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	4,121	0	4,121	0.977	4,026	
Confidential fleets						99,684	75,608	24,076	0.309	7,437	
Other minor fleets						51,598	51,598				
TOTAL						30,104,613	20,650,313	9,454,300	0.096	904,993	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	781	781	0			
5	Otter Trawl	OPEN	all	MA	sm	135,316	129,809	5,507	0.393	2,163	
6	Otter Trawl	OPEN	all	MA	lg	5,420	3,390	2,030	1.317	2,674	
7	Otter Trawl	OPEN	all	NE	sm	7,465,696	7,425,218	40,478	0.488	19,764	
8	Otter Trawl	OPEN	all	NE	lg	23,182	15,235	7,947	0.393	3,120	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,063,000	1,063,000				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	5,600	0	5,600	0.241	1,351	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	13,283	13,283				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	545	545				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	199	197	2	1.044	2	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	289	279	10	0.977	10	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	412	200	212	0.741	157	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	0	0	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	49,967,894	49,967,871	23	0.465	10	
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	7	0	7	0.948	6	
45	Dredge, Scallop	OPEN	LIM	NE	all	69	0	69	0.596	41	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	6,594,395	6,589,373	5,022	0.375	1,885	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	1,299,224	1,299,010	214	0.953	204	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	53,103,358	53,016,672	86,686	0.987	85,560	
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						1,000	1,000	0			
Other minor fleets						0	0				
TOTAL						119,679,671	119,525,863	153,808	0.572	87,966	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	1,495	24	1,471	0.342	502	
2	Longline, Bottom	OPEN	all	NE	all	265,483	174,708	90,775	0.593	53,841	
3	Hand Line	OPEN	all	MA	all	3,441	2,430	1,011	1.244	1,257	P
4	Hand Line	OPEN	all	NE	all	157,636	151,151	6,485	0.598	3,878	
5	Otter Trawl	OPEN	all	MA	sm	236,831	4,118	232,713	0.165	38,430	
6	Otter Trawl	OPEN	all	MA	lg	414,374	153,215	261,159	0.131	34,246	
7	Otter Trawl	OPEN	all	NE	sm	1,115,820	1,479	1,114,341	0.251	279,939	
8	Otter Trawl	OPEN	all	NE	lg	30,446,866	28,233,262	2,213,604	0.146	322,832	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	156	0	156	0.558	87	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	172	0	172	0.233	40	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	36	0	36	0.029	1	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	5,624	0	5,624	0.716	4,029	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	855	0	855	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	392	0	392	0.396	155	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	225,003	168,600	56,403	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	3,924,192	2,692,512	1,231,680	0.041	50,235	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	1,098	0	1,098	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	1,015	0	1,015	0.473	480	
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	54	50	4	0.784	3	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	1,665	241	1,424	0.231	329	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	997	463	534	0.413	221	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	1,601,152	1,503,706	97,446	0.414	40,304	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	68,863	42,804	26,059	0.310	8,090	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	5,326	0	5,326	0.398	2,122	
39	Dredge, Scallop	AA	GEN	NE	all	14,489	0	14,489	0.253	3,666	
40	Dredge, Scallop	AA	LIM	MA	all	26,681	0	26,681	0.297	7,914	
41	Dredge, Scallop	AA	LIM	NE	all	278,262	279	277,983	0.163	45,371	
42	Dredge, Scallop	OPEN	GEN	MA	all	22,324	35	22,289	0.166	3,695	
43	Dredge, Scallop	OPEN	GEN	NE	all	90,989	143	90,846	0.174	15,778	
44	Dredge, Scallop	OPEN	LIM	MA	all	25,536	15	25,521	0.389	9,925	
45	Dredge, Scallop	OPEN	LIM	NE	all	300,967	1,551	299,416	0.252	75,562	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	28,086	26,718	1,368	0.365	500	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	12	12	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	26,845	24,982	1,863	0.961	1,790	
53	Pots and Traps, Fish	OPEN	all	MA	all	123	123	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	73	73	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	15	15	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	3,288	237	3,051	1.611	4,914	
59	Pots and Traps, Lobster	OPEN	all	NE	all	59,546	1,209	58,337	0.915	53,354	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	67	0	67	0.753	51	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	1,489	0	1,489	0.697	1,038	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	2,768	0	2,768	0.457	1,266	
Confidential fleets						3,289	1,549	1,740	0.391	680	
Other minor fleets						0	0				
TOTAL						39,363,394	33,185,704	6,177,690	0.073	451,075	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	2,670	226	2,444	0.607	1,484	
2	Longline, Bottom	OPEN	all	NE	all	133	133	0			
3	Hand Line	OPEN	all	MA	all	16	16	0			P
4	Hand Line	OPEN	all	NE	all	273	273	0			
5	Otter Trawl	OPEN	all	MA	sm	329,651	80,270	249,380	0.239	59,509	
6	Otter Trawl	OPEN	all	MA	lg	1,014,324	244,197	770,127	0.324	249,663	
7	Otter Trawl	OPEN	all	NE	sm	334,677	168,597	166,079	0.277	45,960	
8	Otter Trawl	OPEN	all	NE	lg	11,286,291	9,618,495	1,667,796	0.210	349,639	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	3,691	0	3,691	0.689	2,542	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	3,427	111	3,316	0.265	878	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	628	116	511	0.053	27	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	15,512	852	14,659	0.484	7,099	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	3,194	145	3,049	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	5,552	1,527	4,025	0.050	202	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	1,295	1,295				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,733	1,733				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	160	116	44	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	86,407	82,102	4,305	0.224	963	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	2,895	0	2,895	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	60	60	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	584	584				P
27	Otter Trawl, Other	OPEN	all	NE	sm	787	787				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	15,141	15,141	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	7,482	7,056	427	0.759	324	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2,562,616	2,525,815	36,801	0.179	6,600	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	4,576	4,576	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	207,598	199,942	7,656	0.274	2,098	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	4,498,631	4,197,456	301,175	0.184	55,562	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	26,228	4,126	22,103	0.239	5,274	
39	Dredge, Scallop	AA	GEN	NE	all	72,112	2,820	69,293	0.169	11,721	
40	Dredge, Scallop	AA	LIM	MA	all	826,411	22,073	804,338	0.221	177,542	
41	Dredge, Scallop	AA	LIM	NE	all	3,037,829	125,593	2,912,236	0.162	473,175	
42	Dredge, Scallop	OPEN	GEN	MA	all	205,181	51,712	153,469	0.106	16,341	
43	Dredge, Scallop	OPEN	GEN	NE	all	244,309	34,839	209,471	0.281	58,803	
44	Dredge, Scallop	OPEN	LIM	MA	all	1,043,062	34,335	1,008,727	0.106	106,697	
45	Dredge, Scallop	OPEN	LIM	NE	all	2,833,905	265,411	2,568,494	0.149	381,901	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	91	91	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	15	15	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	648	31	617	1.411	870	
59	Pots and Traps, Lobster	OPEN	all	NE	all	135	135	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	54,440	6,366	48,074	0.621	29,843	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	196,363	11,155	185,208	0.981	181,711	
	Confidential fleets					26,849	4,792	22,057	0.481	10,620	
	Other minor fleets					802	802				
	TOTAL					28,958,384	17,715,918	11,242,466	0.071	802,490	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 quinque*)

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	53	0	53	0.534	28	
2	Longline, Bottom	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	40,938	0	40,938	0.509	20,856	
6	Otter Trawl	OPEN	all	MA	lg	30,314	0	30,314	0.681	20,634	
7	Otter Trawl	OPEN	all	NE	sm	2,583	1,300	1,283	0.802	1,029	
8	Otter Trawl	OPEN	all	NE	lg	238,190	0	238,190	1.105	263,203	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	15,123	0	15,123	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 quinque*)

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	4	0	4	0.910	4	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	11	0	11	1.056	11	
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	45	0	45	0.982	44	
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	64,803	64,803	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	13,808	1,138	12,670	2.596	32,891	
61	Pots and Traps, Crab	OPEN	all	MA	all	488,739	305,231	183,508	0.398	73,105	
62	Pots and Traps, Crab	OPEN	all	NE	all	4,013,471	2,882,948	1,130,523	0.233	263,871	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						75,990	75,990	0			
Other minor fleets						0	0				
TOTAL						4,984,072	3,331,410	1,652,662	0.231	382,350	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	392	0	392	0.689	270	
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	197,056	12,562	184,494	0.299	55,221	
6	Otter Trawl	OPEN	all	MA	lg	2,074,439	1,945,222	129,216	0.336	43,365	
7	Otter Trawl	OPEN	all	NE	sm	295,489	138,894	156,594	0.395	61,889	
8	Otter Trawl	OPEN	all	NE	lg	139,763	61,778	77,984	0.553	43,137	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	44,345	38,901	5,443	0.522	2,841	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	296,053	263,978	32,075	0.754	24,178	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	60,159	59,401	758	0.087	66	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,325,996	1,286,668	39,328	0.279	10,971	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	39,942	39,942	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	2,291	2,291	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	100	17	84	0.854	71	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	2,774	0	2,774	0.536	1,488	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	5,901,845	4,732,548	1,169,297	0.283	330,882	
39	Dredge, Scallop	AA	GEN	NE	all	4,844,459	4,448,629	395,830	0.141	55,638	
40	Dredge, Scallop	AA	LIM	MA	all	80,674,875	69,191,749	11,483,127	0.159	1,824,157	
41	Dredge, Scallop	AA	LIM	NE	all	130,679,046	110,230,955	20,448,091	0.159	3,253,075	
42	Dredge, Scallop	OPEN	GEN	MA	all	12,936,789	11,960,531	976,258	0.243	237,681	
43	Dredge, Scallop	OPEN	GEN	NE	all	7,691,806	7,506,891	184,914	0.412	76,251	
44	Dredge, Scallop	OPEN	LIM	MA	all	57,942,465	56,581,585	1,360,879	0.273	371,465	
45	Dredge, Scallop	OPEN	LIM	NE	all	130,118,930	126,598,532	3,520,398	0.173	607,294	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	21	0	21	2.046	42	
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	10,413	10,413	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	688,131	543,916	144,215	0.974	140,437	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	2,502,517	2,182,727	319,791	0.791	253,034	
Confidential fleets						994,288	971,561	22,727	0.000	0	
Other minor fleets						421,831	421,831				
TOTAL						439,886,212	399,231,522	40,654,689	0.094	3,832,337	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	183,568	2,754	180,814	0.785	141,954	
2	Longline, Bottom	OPEN	all	NE	all	148,679	7,600	141,079	0.739	104,213	
3	Hand Line	OPEN	all	MA	all	300	144	156	1.461	227	P
4	Hand Line	OPEN	all	NE	all	2,052	2,052	0			
5	Otter Trawl	OPEN	all	MA	sm	4,712,990	477,274	4,235,716	0.187	793,206	
6	Otter Trawl	OPEN	all	MA	lg	11,814,557	3,711,666	8,102,891	0.128	1,039,566	
7	Otter Trawl	OPEN	all	NE	sm	2,416,931	287,126	2,129,804	0.228	484,767	
8	Otter Trawl	OPEN	all	NE	lg	24,368,750	7,261,766	17,106,984	0.159	2,718,173	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	14,410	0	14,410	0.501	7,218	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	25,093	0	25,093	0.585	14,690	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	84,423	500	83,923	0.109	9,175	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	447,796	3,000	444,796	0.342	152,187	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	159,446	12,900	146,546	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	27,718	1,895	25,823	0.474	12,229	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	77,597	0	77,597	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	677,826	25,730	652,096	0.434	283,303	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	4,791	0	4,791	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	92,470	0	92,470	0.371	34,261	
25	Otter Trawl, Other	OPEN	all	MA	sm	908	908				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	11,868	9,571	2,297	0.251	575	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	128,861	63,024	65,837	0.122	8,032	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	3,413,185	2,512,087	901,098	0.117	104,998	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	11,918	11,918	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	678,933	569,851	109,081	0.285	31,125	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	14,372,898	11,846,553	2,526,345	0.094	237,123	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	163,561	1,123	162,437	0.235	38,187	
39	Dredge, Scallop	AA	GEN	NE	all	122,636	0	122,636	0.425	52,175	
40	Dredge, Scallop	AA	LIM	MA	all	2,422,030	5	2,422,025	0.142	343,130	
41	Dredge, Scallop	AA	LIM	NE	all	6,111,834	1,012	6,110,822	0.094	572,381	
42	Dredge, Scallop	OPEN	GEN	MA	all	1,765,261	21,034	1,744,227	0.091	158,582	
43	Dredge, Scallop	OPEN	GEN	NE	all	711,886	0	711,886	0.217	154,201	
44	Dredge, Scallop	OPEN	LIM	MA	all	3,556,409	2,468	3,553,941	0.121	430,638	
45	Dredge, Scallop	OPEN	LIM	NE	all	8,053,975	10	8,053,965	0.135	1,088,418	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	384	341	44	1.397	61	
54	Pots and Traps, Fish	OPEN	all	NE	all	738	738	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	2,929	611	2,318	1.861	4,313	
59	Pots and Traps, Lobster	OPEN	all	NE	all	2,743	0	2,743	3.164	8,678	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	463,315	0	463,315	0.123	56,833	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	873,221	0	873,221	0.193	168,827	
Confidential fleets						155,899	8,909	146,990	0.037	5,499	
Other minor fleets						1,900	1,900				
TOTAL						88,286,686	26,846,467	61,440,218	0.055	3,382,034	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	1,805	1,467	338	1.504	508	
2	Longline, Bottom	OPEN	all	NE	all	98	0	98	0.703	69	
3	Hand Line	OPEN	all	MA	all	2,024	2,024	0			P
4	Hand Line	OPEN	all	NE	all	454	454	0			
5	Otter Trawl	OPEN	all	MA	sm	3,226,508	2,790,756	435,752	0.239	104,215	
6	Otter Trawl	OPEN	all	MA	lg	88,307	61,953	26,354	0.294	7,746	
7	Otter Trawl	OPEN	all	NE	sm	12,693,514	10,180,611	2,512,903	0.237	596,202	
8	Otter Trawl	OPEN	all	NE	lg	1,179,929	450,008	729,921	0.231	168,924	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	8	0	8	0.988	8	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	19	0	19	0.067	1	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	3,774	0	3,774	1.233	4,653	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	499	0	499	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	44,975	3,945	41,030	0.337	13,846	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	54,192	54,192				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	11,350	11,350				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	879	200	679	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	15,500	4,097	11,403	0.176	2,006	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	4,093	0	4,093	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	15,617	15,617				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	626	626				P
27	Otter Trawl, Other	OPEN	all	NE	sm	957	957				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1	1	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	24	24	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	31	5	26	0.507	13	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	75,537	66,207	9,330	0.278	2,594	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	7,820	6,868	952	0.529	504	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	65	2	63	0.525	33	
39	Dredge, Scallop	AA	GEN	NE	all	528	0	528	0.232	122	
40	Dredge, Scallop	AA	LIM	MA	all	7,717	0	7,717	0.378	2,917	
41	Dredge, Scallop	AA	LIM	NE	all	50,456	0	50,456	0.242	12,217	
42	Dredge, Scallop	OPEN	GEN	MA	all	1,826	0	1,826	0.261	476	
43	Dredge, Scallop	OPEN	GEN	NE	all	5,908	0	5,908	0.486	2,870	
44	Dredge, Scallop	OPEN	LIM	MA	all	5,513	0	5,513	0.354	1,950	
45	Dredge, Scallop	OPEN	LIM	NE	all	56,752	0	56,752	0.312	17,699	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	707	688	19	0.376	7	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	3	0	3	0.960	3	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	12,650	10,928	1,722	0.995	1,714	
53	Pots and Traps, Fish	OPEN	all	MA	all	1,101	1,101	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	861	861	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	25	25	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	12	12	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	14,110	13,493	617	2.236	1,379	
59	Pots and Traps, Lobster	OPEN	all	NE	all	11,108	11,108	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	16	0	16	0.631	10	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						42,124	10	42,114	0.592	24,916	
Other minor fleets						0	0				
TOTAL						17,640,020	13,689,590	3,950,430	0.159	629,481	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	415,385	394,085	21,300	0.766	16,318	
2	Longline, Bottom	OPEN	all	NE	all	6,676,475	6,151,755	524,720	1.290	676,914	
3	Hand Line	OPEN	all	MA	all	2,128	2,128	0			P
4	Hand Line	OPEN	all	NE	all	228,764	228,764	0			
5	Otter Trawl	OPEN	all	MA	sm	3,544,993	516,385	3,028,608	0.178	540,384	
6	Otter Trawl	OPEN	all	MA	lg	1,979,026	207,978	1,771,048	0.196	346,869	
7	Otter Trawl	OPEN	all	NE	sm	1,766,095	241,846	1,524,249	0.310	472,026	
8	Otter Trawl	OPEN	all	NE	lg	4,261,256	139,785	4,121,471	0.196	809,306	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	10,987	0	10,987	0.576	6,324	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	11,990	9,000	2,990	0.988	2,955	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,575	800	775	0.796	617	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	1,200	1,200	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	21,865	280	21,585	1.475	31,838	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,092	0	1,092	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	142,928	0	142,928	0.065	9,328	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	318,403	0	318,403	0.403	128,304	
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	2,306,894	2,092,902	213,992	0.361	77,287	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	5,613,074	5,393,365	219,709	0.161	35,317	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	135,812	94,666	41,146	0.152	6,256	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	1,358	70	1,288	0.000	0	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	6,537,208	6,020,385	516,823	0.425	219,566	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	1,372,657	1,301,085	71,572	0.233	16,654	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	9,815	0	9,815	0.661	6,485	
38	Dredge, Scallop	AA	GEN	MA	all	3,339	0	3,339	0.320	1,067	
39	Dredge, Scallop	AA	GEN	NE	all	146	0	146	0.620	91	
40	Dredge, Scallop	AA	LIM	MA	all	48,068	0	48,068	0.331	15,916	
41	Dredge, Scallop	AA	LIM	NE	all	40,953	0	40,953	0.172	7,045	
42	Dredge, Scallop	OPEN	GEN	MA	all	10,299	0	10,299	0.311	3,203	
43	Dredge, Scallop	OPEN	GEN	NE	all	1,167	0	1,167	0.423	494	
44	Dredge, Scallop	OPEN	LIM	MA	all	12,303	0	12,303	0.435	5,348	
45	Dredge, Scallop	OPEN	LIM	NE	all	81,568	0	81,568	0.333	27,173	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	179	0	179	0.316	57	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	6,716	0	6,716	0.938	6,297	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	66,094	22,700	43,394	0.797	34,606	
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	1,021	1,021	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	719	0	719	2.046	1,472	
59	Pots and Traps, Lobster	OPEN	all	NE	all	23,348	0	23,348	0.916	21,393	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	12,956	0	12,956	0.673	8,719	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	16,332	0	16,332	0.556	9,074	
	Confidential fleets					112,497	0	112,497	0.595	66,969	
	Other minor fleets					0	0				
	TOTAL					35,798,686	22,820,200	12,978,486	0.104	1,352,560	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	2,206	2,206	0			
3	Hand Line	OPEN	all	MA	all	1,774	1,487	287	0.156	45	P
4	Hand Line	OPEN	all	NE	all	1,758,080	1,758,080	0			
5	Otter Trawl	OPEN	all	MA	sm	14,164,313	12,644,756	1,519,557	0.275	418,341	
6	Otter Trawl	OPEN	all	MA	lg	393,425	365,176	28,249	0.871	24,601	
7	Otter Trawl	OPEN	all	NE	sm	38,797,763	36,561,362	2,236,401	0.200	448,128	
8	Otter Trawl	OPEN	all	NE	lg	566,794	430,444	136,350	0.574	78,289	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	3	0	3	0.636	2	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	10	10	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	53	0	53	0.102	5	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,983	15	1,968	0.331	651	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	1,308,688	1,026,037	282,651	0.148	41,693	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	186,200	186,200				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	405,834	405,834				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,102	1,000	102	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	351	1	350	0.158	55	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	16,027	3,050	12,977	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	155,675	155,675				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	79,365	1,021	78,344	0.446	34,903	
25	Otter Trawl, Other	OPEN	all	MA	sm	110,282	110,282				P
27	Otter Trawl, Other	OPEN	all	NE	sm	318,705	318,705				P
29	Floating Trap	OPEN	all	NE	all	9,959	9,959				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	23,951	21,587	2,364	0.813	1,922	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	5,374	4,927	447	0.856	383	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	416	357	59	0.448	26	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	36,521	36,007	514	0.375	193	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	626	598	28	0.621	18	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	12	0	12	1.251	15	
38	Dredge, Scallop	AA	GEN	MA	all	112	0	112	0.280	31	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	4,417	50	4,367	0.205	893	
41	Dredge, Scallop	AA	LIM	NE	all	5,258	0	5,258	0.206	1,083	
42	Dredge, Scallop	OPEN	GEN	MA	all	2,349	268	2,081	0.201	418	
43	Dredge, Scallop	OPEN	GEN	NE	all	79	0	79	0.861	68	
44	Dredge, Scallop	OPEN	LIM	MA	all	4,038	452	3,586	0.348	1,247	
45	Dredge, Scallop	OPEN	LIM	NE	all	8,233	71	8,162	0.332	2,709	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	34,812	34,796	16	0.347	6	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	2,690,247	2,688,170	2,077	0.958	1,991	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	13,115,158	13,113,575	1,583	0.691	1,094	
53	Pots and Traps, Fish	OPEN	all	MA	all	1,540	1,540	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	3,790	3,790	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	130	130	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	30,000	30,000				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						975,892	858,812	117,080	0.417	48,852	
Other minor fleets						5,259	5,259				
TOTAL						75,226,804	70,781,689	4,445,115	0.140	622,837	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	1,275	0	1,275	0.467	595	
6	Otter Trawl	OPEN	all	MA	lg	8,490	0	8,490	0.422	3,586	
7	Otter Trawl	OPEN	all	NE	sm	81	0	81	0.748	60	
8	Otter Trawl	OPEN	all	NE	lg	3,431	0	3,431	0.516	1,769	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	317	0	317	0.717	227	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	681	0	681	0.620	423	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	1,069	0	1,069	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	0	0	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	463	0	463	0.707	327	
39	Dredge, Scallop	AA	GEN	NE	all	43	0	43	0.650	28	
40	Dredge, Scallop	AA	LIM	MA	all	6,505	0	6,505	0.291	1,892	
41	Dredge, Scallop	AA	LIM	NE	all	9,501	0	9,501	0.466	4,429	
42	Dredge, Scallop	OPEN	GEN	MA	all	2,746	0	2,746	0.308	847	
43	Dredge, Scallop	OPEN	GEN	NE	all	675	0	675	1.415	955	
44	Dredge, Scallop	OPEN	LIM	MA	all	7,701	0	7,701	0.717	5,525	
45	Dredge, Scallop	OPEN	LIM	NE	all	5,485	0	5,485	0.413	2,267	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	242,512,875	240,795,121	1,717,754	0.592	1,017,169	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	214,424,209	214,383,489	40,720	0.692	28,183	
Confidential fleets						0	0	0			
Other minor fleets						107,935	107,935				
TOTAL						457,093,483	455,286,545	1,806,938	0.563	1,017,597	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	1,252,679	1,244,939	7,740	0.620	4,801	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	19,919	19,919	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	20,494	13,720	6,774	0.542	3,671	
6	Otter Trawl	OPEN	all	MA	lg	7,702	3,827	3,875	0.496	1,923	
7	Otter Trawl	OPEN	all	NE	sm	38,740	29,115	9,625	0.474	4,560	
8	Otter Trawl	OPEN	all	NE	lg	2,697	2,676	21	1.185	24	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	1,321	219	1,102	0.446	491	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	483	483				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	136	136				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	47	47				P
27	Otter Trawl, Other	OPEN	all	NE	sm	95	95				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	320	320	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	135	135	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	2,097	1,538	559	0.642	359	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	270	270	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	304	304	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						2,123	206	1,917	0.446	856	
Other minor fleets						0	0				
TOTAL						1,349,563	1,317,949	31,614	0.249	7,882	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	172	146	26	1.002	26	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	83,389	80,123	3,266	1.108	3,620	P
4	Hand Line	OPEN	all	NE	all	15,600	15,600	0			
5	Otter Trawl	OPEN	all	MA	sm	1,348,662	716,954	631,708	0.314	198,280	
6	Otter Trawl	OPEN	all	MA	lg	822,309	675,479	146,830	0.322	47,277	
7	Otter Trawl	OPEN	all	NE	sm	512,402	121,179	391,223	0.236	92,297	
8	Otter Trawl	OPEN	all	NE	lg	156,422	42,209	114,213	0.308	35,139	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	835	0	835	0.659	551	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	105	95	10	0.988	10	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	1,500	1,500	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,831	1,645	186	0.619	115	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	80	80	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	3,739	426	3,313	0.155	513	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	4,950	4,950				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,725	1,725				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	150	150	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	750	750	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	420	0	420	0.790	332	
25	Otter Trawl, Other	OPEN	all	MA	sm	319	319				P
27	Otter Trawl, Other	OPEN	all	NE	sm	50	50				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	125	87	38	0.420	16	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	3,400	3,345	55	0.645	35	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	2,249	2,180	69	1.124	77	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	791	90	701	0.000	0	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	28,099	9,935	18,164	0.314	5,712	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	860	374	486	0.516	251	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	256	25	231	0.316	73	
39	Dredge, Scallop	AA	GEN	NE	all	5	0	5	0.960	5	
40	Dredge, Scallop	AA	LIM	MA	all	3,826	36	3,790	0.310	1,174	
41	Dredge, Scallop	AA	LIM	NE	all	5,909	0	5,909	0.294	1,736	
42	Dredge, Scallop	OPEN	GEN	MA	all	1,018	91	927	0.242	224	
43	Dredge, Scallop	OPEN	GEN	NE	all	564	0	564	0.691	390	
44	Dredge, Scallop	OPEN	LIM	MA	all	5,046	112	4,934	0.636	3,141	
45	Dredge, Scallop	OPEN	LIM	NE	all	27,994	38	27,956	0.460	12,860	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	466,623	321,154	145,469	0.257	37,337	
54	Pots and Traps, Fish	OPEN	all	NE	all	240,284	79,289	160,995	0.182	29,347	
55	Pots and Traps, Conch	OPEN	all	MA	all	6,270	6,178	92	0.899	83	
56	Pots and Traps, Conch	OPEN	all	NE	all	1,261	910	351	0.486	171	
58	Pots and Traps, Lobster	OPEN	all	MA	all	162,473	95,452	67,021	1.265	84,805	
59	Pots and Traps, Lobster	OPEN	all	NE	all	33,262	31,511	1,751	0.916	1,604	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	774	0	774	1.488	1,152	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	208	0	208	1.079	225	
Confidential fleets						18,305	15,459	2,846	0.442	1,259	
Other minor fleets						3,395	3,395				
TOTAL						3,968,405	2,233,041	1,735,364	0.142	246,947	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	50	50	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	44,595	43,366	1,229	1.084	1,333	P
4	Hand Line	OPEN	all	NE	all	10,421	10,307	114	0.781	89	
5	Otter Trawl	OPEN	all	MA	sm	614,420	464,294	150,126	0.207	31,074	
6	Otter Trawl	OPEN	all	MA	lg	3,780,582	3,576,419	204,163	0.137	28,026	
7	Otter Trawl	OPEN	all	NE	sm	696,548	406,489	290,059	0.253	73,468	
8	Otter Trawl	OPEN	all	NE	lg	1,130,712	620,815	509,897	0.210	106,993	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	2,632	0	2,632	0.679	1,788	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	807	489	318	0.988	314	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	227	200	27	0.087	2	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	15,821	15,621	200	0.709	142	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	6,700	6,700	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	5,316	3,127	2,189	1.404	3,073	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	442	442				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,079	1,079				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	600	600	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	335	335	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	100	100	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	1,138	1,138				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	100,116	418	99,698	0.225	22,451	
25	Otter Trawl, Other	OPEN	all	MA	sm	550	550				P
27	Otter Trawl, Other	OPEN	all	NE	sm	1,120	1,120				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	180	19	161	0.213	34	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	5,926	5,132	794	0.204	162	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	18,386	11,980	6,406	0.301	1,925	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	32	32	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	26,450	17,245	9,205	0.357	3,289	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	120,194	24,101	96,093	0.226	21,685	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	8,893	2,150	6,743	0.330	2,227	
39	Dredge, Scallop	AA	GEN	NE	all	872	0	872	0.305	266	
40	Dredge, Scallop	AA	LIM	MA	all	140,033	8,538	131,495	0.195	25,652	
41	Dredge, Scallop	AA	LIM	NE	all	277,602	260	277,342	0.175	48,474	
42	Dredge, Scallop	OPEN	GEN	MA	all	67,194	17,917	49,277	0.174	8,563	
43	Dredge, Scallop	OPEN	GEN	NE	all	31,438	75	31,363	0.329	10,326	
44	Dredge, Scallop	OPEN	LIM	MA	all	79,282	10,575	68,707	0.333	22,898	
45	Dredge, Scallop	OPEN	LIM	NE	all	255,255	445	254,810	0.465	118,371	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	635	613	22	0.420	9	
54	Pots and Traps, Fish	OPEN	all	NE	all	794	690	104	2.685	278	
55	Pots and Traps, Conch	OPEN	all	MA	all	40	40	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	637	92	545	1.180	643	
59	Pots and Traps, Lobster	OPEN	all	NE	all	136	136	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	10,752	101	10,651	0.653	6,955	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	3,913	0	3,913	0.972	3,802	
Confidential fleets						49,969	49,162	807	0.415	335	
Other minor fleets						34,270	34,270				
TOTAL						7,547,194	5,337,232	2,209,962	0.087	193,369	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	41,043	40,763	280	1.438	403	P
4	Hand Line	OPEN	all	NE	all	5,375	5,375	0			
5	Otter Trawl	OPEN	all	MA	sm	5,880,026	3,757,082	2,122,944	0.171	362,043	
6	Otter Trawl	OPEN	all	MA	lg	2,093,656	1,868,396	225,260	0.237	53,380	
7	Otter Trawl	OPEN	all	NE	sm	7,660,609	5,598,809	2,061,800	0.230	474,643	
8	Otter Trawl	OPEN	all	NE	lg	2,524,724	1,484,858	1,039,866	0.368	382,996	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	11	0	11	0.480	5	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	70	70	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	7	7	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	233	212	21	0.620	13	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	1,076	1,076	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	18,802	624	18,178	0.731	13,296	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	24,405	24,405				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	28,801	28,801				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	9,500	9,500	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	350	350	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	8,542	8,542				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	805	0	805	0.644	518	
25	Otter Trawl, Other	OPEN	all	MA	sm	519	519				P
27	Otter Trawl, Other	OPEN	all	NE	sm	1,390	1,390				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1,374	1,311	63	0.574	36	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	8,856	8,591	265	0.978	259	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	493	493	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	1,040	1,040	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	95,602	94,714	888	0.306	272	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	3,257	3,208	49	0.757	37	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	55	1	54	0.556	30	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	878	2	876	0.445	389	
41	Dredge, Scallop	AA	LIM	NE	all	1,271	0	1,271	0.304	386	
42	Dredge, Scallop	OPEN	GEN	MA	all	517	4	513	0.291	149	
43	Dredge, Scallop	OPEN	GEN	NE	all	387	0	387	0.488	189	
44	Dredge, Scallop	OPEN	LIM	MA	all	432	0	432	0.499	216	
45	Dredge, Scallop	OPEN	LIM	NE	all	1,684	0	1,684	0.431	726	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	5,100	5,100	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	8,326	7,900	426	0.420	179	
54	Pots and Traps, Fish	OPEN	all	NE	all	100,826	95,666	5,160	0.175	904	
55	Pots and Traps, Conch	OPEN	all	MA	all	13	13	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	246	155	91	1.167	106	
58	Pots and Traps, Lobster	OPEN	all	MA	all	3,612	1,608	2,004	1.482	2,969	
59	Pots and Traps, Lobster	OPEN	all	NE	all	9,761	4,535	5,226	2.964	15,490	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						31,410	10,987	20,423	0.332	6,782	
Other minor fleets						13,933	13,933				
TOTAL						18,589,013	13,080,040	5,508,973	0.129	711,597	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	913	111	802	0.685	549	
6	Otter Trawl	OPEN	all	MA	lg	196	113	83	1.561	129	
7	Otter Trawl	OPEN	all	NE	sm	20,261	0	20,261	0.290	5,881	
8	Otter Trawl	OPEN	all	NE	lg	2,229,545	2,115,791	113,754	0.183	20,824	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	2,000	2,000	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	21,527	21,527	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	14,435	13,151	1,284	0.715	918	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	4,209	4,148	61	0.630	38	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	20	0	20	0.558	11	
40	Dredge, Scallop	AA	LIM	MA	all	97	0	97	1.057	102	
41	Dredge, Scallop	AA	LIM	NE	all	6,477	3	6,474	0.670	4,338	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	2,079	0	2,079	0.462	961	
44	Dredge, Scallop	OPEN	LIM	MA	all	9	0	9	1.118	10	
45	Dredge, Scallop	OPEN	LIM	NE	all	1,414	0	1,414	0.496	701	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	784	0	784	2.944	2,308	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	395	0	395	1.079	427	
Confidential fleets						97	22	75	0.000	0	
Other minor fleets						0	0				
TOTAL						2,304,457	2,156,866	147,591	0.151	22,252	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	25,875	18,967	6,908	0.610	4,213	
3	Hand Line	OPEN	all	MA	all	2,299	2,299	0			P
4	Hand Line	OPEN	all	NE	all	49,857	48,037	1,820	0.683	1,244	
5	Otter Trawl	OPEN	all	MA	sm	486	126	360	0.690	248	
6	Otter Trawl	OPEN	all	MA	lg	6,510	6,184	326	0.524	171	
7	Otter Trawl	OPEN	all	NE	sm	6,809	177	6,632	0.416	2,757	
8	Otter Trawl	OPEN	all	NE	lg	1,030,776	1,005,926	24,850	0.245	6,084	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	71	0	71	0.853	61	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,891	1,854	37	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	93,263	74,732	18,531	0.382	7,073	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	300	228	72	0.675	49	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	561	139	422	0.486	205	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	251,763	233,853	17,910	0.462	8,283	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	27,954	18,661	9,293	0.289	2,684	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	67	0	67	0.645	43	
40	Dredge, Scallop	AA	LIM	MA	all	93	0	93	1.057	98	
41	Dredge, Scallop	AA	LIM	NE	all	3,878	60	3,818	0.303	1,157	
42	Dredge, Scallop	OPEN	GEN	MA	all	35	35	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	605	0	605	0.460	278	
44	Dredge, Scallop	OPEN	LIM	MA	all	15	15	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	2,309	90	2,219	0.321	712	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	12	12	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	20	20	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	90	90	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	71	71	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	1,208	26	1,182	2.046	2,418	
59	Pots and Traps, Lobster	OPEN	all	NE	all	45,342	202	45,140	1.106	49,947	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	215	0	215	0.381	82	
Confidential fleets						115	115	0			
Other minor fleets						0	0				
TOTAL						1,552,492	1,411,919	140,573	0.369	51,888	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	16,902	16,902	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	297	93	204	0.776	158	
5	Otter Trawl	OPEN	all	MA	sm	65	40	25	0.972	24	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	102	0	102	1.329	135	
8	Otter Trawl	OPEN	all	NE	lg	58,817	28,478	30,339	0.331	10,028	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	3,244	1,977	1,267	0.407	516	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	165	165	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	5,010	3,386	1,624	0.512	832	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	19,014	5,630	13,384	0.471	6,304	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	94	0	94	0.952	90	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	34	0	34	1.288	44	
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	453	40	413	0.627	259	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	1,002	1,002	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						0	0	0			
Other minor fleets						0	0				
TOTAL						105,198	57,713	47,485	0.250	11,890	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	6,994	0	6,994	0.613	4,286	
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	280	0	280	0.685	192	
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	44,258	60	44,198	0.430	19,005	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	63	0	63	0.241	15	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	50	50	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	2,254	0	2,254	0.413	930	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	1,087	0	1,087	0.761	827	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	418	0	418	0.546	228	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						0	0	0			
Other minor fleets						0	0				
TOTAL						55,404	110	55,294	0.353	19,525	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	203,017	129,422	73,595	0.601	44,207	
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	35,450	33,378	2,072	0.573	1,187	
5	Otter Trawl	OPEN	all	MA	sm	21,225	0	21,225	0.611	12,965	
6	Otter Trawl	OPEN	all	MA	lg	148	0	148	0.699	103	
7	Otter Trawl	OPEN	all	NE	sm	741,337	40	741,297	0.292	216,655	
8	Otter Trawl	OPEN	all	NE	lg	6,920,696	6,037,901	882,795	0.262	231,608	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	206,857	150,600	56,257	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	3,314,980	2,149,530	1,165,450	0.056	65,285	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	28,463	23,586	4,877	0.240	1,171	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	3,451	3,254	197	0.686	135	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	462	0	462	0.254	117	
40	Dredge, Scallop	AA	LIM	MA	all	1,142	0	1,142	0.860	983	
41	Dredge, Scallop	AA	LIM	NE	all	2,779	0	2,779	0.271	752	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	1,035	0	1,035	0.815	844	
44	Dredge, Scallop	OPEN	LIM	MA	all	11	0	11	0.947	11	
45	Dredge, Scallop	OPEN	LIM	NE	all	3,745	0	3,745	0.464	1,736	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	28,047	26,718	1,329	0.376	499	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	26,735	24,942	1,793	0.997	1,787	
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	204	0	204	0.902	184	
	Confidential fleets					0	0	0			
	Other minor fleets					0	0				
	TOTAL					11,539,785	8,579,371	2,960,414	0.110	327,074	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	1,909	0	1,909	0.694	1,325	
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	12,656	0	12,656	0.751	9,504	
6	Otter Trawl	OPEN	all	MA	lg	3,268	0	3,268	1.250	4,086	
7	Otter Trawl	OPEN	all	NE	sm	8,712	0	8,712	0.479	4,171	
8	Otter Trawl	OPEN	all	NE	lg	59,236	0	59,236	0.548	32,452	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	4,503	0	4,503	0.853	3,840	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1,204	0	1,204	0.218	262	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	78	0	78	1.242	97	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	6	0	6	1.170	7	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	60	0	60	1.087	65	
39	Dredge, Scallop	AA	GEN	NE	all	82	0	82	0.570	47	
40	Dredge, Scallop	AA	LIM	MA	all	105	0	105	0.718	75	
41	Dredge, Scallop	AA	LIM	NE	all	884	0	884	0.271	239	
42	Dredge, Scallop	OPEN	GEN	MA	all	60	0	60	0.718	43	
43	Dredge, Scallop	OPEN	GEN	NE	all	95	0	95	0.441	42	
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	1,173	0	1,173	0.439	515	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	1,397	10	1,387	1.879	2,608	
59	Pots and Traps, Lobster	OPEN	all	NE	all	10,661	0	10,661	1.246	13,289	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	172	0	172	1.488	256	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0	0			
	Other minor fleets					0	0				
	TOTAL					106,262	10	106,252	0.349	37,120	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	1,094	306	788	0.654	515	
3	Hand Line	OPEN	all	MA	all	37	37	0			P
4	Hand Line	OPEN	all	NE	all	70,567	68,177	2,390	0.727	1,736	
5	Otter Trawl	OPEN	all	MA	sm	1	0	1	0.973	1	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	30,431	0	30,431	0.710	21,604	
8	Otter Trawl	OPEN	all	NE	lg	4,594,868	4,555,016	39,852	0.648	25,805	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	4,222	4,125	97	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	220,524	206,226	14,298	0.223	3,190	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	9	9	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	916,020	872,381	43,639	0.508	22,150	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	4,479	3,026	1,453	0.505	734	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	57	0	57	0.953	55	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	49	0	49	1.282	63	
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	38	0	38	0.346	13	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	62	0	62	0.732	45	
53	Pots and Traps, Fish	OPEN	all	MA	all	16	16	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						0	0	0			
Other minor fleets						0	0				
TOTAL						5,842,475	5,709,319	133,156	0.304	40,463	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	19	0	19	1.002	19	
2	Longline, Bottom	OPEN	all	NE	all	144	144	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			P
4	Hand Line	OPEN	all	NE	all	762	762	0			
5	Otter Trawl	OPEN	all	MA	sm	5,501	25	5,476	0.543	2,971	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	1,558	0	1,558	0.752	1,171	
8	Otter Trawl	OPEN	all	NE	lg	9,617,563	9,345,876	271,687	0.760	206,603	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	7,125	7,125	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	209,288	178,979	30,309	0.398	12,057	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	58,093	57,261	832	0.448	373	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	229	229	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	9	0	9	1.118	10	
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	28	20	8	2.855	23	
53	Pots and Traps, Fish	OPEN	all	MA	all	15	15	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	15	15	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	1	1	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	5	5	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						11	0	11	0.000	0	
Other minor fleets						0	0				
TOTAL						9,900,367	9,590,457	309,910	0.668	206,979	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	1,476	24	1,452	0.351	510	
2	Longline, Bottom	OPEN	all	NE	all	9,549	8,967	582	2.415	1,406	
3	Hand Line	OPEN	all	MA	all	94	94	0			P
4	Hand Line	OPEN	all	NE	all	651	651	0			
5	Otter Trawl	OPEN	all	MA	sm	3,807	1,013	2,794	0.507	1,417	
6	Otter Trawl	OPEN	all	MA	lg	7,844	10	7,834	0.634	4,969	
7	Otter Trawl	OPEN	all	NE	sm	2,803	82	2,721	0.464	1,262	
8	Otter Trawl	OPEN	all	NE	lg	2,188,315	2,081,919	106,396	0.503	53,513	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	14	10	4	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	23,532	23,514	18	0.606	11	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	266,358	247,934	18,424	0.514	9,470	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	1,652	1,407	245	0.726	178	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	39	0	39	1.086	42	
39	Dredge, Scallop	AA	GEN	NE	all	45	0	45	0.692	31	
40	Dredge, Scallop	AA	LIM	MA	all	305	0	305	0.965	295	
41	Dredge, Scallop	AA	LIM	NE	all	356	0	356	0.370	131	
42	Dredge, Scallop	OPEN	GEN	MA	all	27	0	27	0.761	20	
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	18	0	18	0.759	14	
45	Dredge, Scallop	OPEN	LIM	NE	all	120	0	120	0.766	92	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	2	2	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	200	200	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	60	0	60	0.849	51	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						7	0	7	0.000	0	
Other minor fleets						0	0				
TOTAL						2,507,274	2,365,827	141,447	0.386	54,626	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	1,011	0	1,011	1.244	1,257	P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	101,238	0	101,238	0.167	16,909	
6	Otter Trawl	OPEN	all	MA	lg	189,446	319	189,127	0.148	27,911	
7	Otter Trawl	OPEN	all	NE	sm	77,646	5	77,641	0.246	19,093	
8	Otter Trawl	OPEN	all	NE	lg	379,661	69	379,592	0.169	64,268	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	109	0	109	0.528	58	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	120	0	120	0.754	91	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	36	0	36	0.029	1	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	804	0	804	0.522	419	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	345	0	345	0.576	198	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	1,015	0	1,015	0.473	480	
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	4	0	4	0.784	3	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	1,304	4	1,300	0.248	322	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	23	15	8	0.660	5	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	2,938	0	2,938	0.338	993	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	134	0	134	0.560	75	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	4,816	0	4,816	0.395	1,904	
39	Dredge, Scallop	AA	GEN	NE	all	9,251	0	9,251	0.332	3,067	
40	Dredge, Scallop	AA	LIM	MA	all	16,209	0	16,209	0.298	4,825	
41	Dredge, Scallop	AA	LIM	NE	all	151,572	0	151,572	0.247	37,467	
42	Dredge, Scallop	OPEN	GEN	MA	all	19,371	0	19,371	0.171	3,313	
43	Dredge, Scallop	OPEN	GEN	NE	all	43,441	0	43,441	0.215	9,333	
44	Dredge, Scallop	OPEN	LIM	MA	all	22,494	0	22,494	0.440	9,893	
45	Dredge, Scallop	OPEN	LIM	NE	all	82,865	0	82,865	0.229	18,994	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	1,317	0	1,317	0.780	1,028	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	1,337	0	1,337	0.538	719	
Confidential fleets						677	0	677	0.297	201	
Other minor fleets						0	0				
TOTAL						1,109,183	412	1,108,771	0.078	86,956	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	53	53	0			
5	Otter Trawl	OPEN	all	MA	sm	54,359	2,756	51,603	0.179	9,217	
6	Otter Trawl	OPEN	all	MA	lg	147,922	109,278	38,644	0.197	7,602	
7	Otter Trawl	OPEN	all	NE	sm	175,908	955	174,953	0.239	41,746	
8	Otter Trawl	OPEN	all	NE	lg	1,900,426	1,800,017	100,409	0.228	22,909	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	229	0	229	0.340	78	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	855	0	855	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,015	1,015	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	21,677	21,677	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	52	0	52	0.722	37	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	233	144	89	1.065	95	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	16,154	15,731	423	0.346	147	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	3,891	3,779	112	0.686	76	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	4,367	0	4,367	0.218	953	
40	Dredge, Scallop	AA	LIM	MA	all	3,157	0	3,157	0.669	2,111	
41	Dredge, Scallop	AA	LIM	NE	all	38,013	212	37,801	0.291	10,983	
42	Dredge, Scallop	OPEN	GEN	MA	all	2,184	0	2,184	0.342	746	
43	Dredge, Scallop	OPEN	GEN	NE	all	16,115	143	15,972	0.235	3,760	
44	Dredge, Scallop	OPEN	LIM	MA	all	545	0	545	0.458	249	
45	Dredge, Scallop	OPEN	LIM	NE	all	124,280	1,417	122,863	0.265	32,576	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	2	2	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	482	0	482	2.101	1,012	
59	Pots and Traps, Lobster	OPEN	all	NE	all	1,751	0	1,751	0.956	1,673	
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	616	0	616	0.637	393	
Confidential fleets						680	680	0			
Other minor fleets						0	0				
TOTAL						2,514,965	1,957,859	557,106	0.108	60,135	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	30,871	2	30,869	0.472	14,581	
6	Otter Trawl	OPEN	all	MA	lg	20,006	438	19,568	0.421	8,243	
7	Otter Trawl	OPEN	all	NE	sm	23,079	0	23,079	0.367	8,477	
8	Otter Trawl	OPEN	all	NE	lg	721,856	620,256	101,600	0.186	18,901	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	47	0	47	0.633	29	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	51	0	51	0.988	51	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	17	0	17	0.827	14	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	47	0	47	1.117	52	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	200	200	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	10,201	10,040	161	0.398	64	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	1,098	0	1,098	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	1,979	1,839	140	0.474	66	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	791	761	30	0.887	27	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	400	0	400	0.756	302	
39	Dredge, Scallop	AA	GEN	NE	all	44	0	44	0.518	23	
40	Dredge, Scallop	AA	LIM	MA	all	1,283	0	1,283	0.412	529	
41	Dredge, Scallop	AA	LIM	NE	all	9,186	4	9,182	0.183	1,680	
42	Dredge, Scallop	OPEN	GEN	MA	all	80	0	80	0.461	37	
43	Dredge, Scallop	OPEN	GEN	NE	all	3,082	0	3,082	0.572	1,761	
44	Dredge, Scallop	OPEN	LIM	MA	all	1,904	0	1,904	0.366	696	
45	Dredge, Scallop	OPEN	LIM	NE	all	13,533	4	13,529	0.601	8,131	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	7	0	7	0.895	7	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						785	83	702	0.925	649	
Other minor fleets						0	0				
TOTAL						840,546	633,627	206,919	0.135	27,982	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	5,431	45	5,386	0.292	1,571	
6	Otter Trawl	OPEN	all	MA	lg	39,034	36,873	2,161	0.642	1,388	
7	Otter Trawl	OPEN	all	NE	sm	27,176	220	26,956	0.321	8,644	
8	Otter Trawl	OPEN	all	NE	lg	700,848	641,953	58,895	0.381	22,467	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,678	1,671	7	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	4,688	4,310	378	0.101	38	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	15	0	15	0.876	13	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	37,607	34,584	3,023	0.593	1,794	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	1,965	1,909	56	1.164	66	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	12	0	12	1.086	13	
39	Dredge, Scallop	AA	GEN	NE	all	152	0	152	0.301	46	
40	Dredge, Scallop	AA	LIM	MA	all	4,289	0	4,289	0.800	3,431	
41	Dredge, Scallop	AA	LIM	NE	all	64,966	0	64,966	0.205	13,326	
42	Dredge, Scallop	OPEN	GEN	MA	all	568	0	568	0.351	199	
43	Dredge, Scallop	OPEN	GEN	NE	all	24,453	0	24,453	0.232	5,666	
44	Dredge, Scallop	OPEN	LIM	MA	all	531	0	531	0.552	293	
45	Dredge, Scallop	OPEN	LIM	NE	all	70,657	0	70,657	0.653	46,130	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						918	649	269	0.000	0	
Other minor fleets						0	0				
TOTAL						984,987	722,214	262,773	0.206	54,191	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	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	20	20	0			
5	Otter Trawl	OPEN	all	MA	sm	6,204	505	5,699	0.503	2,868	
6	Otter Trawl	OPEN	all	MA	lg	7,343	323	7,020	0.667	4,683	
7	Otter Trawl	OPEN	all	NE	sm	4,598	1,198	3,400	0.487	1,657	
8	Otter Trawl	OPEN	all	NE	lg	4,736	749	3,987	0.581	2,318	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	0	0				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	1,797	0	1,797	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2	2	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	29	2	27	1.094	30	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	22	0	22	1.116	25	
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	14	0	14	0.704	10	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						1,357	0	1,357	0.632	858	
Other minor fleets						0	0				
TOTAL						26,122	2,799	23,323	0.268	6,246	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	972	855	117	1.549	180	
2	Longline, Bottom	OPEN	all	NE	all	98	0	98	0.703	69	
3	Hand Line	OPEN	all	MA	all	2,024	2,024	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	521,562	344,684	176,878	0.308	54,393	
6	Otter Trawl	OPEN	all	MA	lg	24,878	20,112	4,766	0.371	1,769	
7	Otter Trawl	OPEN	all	NE	sm	1,762,680	620,958	1,141,722	0.259	295,176	
8	Otter Trawl	OPEN	all	NE	lg	142,471	25,192	117,279	0.319	37,433	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	2,691	0	2,691	1.335	3,592	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	400	400	0			P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	500	500				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	545	545				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	2,147	0	2,147	0.251	538	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	2,296	0	2,296	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	4,965	4,965				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	0	0				P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	24	24	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	3,312	1,693	1,619	0.481	779	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	45	16	29	0.911	26	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	15	0	15	0.549	9	
39	Dredge, Scallop	AA	GEN	NE	all	489	0	489	0.234	115	
40	Dredge, Scallop	AA	LIM	MA	all	4,428	0	4,428	0.416	1,840	
41	Dredge, Scallop	AA	LIM	NE	all	35,064	0	35,064	0.306	10,725	
42	Dredge, Scallop	OPEN	GEN	MA	all	1,103	0	1,103	0.363	400	
43	Dredge, Scallop	OPEN	GEN	NE	all	4,866	0	4,866	0.562	2,736	
44	Dredge, Scallop	OPEN	LIM	MA	all	4,171	0	4,171	0.414	1,727	
45	Dredge, Scallop	OPEN	LIM	NE	all	45,082	0	45,082	0.330	14,890	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	201	0	201	0.997	201	
53	Pots and Traps, Fish	OPEN	all	MA	all	1,081	1,081	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	61	61	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	25	25	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	14,110	13,493	617	2.236	1,379	
59	Pots and Traps, Lobster	OPEN	all	NE	all	11,108	11,108	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	2	0	2	1.153	2	
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						493	0	493	0.765	377	
Other minor fleets						0	0				
TOTAL						2,593,908	1,047,736	1,546,172	0.196	303,082	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	834	612	222	1.481	328	
2	Longline, Bottom	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	434	434	0			
5	Otter Trawl	OPEN	all	MA	sm	2,698,741	2,445,567	253,174	0.268	67,920	
6	Otter Trawl	OPEN	all	MA	lg	56,086	41,518	14,568	0.316	4,597	
7	Otter Trawl	OPEN	all	NE	sm	10,926,236	9,558,455	1,367,781	0.258	352,887	
8	Otter Trawl	OPEN	all	NE	lg	1,032,722	424,067	608,655	0.232	140,937	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	8	0	8	0.988	8	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	19	0	19	0.067	1	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,083	0	1,083	1.000	1,083	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	499	0	499	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	44,575	3,545	41,030	0.337	13,846	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	53,692	53,692				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	10,805	10,805				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	879	200	679	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	13,353	4,097	9,256	0.159	1,472	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	10,652	10,652				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	626	626				P
27	Otter Trawl, Other	OPEN	all	NE	sm	957	957				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1	1	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	29	3	26	0.507	13	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	72,225	64,514	7,711	0.296	2,281	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	7,776	6,852	924	0.545	504	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	20	0	20	0.658	13	
39	Dredge, Scallop	AA	GEN	NE	all	39	0	39	0.523	20	
40	Dredge, Scallop	AA	LIM	MA	all	3,289	0	3,289	0.583	1,918	
41	Dredge, Scallop	AA	LIM	NE	all	15,393	0	15,393	0.275	4,240	
42	Dredge, Scallop	OPEN	GEN	MA	all	723	0	723	0.209	151	
43	Dredge, Scallop	OPEN	GEN	NE	all	1,042	0	1,042	0.391	408	
44	Dredge, Scallop	OPEN	LIM	MA	all	1,319	0	1,319	0.324	427	
45	Dredge, Scallop	OPEN	LIM	NE	all	11,670	0	11,670	0.298	3,482	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	707	688	19	0.376	7	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	3	0	3	0.960	3	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	12,449	10,928	1,521	0.995	1,514	
53	Pots and Traps, Fish	OPEN	all	MA	all	20	20	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	800	800	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	12	12	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						40,274	10	40,264	0.622	25,049	
Other minor fleets						0	0				
TOTAL						15,019,990	12,639,055	2,380,935	0.163	387,158	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	2,206	2,206	0			
3	Hand Line	OPEN	all	MA	all	295	8	287	0.156	45	P
4	Hand Line	OPEN	all	NE	all	1,757,774	1,757,774	0			
5	Otter Trawl	OPEN	all	MA	sm	83,773	68,741	15,032	0.527	7,928	
6	Otter Trawl	OPEN	all	MA	lg	4,167	3,922	245	0.674	165	
7	Otter Trawl	OPEN	all	NE	sm	1,532,272	1,481,913	50,359	0.393	19,811	
8	Otter Trawl	OPEN	all	NE	lg	10,684	5,421	5,263	0.495	2,604	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	1	0	1	0.636	< 1	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	265	0	265	0.526	139	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	815	815				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	95,040	95,040				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	2,189	2,189				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	276	276				P
27	Otter Trawl, Other	OPEN	all	NE	sm	5	5				P
29	Floating Trap	OPEN	all	NE	all	9,952	9,952				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	4,793	2,746	2,047	0.936	1,917	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	5,098	4,651	447	0.856	383	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	416	357	59	0.448	26	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	36,108	35,641	467	0.413	193	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	622	598	24	0.700	17	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	12	0	12	1.251	15	
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	75	0	75	0.650	49	
42	Dredge, Scallop	OPEN	GEN	MA	all	3	0	3	0.947	3	
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	24	0	24	0.746	18	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	34,201	34,200	1	0.244	< 1	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	2,690,244	2,688,170	2,074	0.958	1,988	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	13,114,600	13,113,174	1,426	0.742	1,058	
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	130	130	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						22,354	22,250	104	0.533	55	
Other minor fleets						1,535	1,535				
TOTAL						19,409,929	19,331,714	78,215	0.278	21,705	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	1,469	1,469	0			P
4	Hand Line	OPEN	all	NE	all	49	49	0			
5	Otter Trawl	OPEN	all	MA	sm	1,369,846	670,878	698,968	0.266	185,696	
6	Otter Trawl	OPEN	all	MA	lg	94,008	73,032	20,976	1.133	23,765	
7	Otter Trawl	OPEN	all	NE	sm	8,891,291	7,464,359	1,426,932	0.227	324,451	
8	Otter Trawl	OPEN	all	NE	lg	93,849	36,234	57,615	0.638	36,776	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	2	0	2	0.636	1	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	174,838	650	174,188	0.226	39,292	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	12,826	12,826				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	16,115	16,115				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	7	0	7	0.241	2	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	2,300	2,300				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	39,990	382	39,608	0.586	23,192	
25	Otter Trawl, Other	OPEN	all	MA	sm	676	676				P
27	Otter Trawl, Other	OPEN	all	NE	sm	869	869				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	19,150	18,833	317	0.459	145	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	68	68	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	384	338	46	0.386	18	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 Mesh	Gear Type	Access	Trip	Region						
		Area	Category	Group	Total	Kept	Discarded	CV	SE	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	4	0	4	1.165	5
36	Purse Seine	OPEN	all	MA	all	0	0			P
37	Purse Seine	OPEN	all	NE	all	0	0	0		
38	Dredge, Scallop	AA	GEN	MA	all	19	0	19	1.087	21
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0		
40	Dredge, Scallop	AA	LIM	MA	all	32	0	32	0.309	10
41	Dredge, Scallop	AA	LIM	NE	all	45	0	45	0.401	18
42	Dredge, Scallop	OPEN	GEN	MA	all	2	0	2	0.947	2
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0		
44	Dredge, Scallop	OPEN	LIM	MA	all	94	0	94	0.537	50
45	Dredge, Scallop	OPEN	LIM	NE	all	45	0	45	0.404	18
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	426	426	0		
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0		
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	142	0	142	0.988	140
53	Pots and Traps, Fish	OPEN	all	MA	all	40	40	0		
54	Pots and Traps, Fish	OPEN	all	NE	all	900	900	0		
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0		
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0		
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0		
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0		
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0		
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0		
63	Beam Trawl	OPEN	all	MA	sm	0	0			P
65	Dredge, Other	OPEN	all	MA	all	0	0			P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0		
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0		
Confidential fleets					64,042	814	63,228	0.357	22,578	
Other minor fleets					25	25				
TOTAL					10,783,552	8,301,283	2,482,269	0.153	379,816	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 Mesh	Gear Type	Access	Trip	Region						
		Area	Category	Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	0	0	0		
2	Longline, Bottom	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	6,773,616	6,217,956	555,660	0.408	226,961
6	Otter Trawl	OPEN	all	MA	lg	2,067	7	2,060	0.561	1,156
7	Otter Trawl	OPEN	all	NE	sm	15,864,064	15,521,502	342,562	0.266	90,972
8	Otter Trawl	OPEN	all	NE	lg	6,427	89	6,338	0.387	2,451
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0		
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0		P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	53	0	53	0.102	5
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	44	0	44	0.759	33
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0		P
15	Otter Trawl, Twin	OPEN	all	MA	sm	105,215	392	104,823	0.118	12,355
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	1,490	1,490			P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	119,350	119,350			P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	102	0	102	0.000	0
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	343	0	343	0.165	56
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	12,977	0	12,977	0.000	0
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0			P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0		
25	Otter Trawl, Other	OPEN	all	MA	sm	25,000	25,000			P
27	Otter Trawl, Other	OPEN	all	NE	sm	0	0			P
29	Floating Trap	OPEN	all	NE	all	0	0			P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0		
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0		
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0		
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0		P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 Mesh	Gear Type	Access	Trip	Region						
		Area	Category	Group	Total	Kept	Discarded	CV	SE	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0		
36	Purse Seine	OPEN	all	MA	all	0	0			P
37	Purse Seine	OPEN	all	NE	all	0	0	0		
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0		
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0		
40	Dredge, Scallop	AA	LIM	MA	all	76	0	76	0.848	65
41	Dredge, Scallop	AA	LIM	NE	all	726	0	726	0.816	592
42	Dredge, Scallop	OPEN	GEN	MA	all	14	0	14	1.022	15
43	Dredge, Scallop	OPEN	GEN	NE	all	8	0	8	1.276	10
44	Dredge, Scallop	OPEN	LIM	MA	all	179	0	179	0.521	93
45	Dredge, Scallop	OPEN	LIM	NE	all	519	0	519	0.447	232
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	15	0	15	0.376	6
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0		
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	371	371	0		
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0		
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0		
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0		
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0		
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0		
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0		
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0		
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0		
63	Beam Trawl	OPEN	all	MA	sm	30,000	30,000			P
65	Dredge, Other	OPEN	all	MA	all	0	0			P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0		
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0		
Confidential fleets					54,969	8,720	46,249	0.555	25,682	
Other minor fleets					0	0				
TOTAL					22,997,625	21,924,878	1,072,747	0.229	246,185	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 Mesh	Gear Type	Access		Trip	Region						
		Area	Category								
1	Longline, Bottom	OPEN	all	MA	all	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	10	10	0			P
4	Hand Line	OPEN	all	NE	all	256	256	0			
5	Otter Trawl	OPEN	all	MA	sm	5,934,059	5,687,181	246,878	0.262	64,700	
6	Otter Trawl	OPEN	all	MA	lg	293,183	288,215	4,968	0.372	1,846	
7	Otter Trawl	OPEN	all	NE	sm	12,499,563	12,093,588	405,975	0.277	112,566	
8	Otter Trawl	OPEN	all	NE	lg	455,783	388,700	67,083	0.625	41,899	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	1	0	1	0.636	1	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	10	10	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,939	15	1,924	0.351	676	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	1,028,370	1,024,995	3,375	0.974	3,287	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	171,069	171,069				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	175,329	175,329				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	1,000	1,000	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1	1	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	3,050	3,050	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	151,186	151,186				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	32,718	639	32,079	0.440	14,109	
25	Otter Trawl, Other	OPEN	all	MA	sm	84,330	84,330				P
27	Otter Trawl, Other	OPEN	all	NE	sm	317,831	317,831				P
29	Floating Trap	OPEN	all	NE	all	7	7				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	8	8	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	208	208	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	28	28	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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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 Mesh	Gear Type	Access	Trip	Region		Total	Kept	Discarded	CV	SE	Pilot
		Area	Category		Group						
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlq	0	0	0			
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	92	0	92	0.267	25	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	4,305	50	4,255	0.210	892	
41	Dredge, Scallop	AA	LIM	NE	all	4,411	0	4,411	0.208	918	
42	Dredge, Scallop	OPEN	GEN	MA	all	2,325	268	2,057	0.202	416	
43	Dredge, Scallop	OPEN	GEN	NE	all	71	0	71	0.952	68	
44	Dredge, Scallop	OPEN	LIM	MA	all	3,765	452	3,313	0.377	1,248	
45	Dredge, Scallop	OPEN	LIM	NE	all	7,645	71	7,574	0.357	2,706	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	170	170	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	3	0	3	0.960	3	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	45	30	15	0.692	11	
53	Pots and Traps, Fish	OPEN	all	MA	all	1,500	1,500	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	2,890	2,890	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						834,527	827,028	7,499	1.273	9,547	
Other minor fleets						3,699	3,699				
TOTAL						22,015,388	21,223,814	791,574	0.174	137,580	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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: BLUELINE TILEFISH (*Caulolatilus microps*)

Fleet Row Mesh	Gear Type	Access		Trip	Region						
		Area	Category								
1	Longline, Bottom	OPEN	all	MA	all	17,857	13,525	4,332	0.996	4,316	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	18,398	18,398	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	4,157	1,082	3,075	0.614	1,887	
6	Otter Trawl	OPEN	all	MA	lg	2,166	1,310	856	0.499	427	
7	Otter Trawl	OPEN	all	NE	sm	3,077	1,325	1,752	0.605	1,060	
8	Otter Trawl	OPEN	all	NE	lg	278	278	0			
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	724	40	684	0.414	283	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	90	90				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	26	26				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	32	32				P
27	Otter Trawl, Other	OPEN	all	NE	sm	50	50				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	320	320	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	135	135	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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: *BLUELINE TILEFISH (Caulolatilus microps)*

Fleet Row Mesh	Gear Type	Access	Trip	Region						
		Area	Category	Group	Total	Kept	Discarded	CV	SE	Pilot
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	0	0	0		
36	Purse Seine	OPEN	all	MA	all	0	0			P
37	Purse Seine	OPEN	all	NE	all	0	0	0		
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0		
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0		
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0		
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0		
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0		
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0		
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0		
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0		
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0		
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0		
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0		
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0		
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0		
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0		
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0		
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0		
59	Pots and Traps, Lobster	OPEN	all	NE	all	208	208	0		
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0		
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0		
63	Beam Trawl	OPEN	all	MA	sm	0	0			P
65	Dredge, Other	OPEN	all	MA	all	0	0			P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0		
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0		
Confidential fleets					640	46	594	0.915	543	
Other minor fleets					0	0				
TOTAL					48,157	36,865	11,292	0.433	4,885	

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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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: GOLDEN TILEFISH (Lopholatilus chamaeleonticeps)

Fleet Row Mesh	Gear Type	Access	Trip	Region		Total	Kept	Discarded	CV	SE	Pilot
		Area	Category		Group						
1	Longline, Bottom	OPEN	all	MA	all	1,234,822	1,231,414	3,408	0.789	2,689	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	1,521	1,521	0			P
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	16,337	12,638	3,699	0.581	2,150	
6	Otter Trawl	OPEN	all	MA	lg	5,537	2,517	3,020	0.620	1,873	
7	Otter Trawl	OPEN	all	NE	sm	32,682	27,218	5,464	0.512	2,797	
8	Otter Trawl	OPEN	all	NE	lg	2,419	2,398	21	1.185	24	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0	0			P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	0	0	0			P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	0	0	0			P
15	Otter Trawl, Twin	OPEN	all	MA	sm	597	179	418	0.498	208	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	393	393				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	110	110				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	0	0	0			P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0			
25	Otter Trawl, Other	OPEN	all	MA	sm	15	15				P
27	Otter Trawl, Other	OPEN	all	NE	sm	45	45				P
29	Floating Trap	OPEN	all	NE	all	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0			
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0	0			P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	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 25 individual species that compose the 14 species groups, by fleet, based on July 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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: GOLDEN TILEFISH (Lopholatilus chamaeleonticeps)

Fleet Row Mesh	Gear Type	Access	Trip	Region		Total	Kept	Discarded	CV	SE	Pilot
		Area	Category		Group						
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	2,097	1,538	559	0.642	359	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	0	0	0			
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0			
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0			
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
58	Pots and Traps, Lobster	OPEN	all	MA	all	270	270	0			
59	Pots and Traps, Lobster	OPEN	all	NE	all	96	96	0			
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
63	Beam Trawl	OPEN	all	MA	sm	0	0				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
Confidential fleets						1,483	160	1,323	0.932	1,233	
Other minor fleets						0	0				
TOTAL						1,298,425	1,280,512	17,913	0.278	4,988	

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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, Bottom	OPEN	all	MA	all	1,858,295	1,643,691	214,605	0.666	142,979	
2	Longline, Bottom	OPEN	all	NE	all	7,093,565	6,336,502	757,063	0.907	687,002	
3	Hand Line	OPEN	all	MA	all	333,468	327,239	6,229	0.694	4,324	P
4	Hand Line	OPEN	all	NE	all	2,228,616	2,222,016	6,599	0.588	3,879	
5	Otter Trawl	OPEN	all	MA	sm	34,589,991	21,721,179	12,868,811	0.090	1,154,165	
6	Otter Trawl	OPEN	all	MA	lg	24,599,124	12,888,606	11,710,518	0.096	1,129,501	
7	Otter Trawl	OPEN	all	NE	sm	73,949,077	61,275,706	12,673,371	0.096	1,213,450	
8	Otter Trawl	OPEN	all	NE	lg	76,348,669	48,380,632	27,968,037	0.105	2,926,736	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	77,385	38,901	38,484	0.275	10,590	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	337,735	273,753	63,982	0.445	28,460	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	147,070	61,744	85,326	0.108	9,176	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1,820,876	1,308,864	512,012	0.299	152,874	
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	214,261	62,243	152,017	0.000	0	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	1,446,304	1,038,141	408,163	0.139	56,830	P
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	273,414	273,414				P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,517,081	1,517,081				P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	316,083	180,166	135,917	0.000	0	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	4,853,539	2,805,177	2,048,363	0.141	287,885	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	45,246	4,270	40,976	0.000	0	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	194,950	194,950				P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	705,700	2,074	703,626	0.211	148,763	
25	Otter Trawl, Other	OPEN	all	MA	sm	114,143	114,143				P
27	Otter Trawl, Other	OPEN	all	NE	sm	324,228	324,228				P
29	Floating Trap	OPEN	all	NE	all	10,504	10,504				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	2,532,728	2,312,035	220,692	0.350	77,317	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	6,670,169	6,378,608	291,561	0.124	36,236	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	6,152,429	5,163,692	988,738	0.107	105,415	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	22,845	20,740	2,104	0.000	0	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	9,523,193	8,736,042	787,151	0.287	225,687	

See text for fleet abbreviations.

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 2016 through June 2017 data. Dark shading indicates fleets not considered or with no observed 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
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	20,475,638	17,442,003	3,033,635	0.081	245,229	
36	Purse Seine	OPEN	all	MA	all	0	0				P
37	Purse Seine	OPEN	all	NE	all	49,977,720	49,967,871	9,849	0.658	6,485	
38	Dredge, Scallop	AA	GEN	MA	all	6,110,147	4,739,975	1,370,172	0.243	333,136	
39	Dredge, Scallop	AA	GEN	NE	all	5,055,291	4,451,449	603,842	0.128	77,258	
40	Dredge, Scallop	AA	LIM	MA	all	84,161,452	69,222,452	14,939,000	0.125	1,864,896	
41	Dredge, Scallop	AA	LIM	NE	all	140,497,949	110,358,100	30,139,849	0.111	3,337,482	
42	Dredge, Scallop	OPEN	GEN	MA	all	15,015,503	12,051,591	2,963,912	0.097	286,370	
43	Dredge, Scallop	OPEN	GEN	NE	all	8,779,208	7,541,948	1,237,260	0.148	182,812	
44	Dredge, Scallop	OPEN	LIM	MA	all	62,681,838	56,629,542	6,052,295	0.096	579,227	
45	Dredge, Scallop	OPEN	LIM	NE	all	141,744,817	126,866,058	14,878,759	0.088	1,312,160	
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	6,659,240	6,651,575	7,665	0.260	1,992	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	3,996,203	3,987,192	9,011	0.733	6,607	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	66,329,205	66,193,957	135,248	0.683	92,333	
53	Pots and Traps, Fish	OPEN	all	MA	all	481,812	335,852	145,960	0.256	37,336	
54	Pots and Traps, Fish	OPEN	all	NE	all	347,401	181,143	166,258	0.179	29,720	
55	Pots and Traps, Conch	OPEN	all	MA	all	7,384	7,292	92	0.899	83	
56	Pots and Traps, Conch	OPEN	all	NE	all	1,519	1,077	442	0.599	265	
58	Pots and Traps, Lobster	OPEN	all	MA	all	254,875	177,963	76,912	1.148	88,300	
59	Pots and Traps, Lobster	OPEN	all	NE	all	154,458	50,383	104,075	0.659	68,587	
61	Pots and Traps, Crab	OPEN	all	MA	all	488,739	305,231	183,508	0.398	73,105	
62	Pots and Traps, Crab	OPEN	all	NE	all	4,023,966	2,893,361	1,130,605	0.233	263,871	
63	Beam Trawl	OPEN	all	MA	sm	30,000	30,000				P
65	Dredge, Other	OPEN	all	MA	all	0	0				P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	243,744,732	241,345,504	2,399,228	0.429	1,028,881	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	218,019,531	216,577,371	1,442,160	0.247	355,587	
Confidential fleets						2,640,668	2,148,638	492,031	0.178	87,703	
Other minor fleets						589,348	589,348				
TOTAL						1,340,569,332	1,186,363,217	154,206,116	0.036	5,621,211	

Table 6A The number of trips 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 trips, the number of minimum pilot trips, and the maximum number of trips needed for each fleet (2018 Trips Needed) for fish and invertebrate species groups based on July 2016 through June 2017 data. Bold red font indicates basis for fleet trips. "P" indicates fleets with "pilot" designation. Species group abbreviations are given in Table 1.

Row	Fleet Gear Type	Access Area	Trip	Region	Mesh Size	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Trips	Min Pilot Trips	2018 Trips Needed	Pilot
1	Longline, Bottom	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	50	0	0	0	32	12	50	
3	Hand Line	OPEN	all	MA	all	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	12	71	P
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	12	12	
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	1,165	0	446	349	0	346	220	204	165	0	0	74	12	1,165	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	280	49	0	47	109	71	0	0	72	12	280	
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	210	0	323	290	268	477	257	0	0	97	12	477	
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	2,122	0	0	129	63	155	75	113	198	0	0	101	12	2,122	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	12	12	
13	Otter Trawl, Scallop	OPEN	LIM	MA	sm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
16	Otter Trawl, Twin	OPEN	all	MA	lg	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
17	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9	
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	32	0	0	0	9	9	32	
25	Otter Trawl, Other	OPEN	all	MA	sm	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
26	Otter Trawl, Other	OPEN	all	MA	lg	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
27	Otter Trawl, Other	OPEN	all	NE	sm	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
28	Floating Trap	OPEN	all	MA	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
29	Floating Trap	OPEN	all	NE	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	398	0	0	0	40	12	398	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	73	0	0	0	45	12	73	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0	0	0	0	0	0	0	32	0	0	0	0	32	12	32	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	292	0	0	0	52	12	292	
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	0	0	0	0	0	0	70	0	0	18	0	0	0	0	62	12	70	

Table 6A, continued. The number of trips 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 trips, the number of minimum pilot trips, and the maximum number of trips needed for each fleet (2018 Trips Needed) for fish and invertebrate species groups based on July 2016 through June 2017 data. Bold red font indicates basis for fleet trips. "P" indicates fleets with "pilot" designation. Species group abbreviations are given in Table 1.

Row	Fleet Gear Type	Access Area	Trip	Region	Mesh Size	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Trips	Min Pilot Trips	2018 Trips Needed	Pilot
36	Purse Seine	OPEN	all	MA	all	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	7	P
37	Purse Seine	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9	
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	12	12	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	12	12	
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0	0	25	0	47	0	0	20	0	0	0	0	16	12	47	
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0	0	42	0	44	44	0	15	0	51	0	0	20	12	51	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0	0	0	0	0	0	0	11	0	0	0	0	51	12	12	
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0	0	0	0	71	0	0	43	0	0	0	0	56	12	71	
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0	0	0	0	5	0	0	6	0	0	0	0	13	12	12	
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0	0	0	0	23	64	0	19	0	181	0	0	19	12	181	
46	Danish Seine	OPEN	all	MA	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
47	Danish Seine	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	9	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12	12	
51	Pots and Traps, Other	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
52	Pots and Traps, Other	OPEN	all	NE	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	12	12	
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	6	0	0	16	9	9	
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	12	12	
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	9	9	
57	Pots and Traps, Hagfish	OPEN	all	NE	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	12	12	
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	334	12	12	
60	Weir	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0	5	0	0	0	0	0	0	0	0	0	0	12	12	12	
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0	10	0	0	0	0	0	0	0	0	0	0	12	12	12	
63	Beam Trawl	OPEN	all	MA	sm	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
64	Beam Trawl	OPEN	all	NE	lg	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
65	Dredge, Other	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
66	Dredge, Urchin	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	12	12	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0	0	0	0	103	0	0	4	0	0	0	0	43	12	103	
	Totals					273	273	273	3,575	340	929	1,394	816	1,064	1,051	2,021	1,202	273	273	1,780	633	5,948	

Table 6B 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 (2018 Sea Days Needed) for fish and invertebrate species groups based on July 2016 through June 2017 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	Region	Mesh Size	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Days	Min Pilot Days	2018 Sea Days Needed	Pilot
1	Longline, Bottom	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	84	84	84	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	53	0	0	0	34	14	53	
3	Hand Line	OPEN	all	MA	all	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	13	75	P
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63	13	13	
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	2,212	0	847	662	0	657	418	387	314	0	0	141	26	2,212	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	590	104	0	99	229	149	0	0	152	28	590	
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	486	0	747	671	621	1,105	596	0	0	224	33	1,105	
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	6,059	0	0	367	180	443	213	323	565	0	0	288	35	6,059	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	P
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	27	27	
13	Otter Trawl, Scallop	OPEN	LIM	MA	sm	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	P
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	P
15	Otter Trawl, Twin	OPEN	all	MA	sm	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	P
16	Otter Trawl, Twin	OPEN	all	MA	lg	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	P
17	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	67	67	
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	P
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	P
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	P
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	P
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	P
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	P
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	208	0	0	0	57	57	208	
25	Otter Trawl, Other	OPEN	all	MA	sm	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	P
26	Otter Trawl, Other	OPEN	all	MA	lg	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	P
27	Otter Trawl, Other	OPEN	all	NE	sm	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	P
28	Floating Trap	OPEN	all	MA	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	P
29	Floating Trap	OPEN	all	NE	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	402	0	0	0	41	12	402	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	75	0	0	0	46	13	75	
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	0	0	0	0	0	0	0	0	0	0	37	0	0	0	36	14	37	
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	P
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	405	0	0	0	74	21	405	
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	0	0	0	0	0	0	105	0	0	28	0	0	0	0	93	19	105	

Table 6B, 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 (2018 Sea Days Needed) for fish and invertebrate species groups based on July 2016 through June 2017 data. Bold red font indicates basis for fleet sea days. "P" indicates fleets with "pilot" designation. Species group abbreviations are given in Table 1.

	Fleet Gear Type	Access Area	Trip	Region	Mesh Size	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Days	Min Pilot Days	2018 Sea Days Needed	Pilot
36	Purse Seine	OPEN	all	MA	all	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	6	7	P
37	Purse Seine	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	18	18	
38	Dredge, Scallop	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	25	25	
39	Dredge, Scallop	AA	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	29	29	
40	Dredge, Scallop	AA	LIM	MA	all	0	0	0	0	196	0	371	0	0	157	0	0	0	0	126	95	371	
41	Dredge, Scallop	AA	LIM	NE	all	0	0	0	0	370	0	384	388	0	132	0	448	0	0	172	109	448	
42	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0	0	0	0	0	0	0	21	0	0	0	0	98	23	23	
43	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0	0	0	0	109	0	0	66	0	0	0	0	86	19	109	
44	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0	0	0	0	46	0	0	60	0	0	0	0	119	110	110	
45	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0	0	0	0	229	629	0	188	0	1,772	0	0	188	115	1,772	
46	Danish Seine	OPEN	all	MA	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
47	Danish Seine	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	43	43	
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16	16	
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	44	44	
51	Pots and Traps, Other	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
52	Pots and Traps, Other	OPEN	all	NE	all	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	P
53	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	12	12	
54	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	6	0	0	16	9	9	
55	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	12	12	
56	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	9	9	
57	Pots and Traps, Hagfish	OPEN	all	NE	all	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	P
58	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	16	16	
59	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	447	17	17	
60	Weir	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
61	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0	10	0	0	0	0	0	0	0	0	0	0	30	30	30	
62	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0	68	0	0	0	0	0	0	0	0	0	0	80	80	80	
63	Beam Trawl	OPEN	all	MA	sm	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	P
64	Beam Trawl	OPEN	all	NE	lg	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	P
65	Dredge, Other	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	P
66	Dredge, Urchin	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	P
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	24	24	
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0	0	0	0	151	0	0	7	0	0	0	0	63	18	151	
					Totals	782	782	782	9,131	1,348	2,115	3,796	2,830	2,553	2,829	3,969	4,632	782	782	4,036	2,062	15,599	

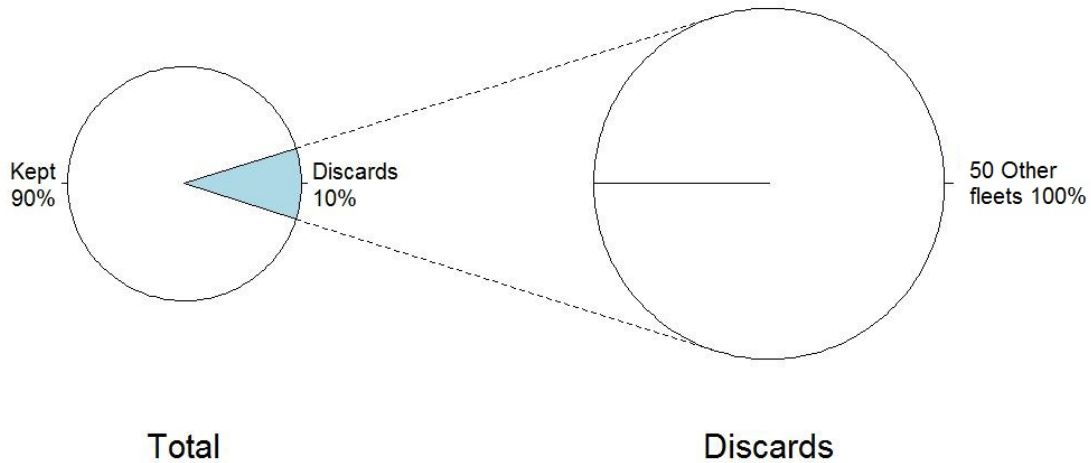
Table 7 Number of sea days, trips, and percentage of trips (based upon previous industry activity) needed to achieve a 30% coefficient of variation of the discard estimate, by fleet and species group, based on July 2016 through June 2017 data. See Table 1 for species group abbreviations. MPC=minimum pilot coverage.

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Species Group	Sea Days	Trips	% of Trips
2	Longline, Bottom	OPEN	all	NE	all	DOG	53	50	3
5	Otter Trawl	OPEN	all	MA	sm	RCRAB	2,212	1,165	31
						SBM	847	446	12
						MONK	662	349	9
						GFS	657	346	9
						SKATE	418	220	6
						DOG	387	204	6
						FSB	314	165	4
6	Otter Trawl	OPEN	all	MA	lg	MONK	590	280	8
						DOG	229	109	3
						FSB	149	71	2
						GFL	104	49	1
						SKATE	99	47	1
7	Otter Trawl	OPEN	all	NE	sm	DOG	1,105	477	10
						GFL	747	323	7
						GFS	671	290	6
						SKATE	621	268	6
						FSB	596	257	5
						SBM	486	210	4
8	Otter Trawl	OPEN	all	NE	lg	RCRAB	6,059	2,122	42
						FSB	565	198	4
						GFS	443	155	3
						MONK	367	129	3
						DOG	323	113	2
						SKATE	213	75	2
						GFL	180	63	1
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	DOG	208	32	18
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	DOG	402	398	20
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	DOG	75	73	3
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	SKATE	37	32	2
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	DOG	405	292	11
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	MONK	105	70	2
						SKATE	28	18	1
40	Dredge, Scallop	AA	LIM	MA	all	MONK	371	47	6
						SCAL	196	25	3
						SKATE	157	20	3
41	Dredge, Scallop	AA	LIM	NE	all	FSB	448	51	6
						GFL	388	44	5
						MONK	384	44	5
						SCAL	370	42	5
						SKATE	132	15	2
42	Dredge, Scallop	OPEN	GEN	MA	all	MPC	23	12	1
						SKATE	21	11	<1

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 2016 through June 2017 data. See Table 1 for species group abbreviations. MPC=Minimum Pilot Coverage.

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Species Group	Sea Days	Trips	% of Trips
43	Dredge, Scallop	OPEN	GEN	NE	all	MONK	109	71	3
						SKATE	66	43	2
44	Dredge, Scallop	OPEN	LIM	MA	all	MPC	110	12	3
						SKATE	60	6	1
						MONK	46	5	1
45	Dredge, Scallop	OPEN	LIM	NE	all	FSB	1,772	181	19
						GFL	629	64	7
						MONK	229	23	3
						SKATE	188	19	2
54	Pots and Traps, Fish	OPEN	all	NE	all	MPC	9	9	1
						FSB	6	6	1
61	Pots and Traps, Crab	OPEN	all	MA	all	MPC	30	12	13
						RCRAB	10	5	6
62	Pots and Traps, Crab	OPEN	all	NE	all	MPC	80	12	20
						RCRAB	68	10	16
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	MONK	151	103	5
						SKATE	7	4	<1

SPECIES: BLUEFISH



SPECIES: FLUKE - SCUP - BLACK SEA BASS

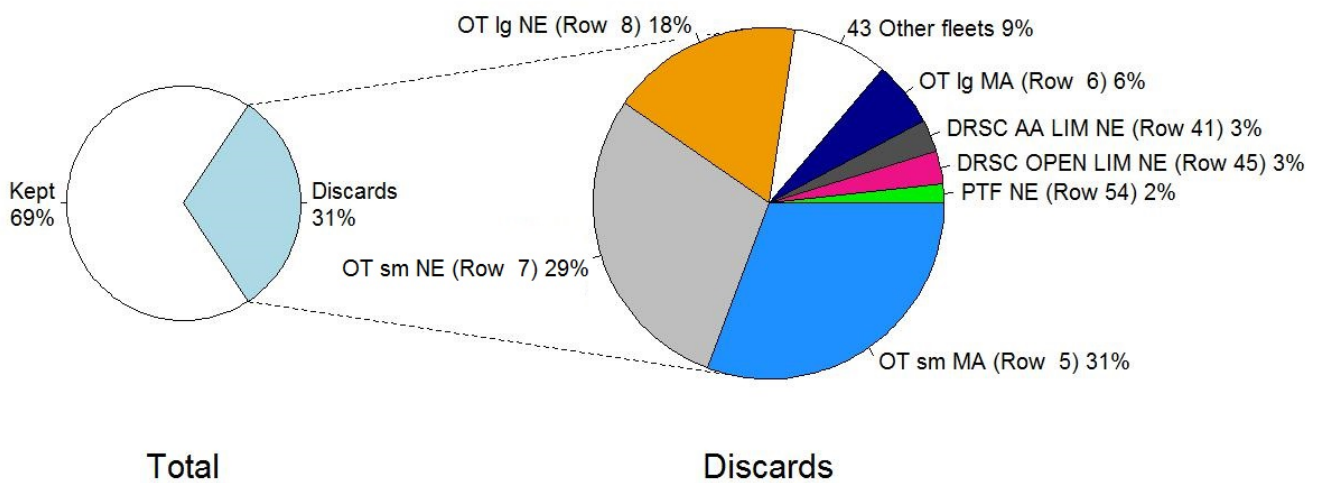
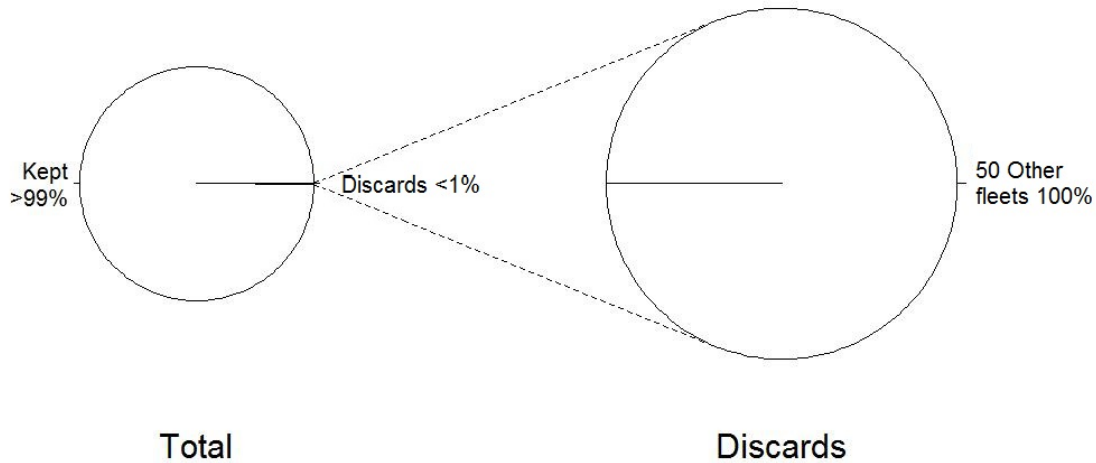


Figure 1A Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. Because percentages 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

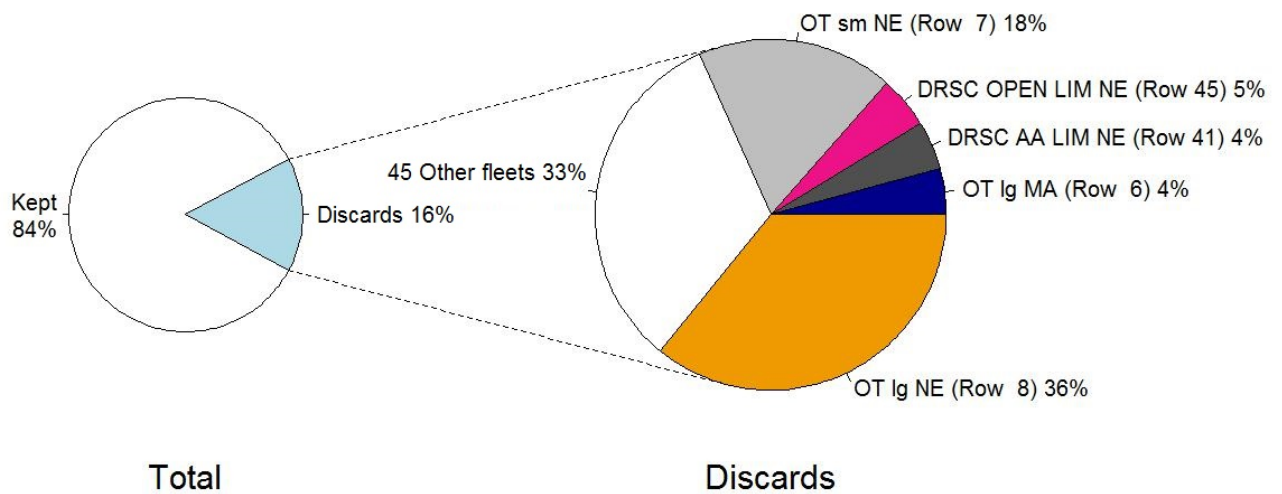
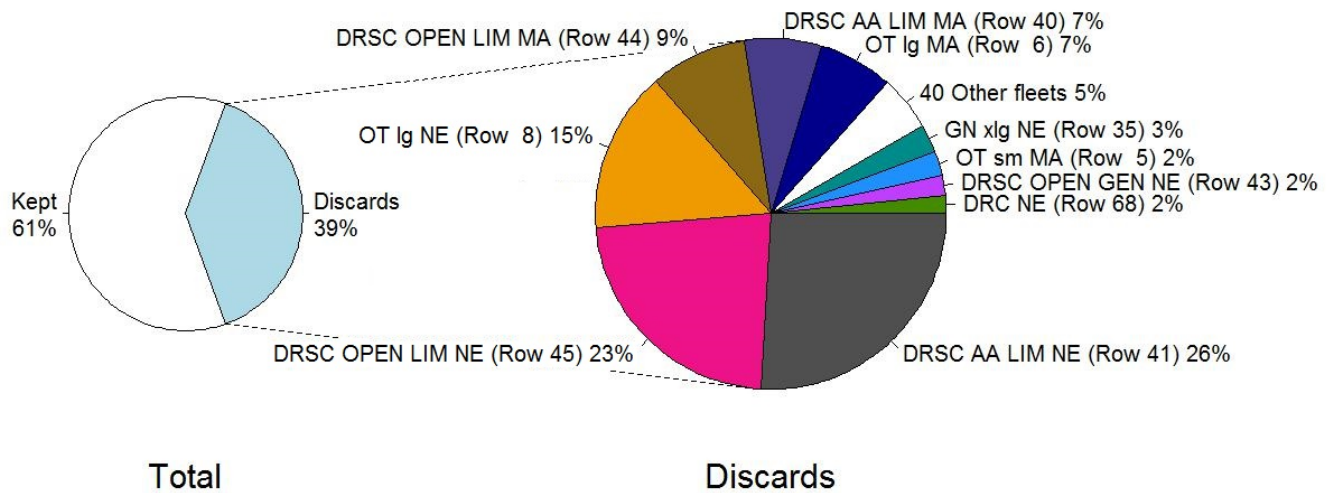


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. 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 DEEPSEA CRAB

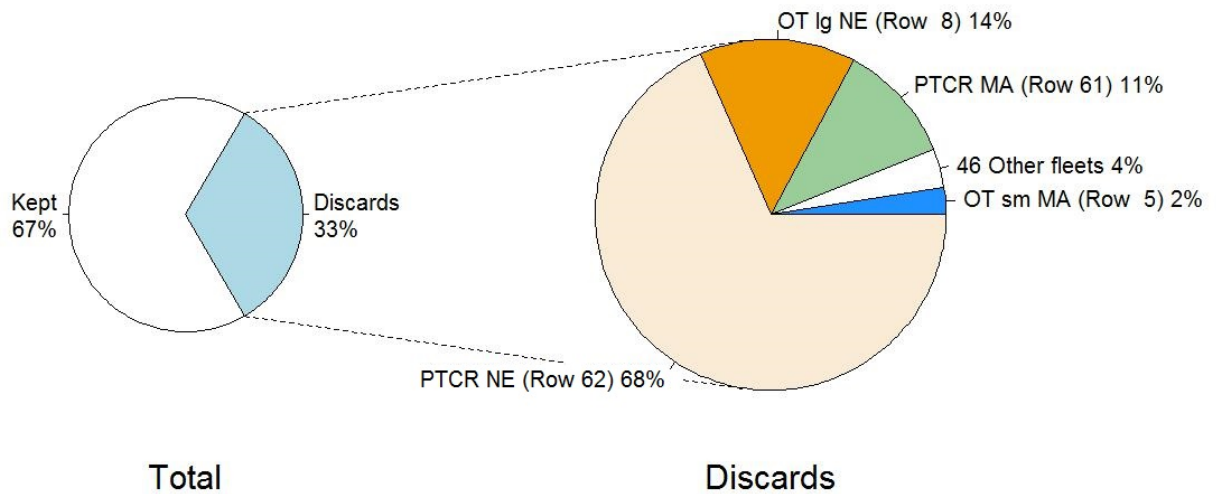
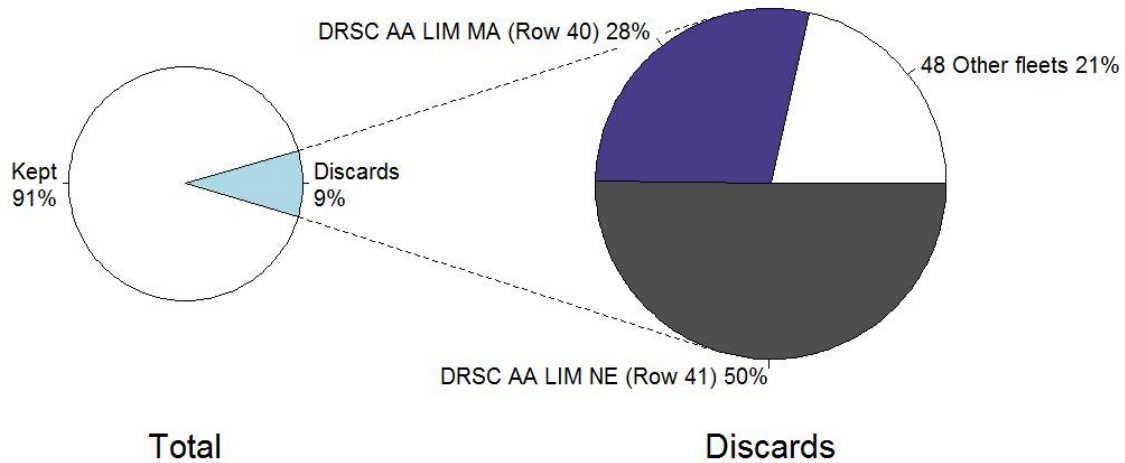


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. 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

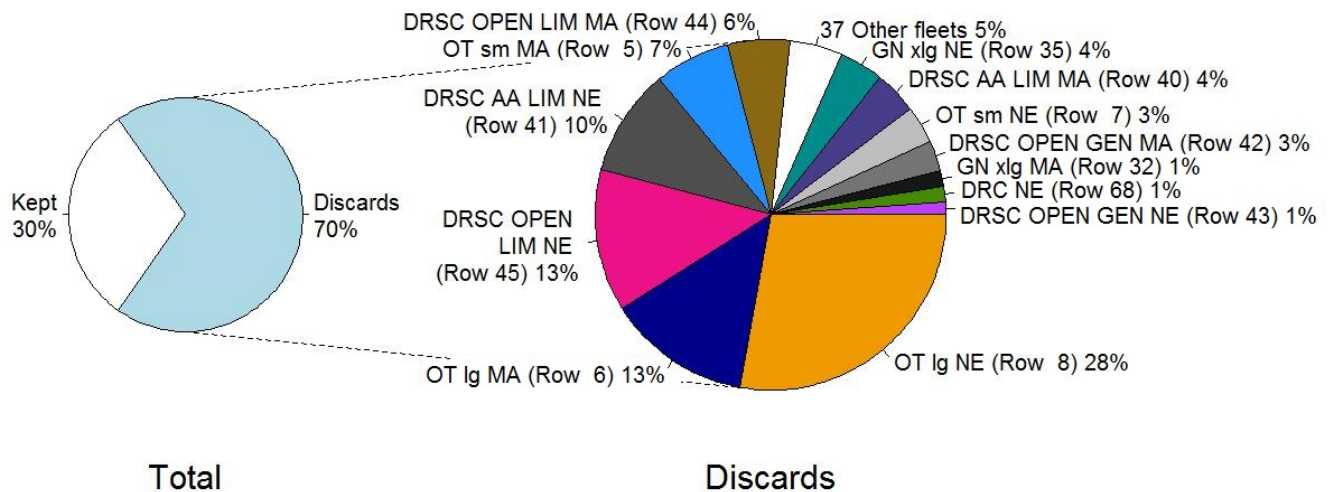
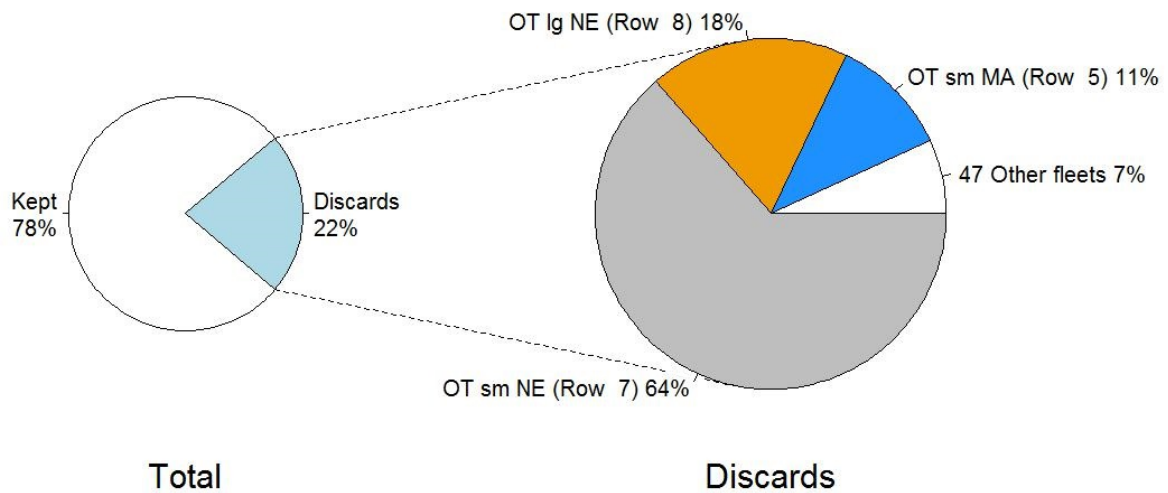


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. 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 GROUNDFISH



SPECIES: SPINY DOGFISH

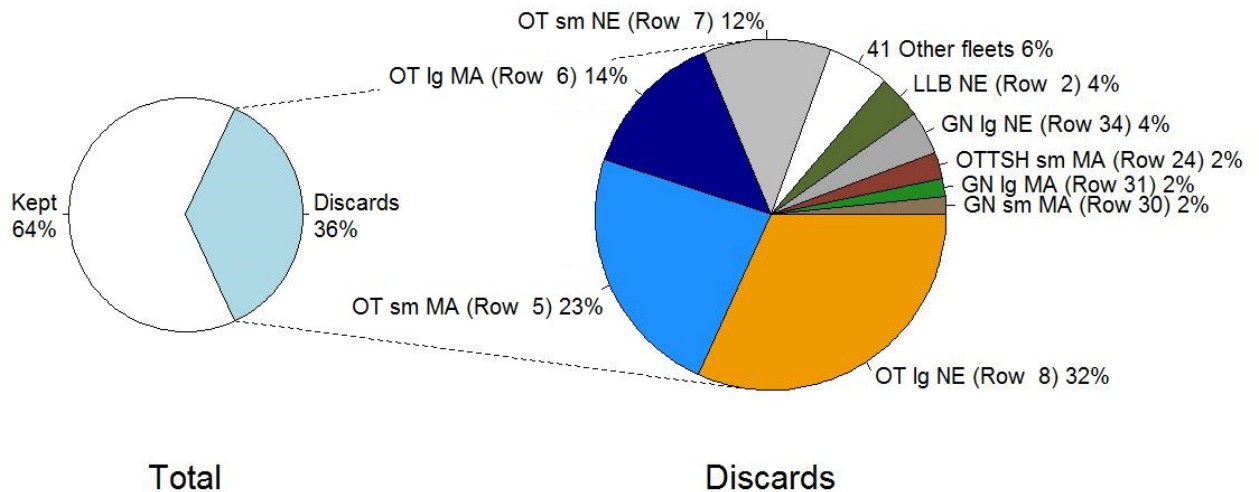
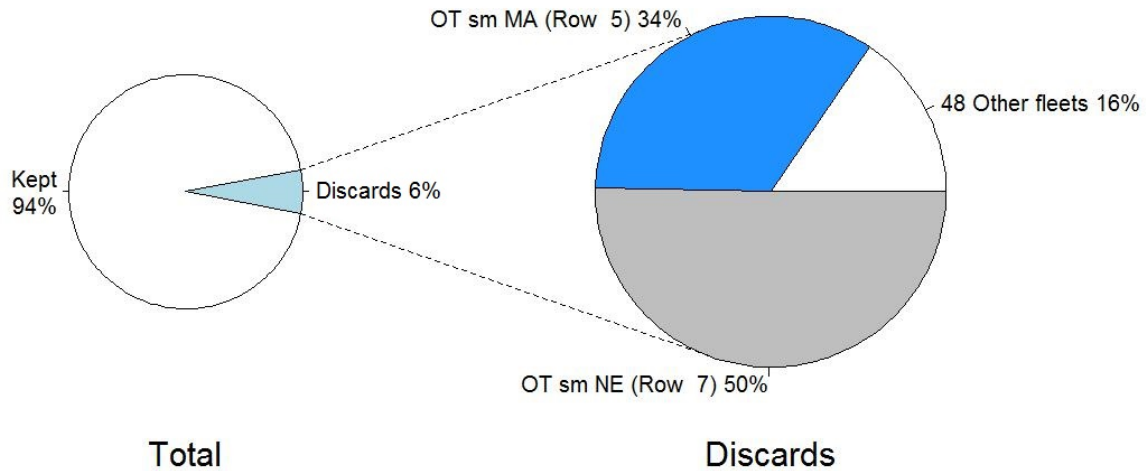


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. 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

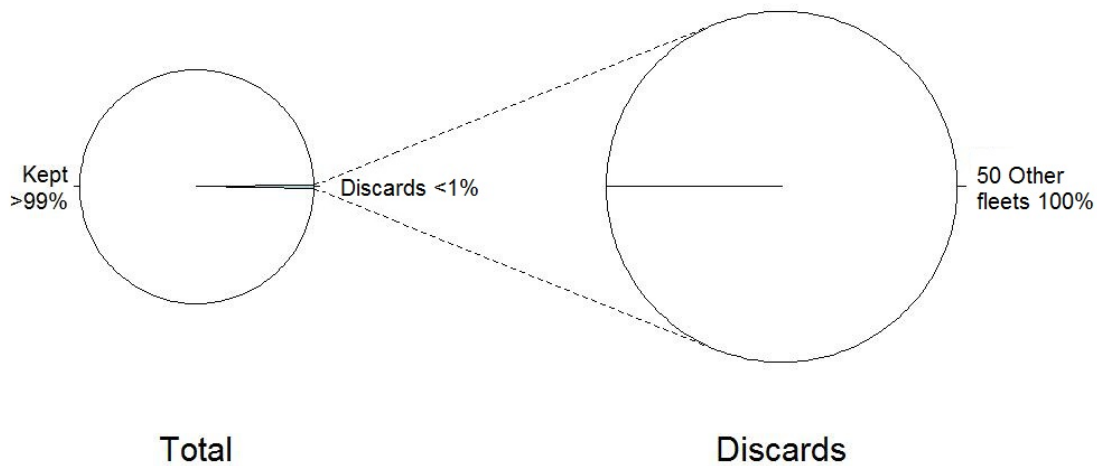


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. 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

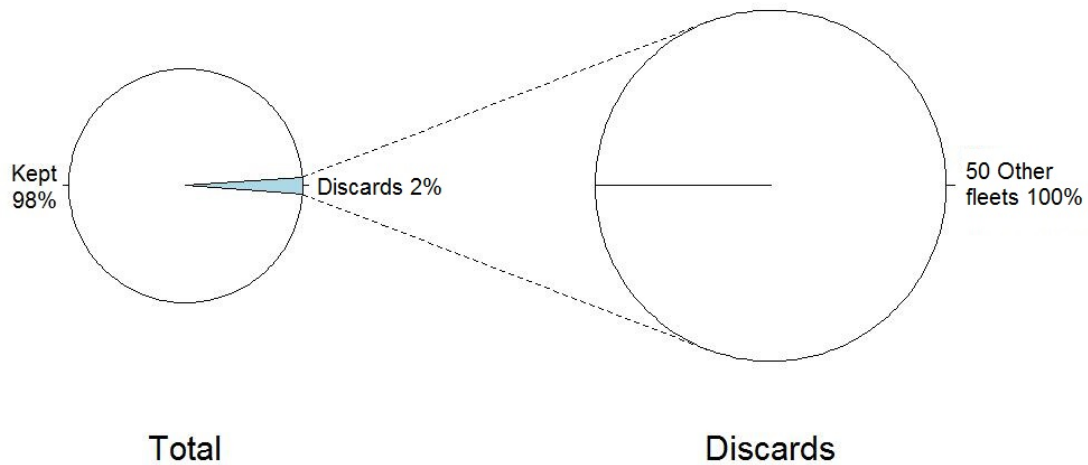
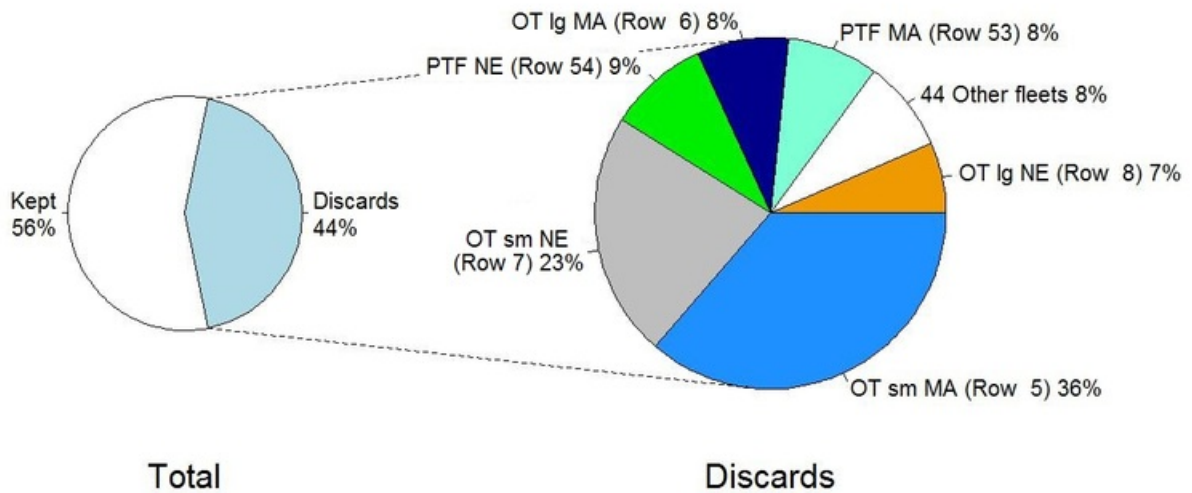


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2016 through June 2017 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.
Top: tilefish.

SPECIES: BLACK SEA BASS



SPECIES: FLUKE

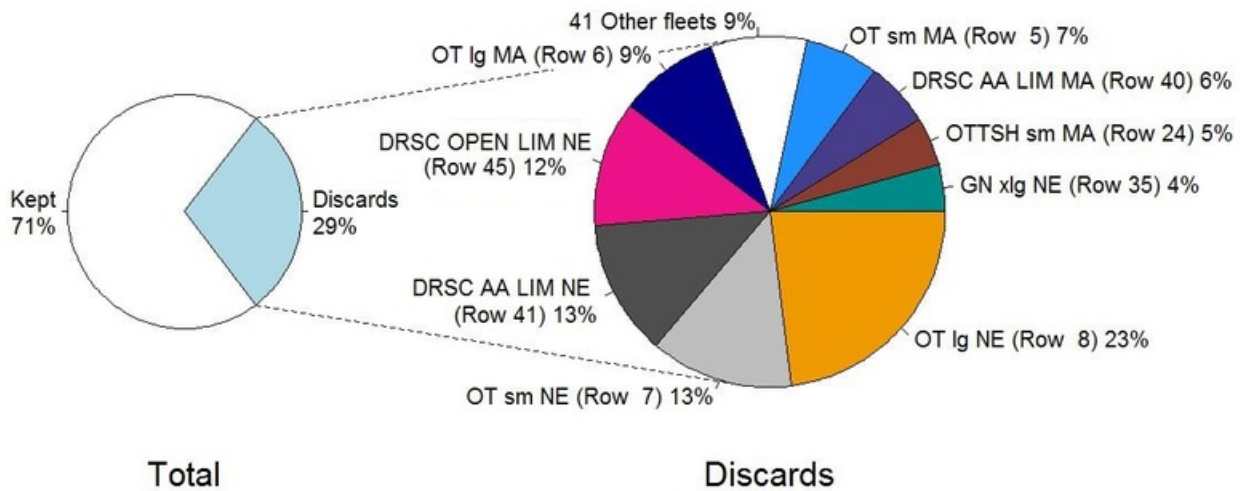
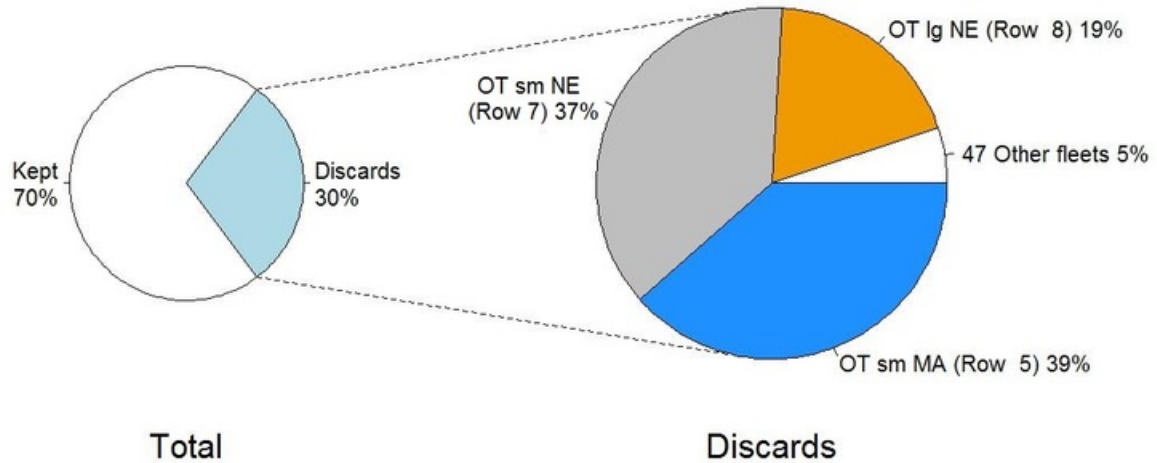


Figure 1B Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because percentages 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

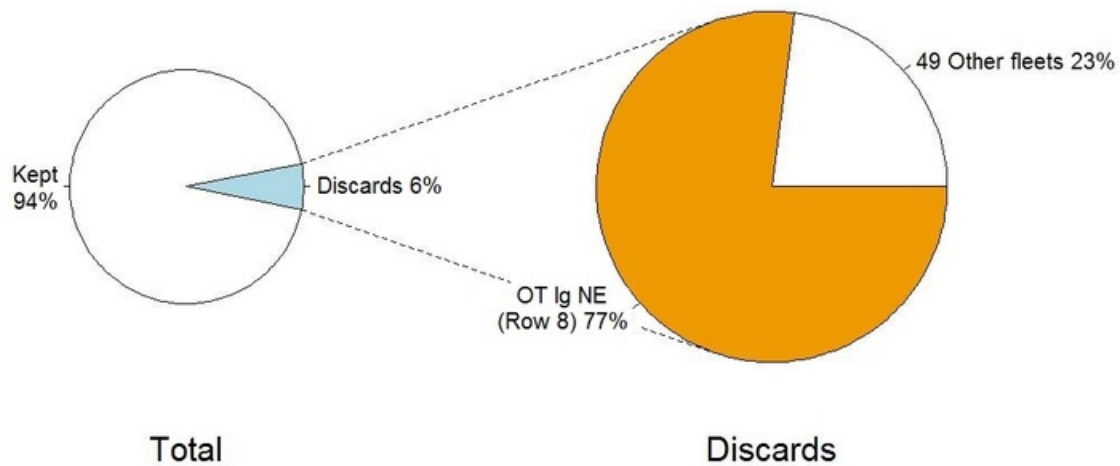
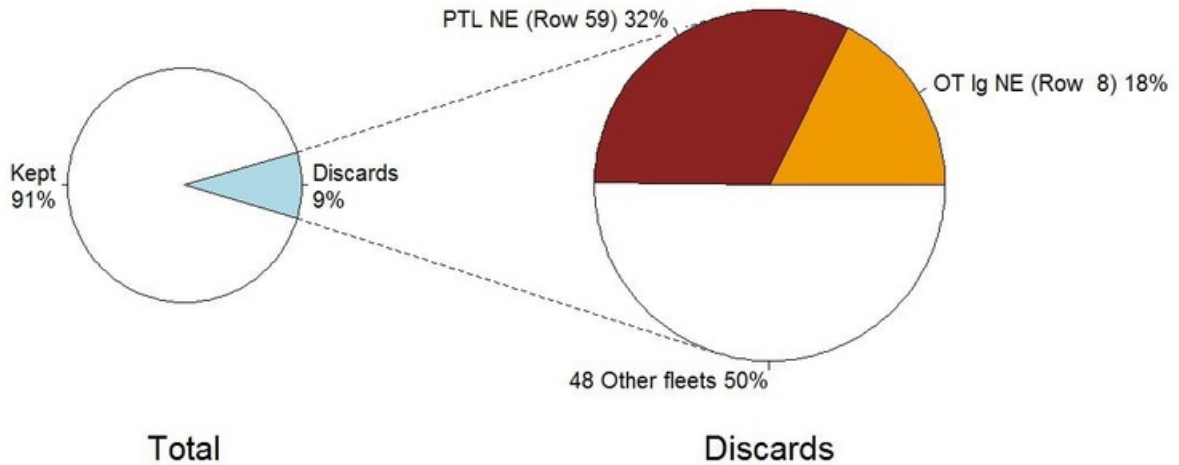


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

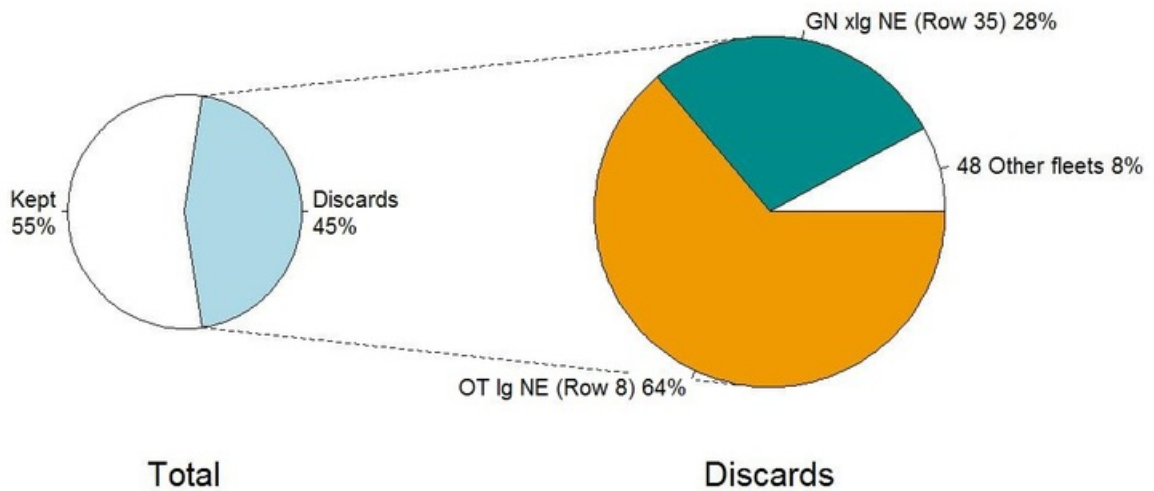
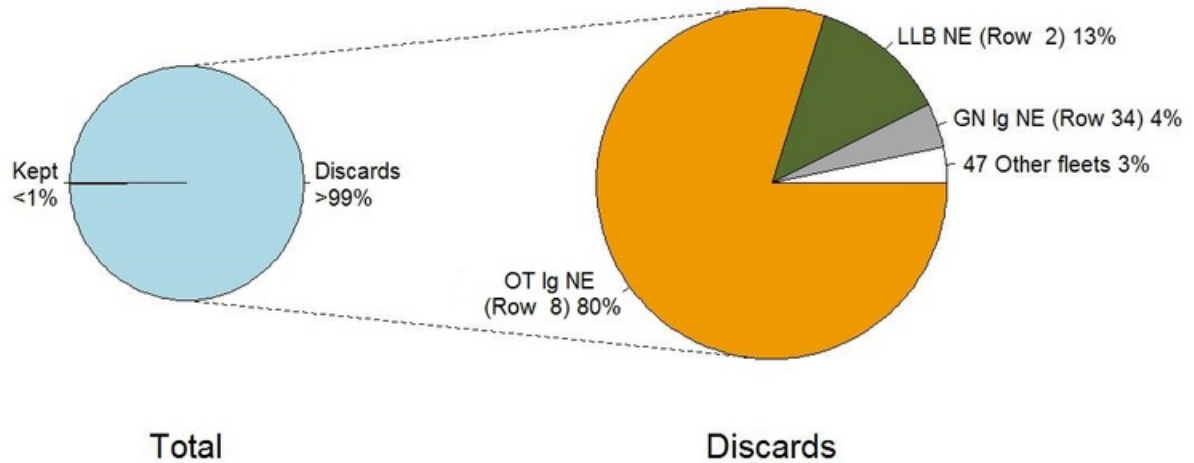


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

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

SPECIES: ATLANTIC WOLFFISH



SPECIES: HADDOCK

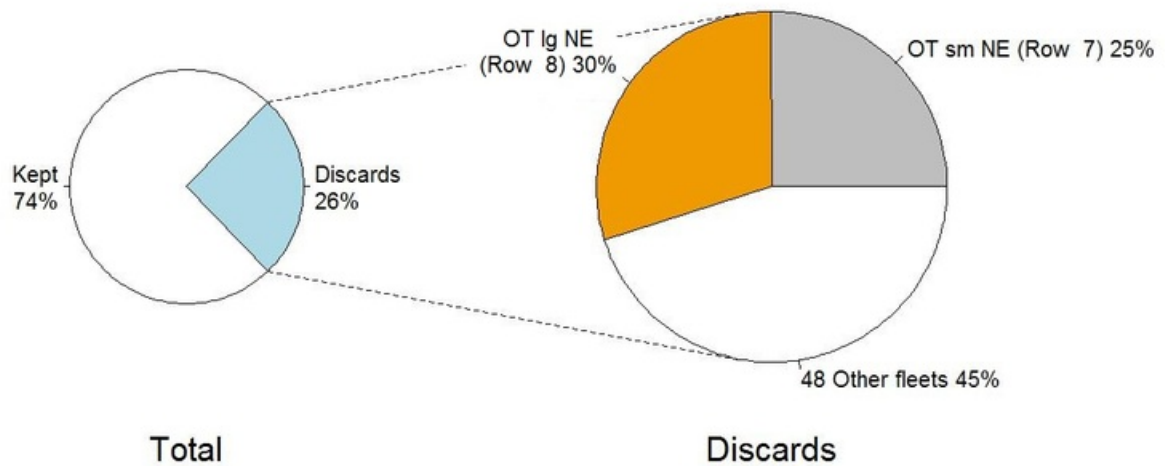
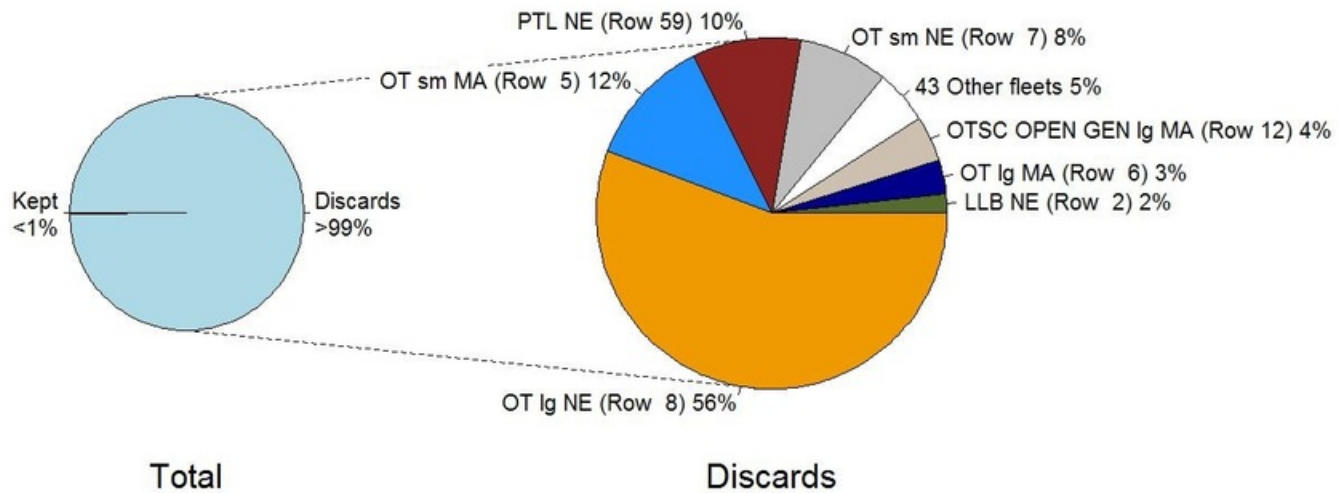


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

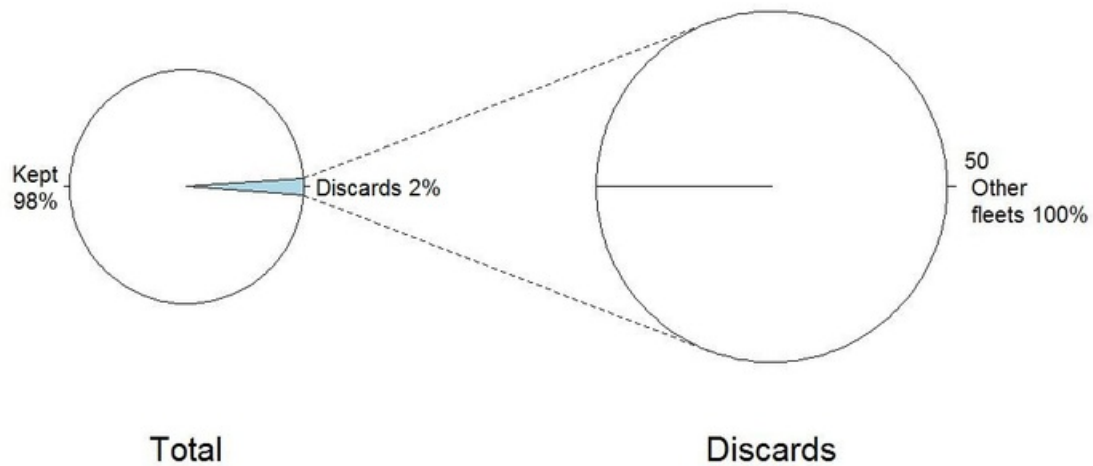
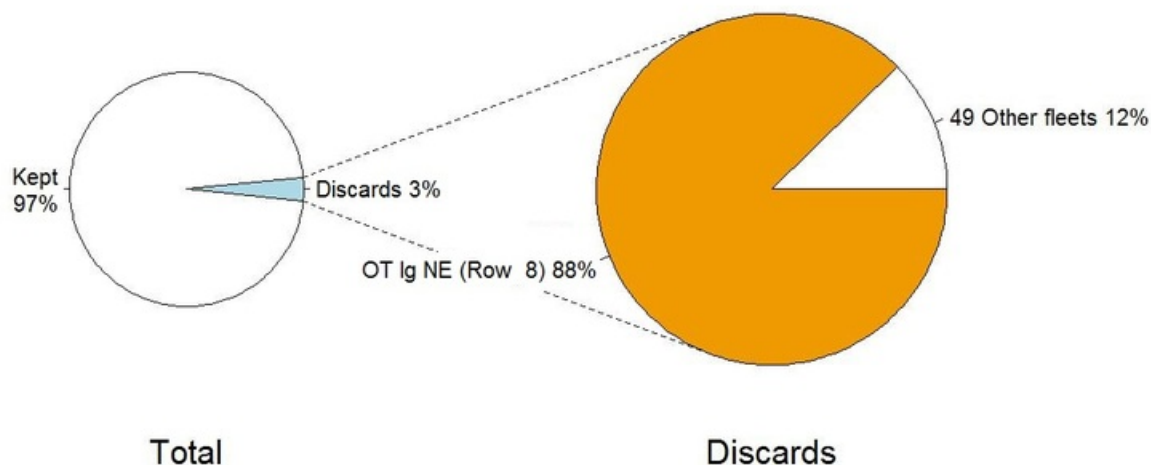


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

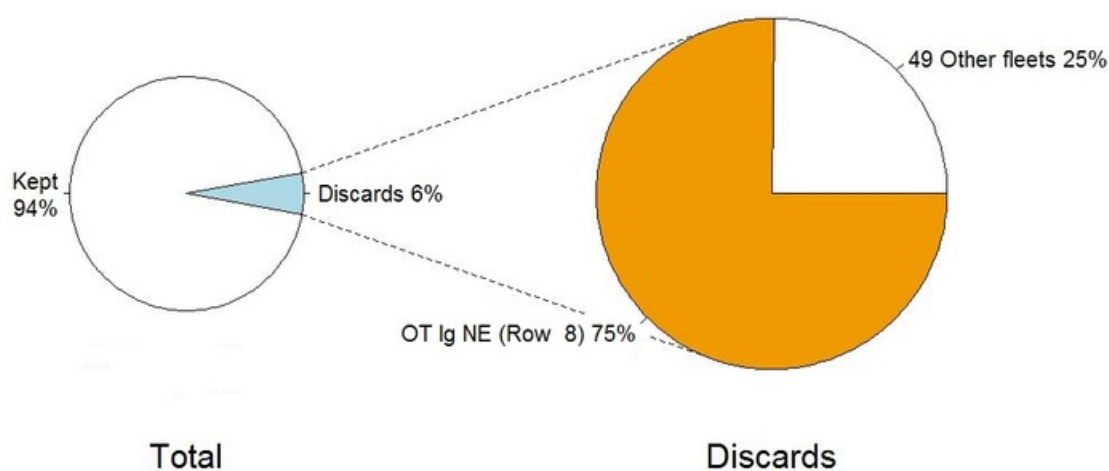
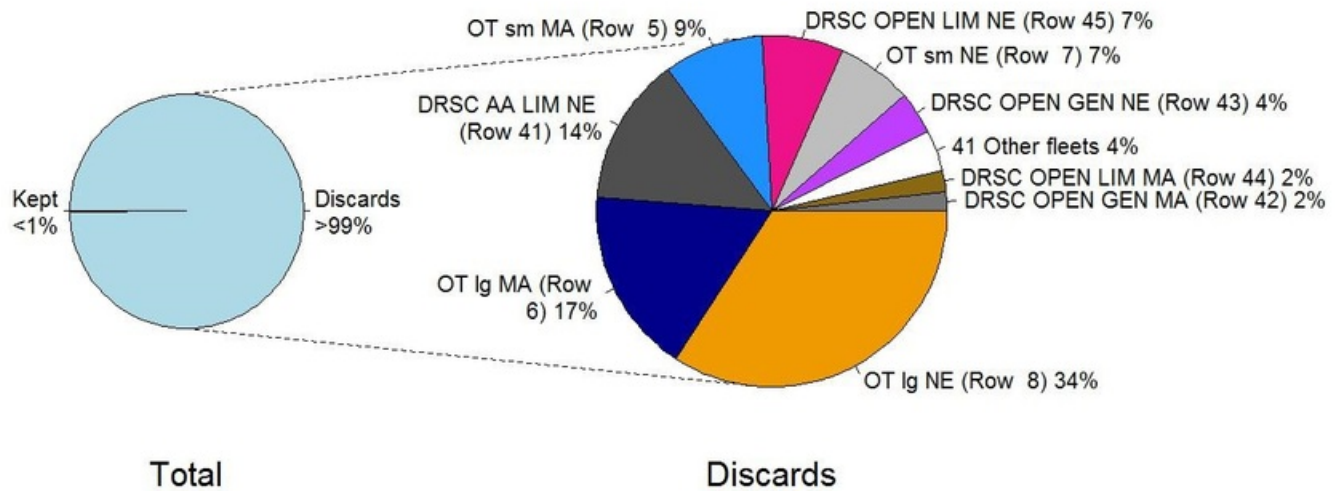


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

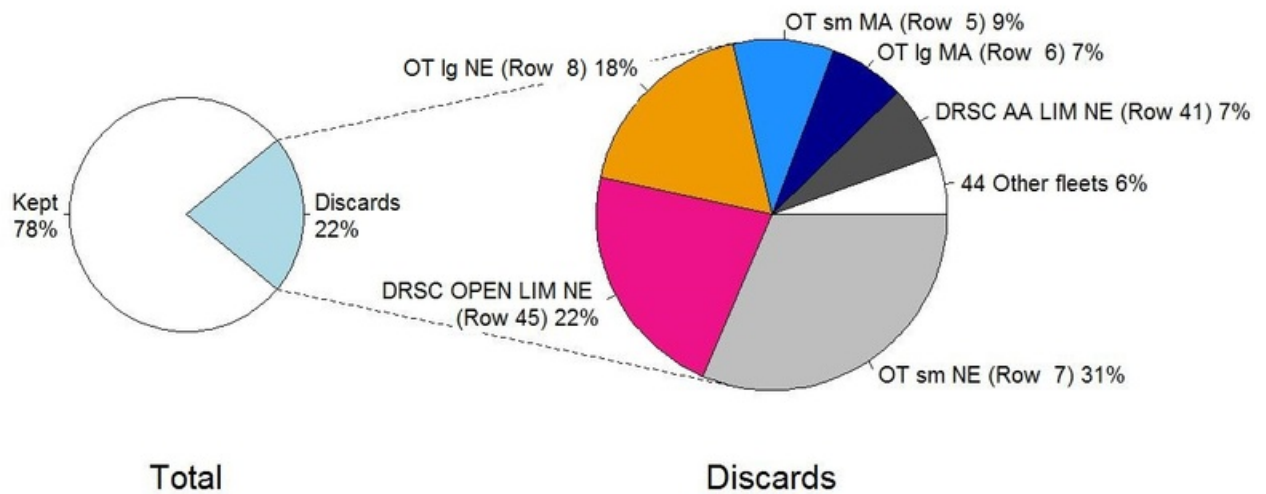
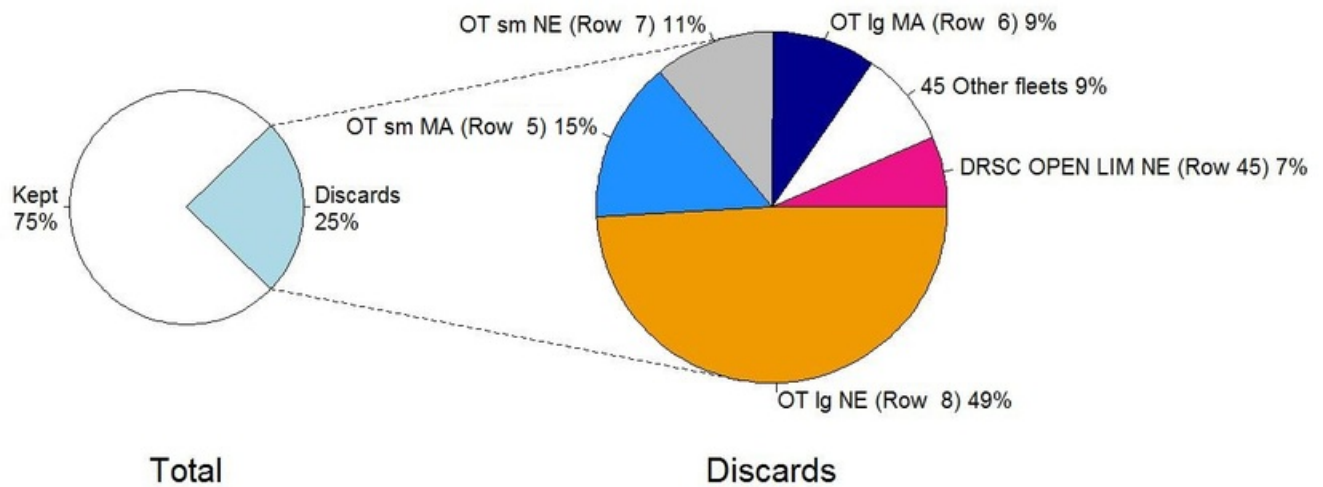


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

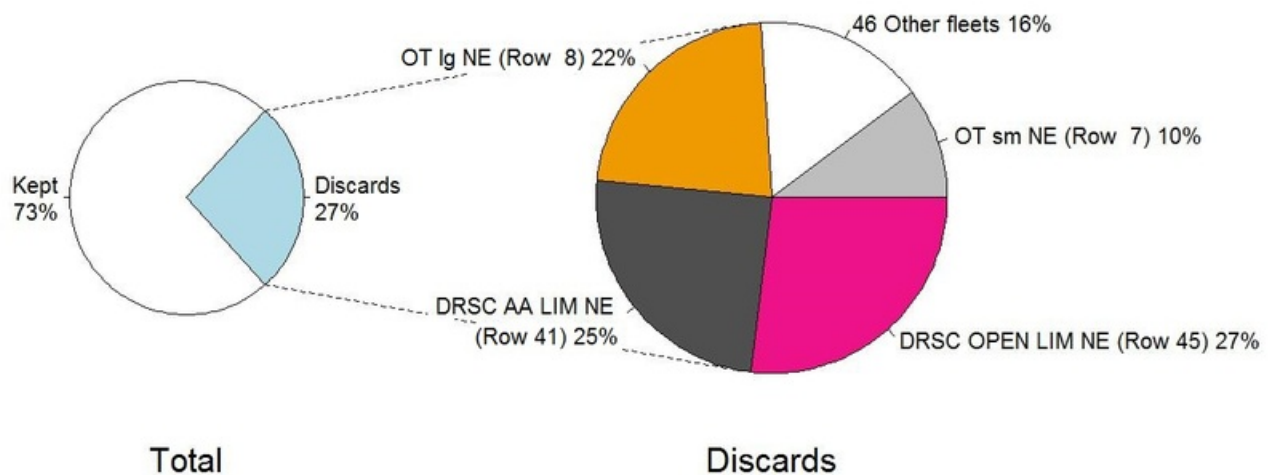
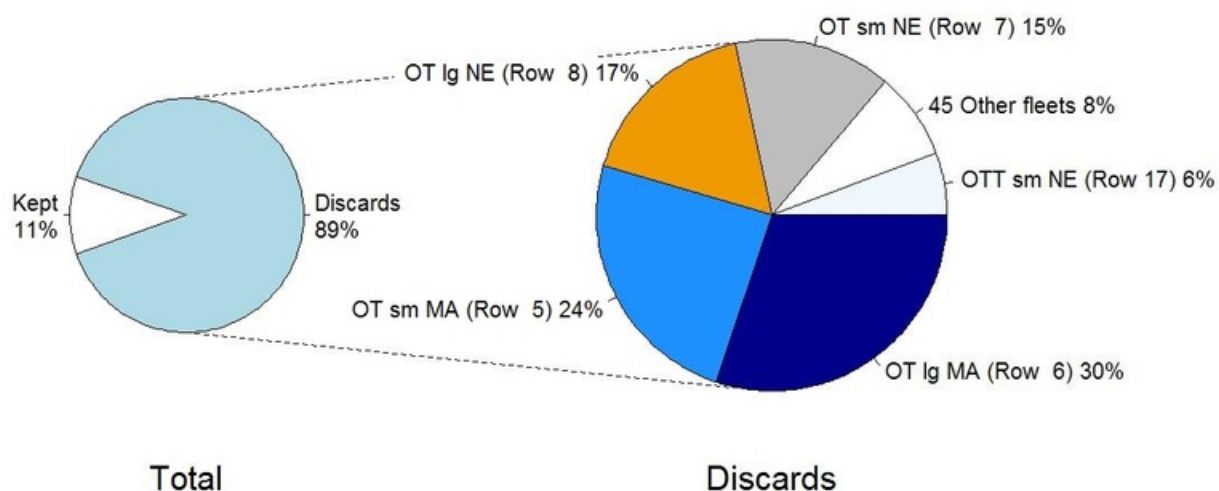


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Top: witch flounder (*Glyptocephalus cynoglossus*); bottom: yellowtail flounder (*Limanda ferruginea*).

SPECIES: OFFSHORE HAKE



SPECIES: RED HAKE

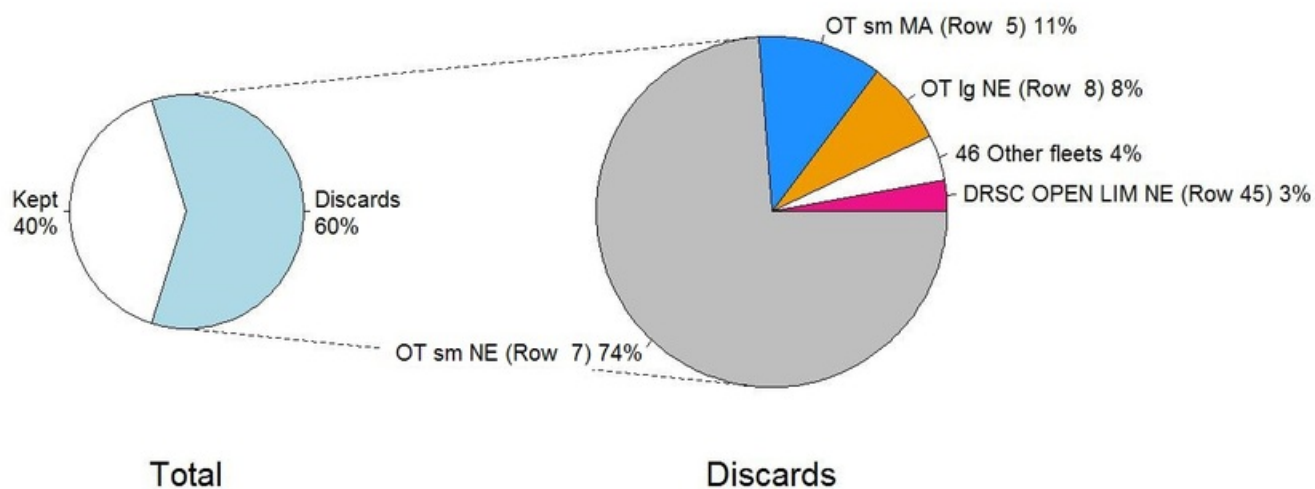
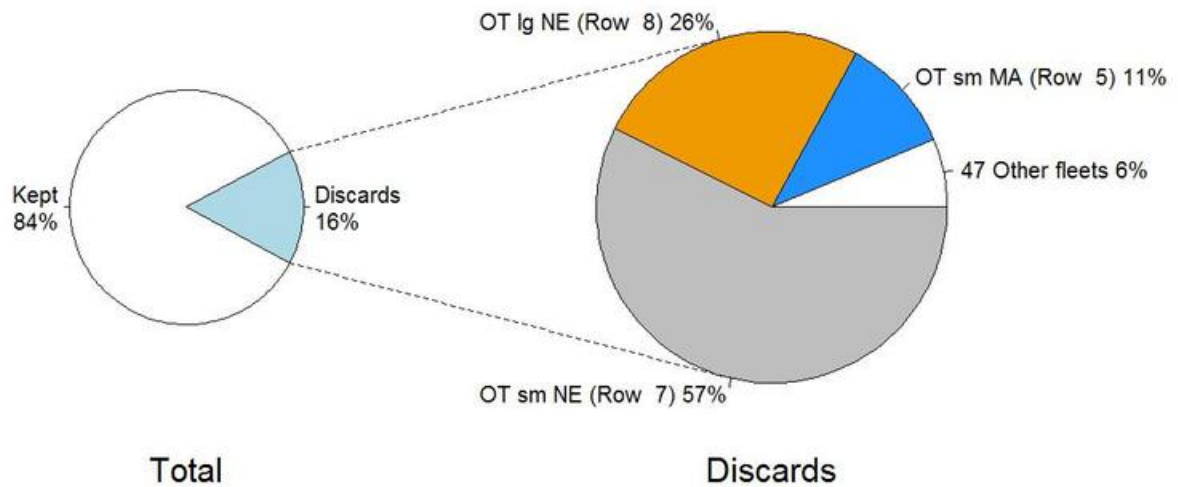


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

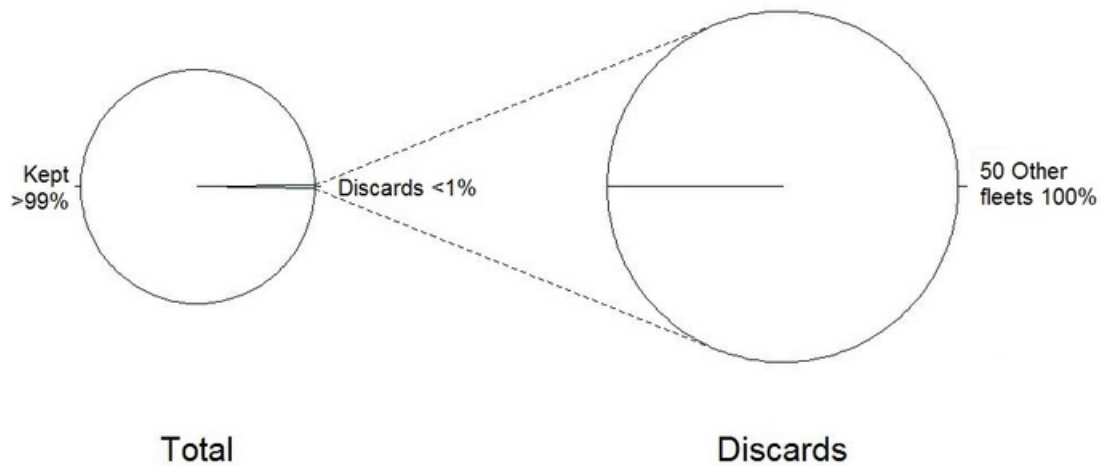
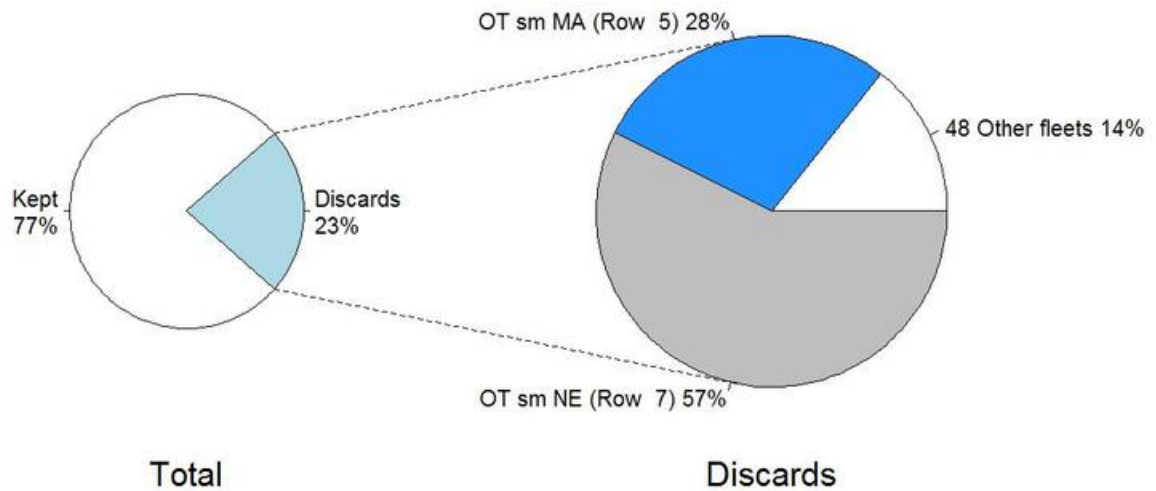


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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

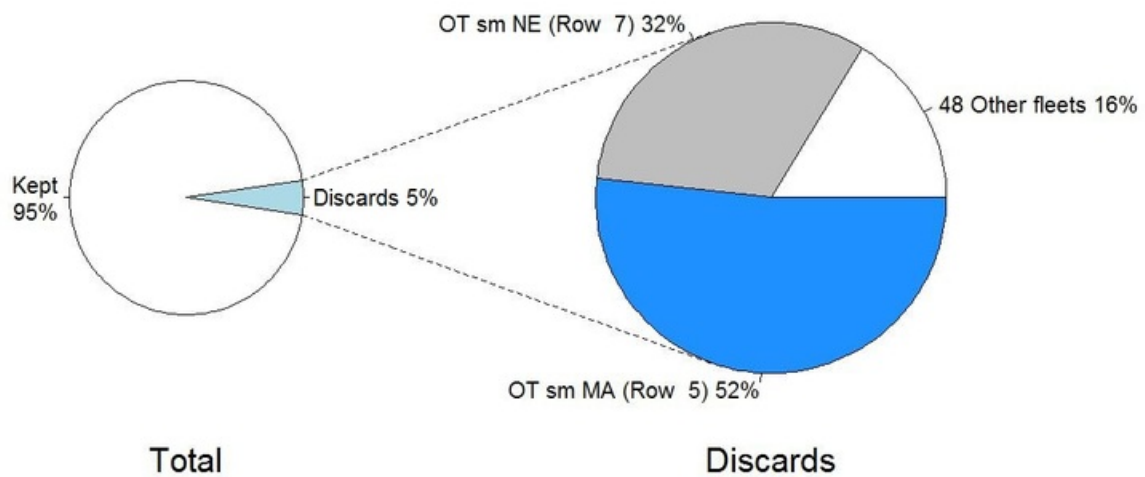
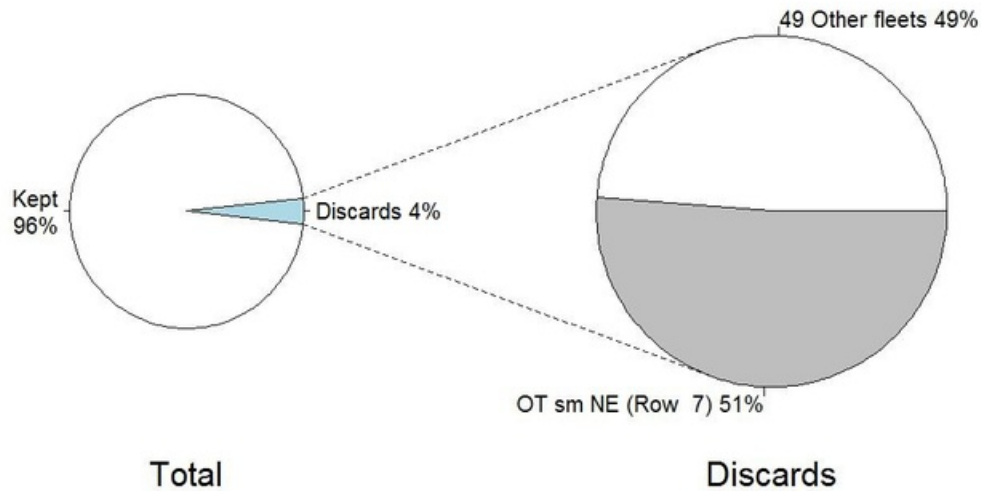


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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



SPECIES: BLUELINE TILEFISH

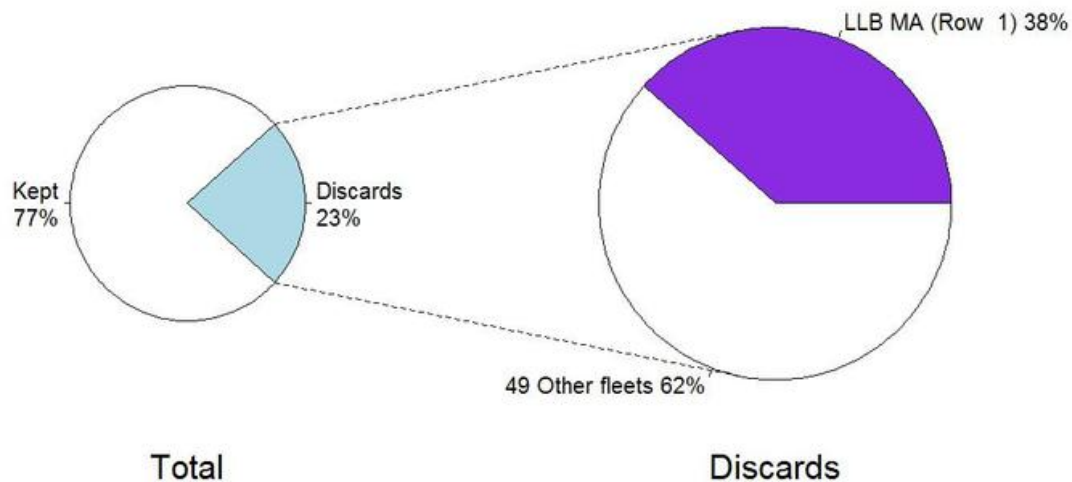


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because 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*); bottom: blueline tilefish (*Caulolatilus microps*).

SPECIES: GOLDEN TILEFISH

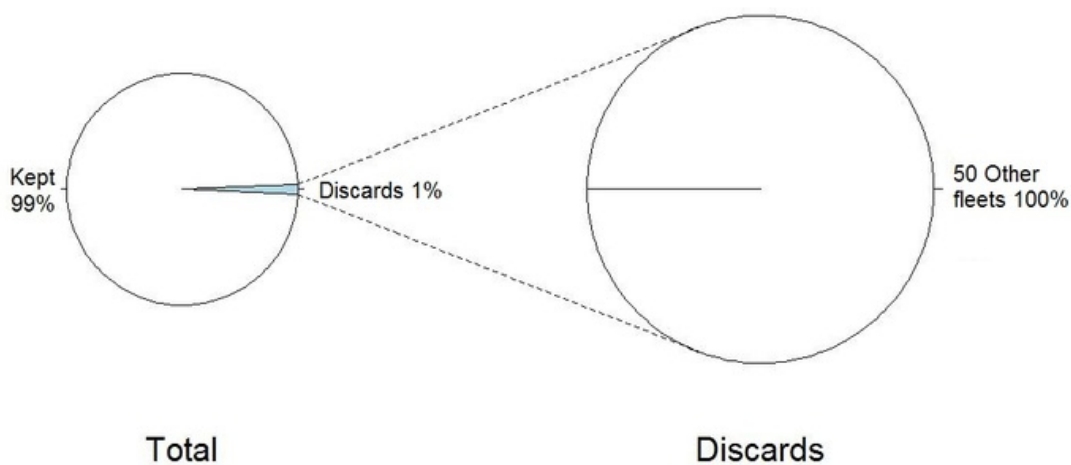
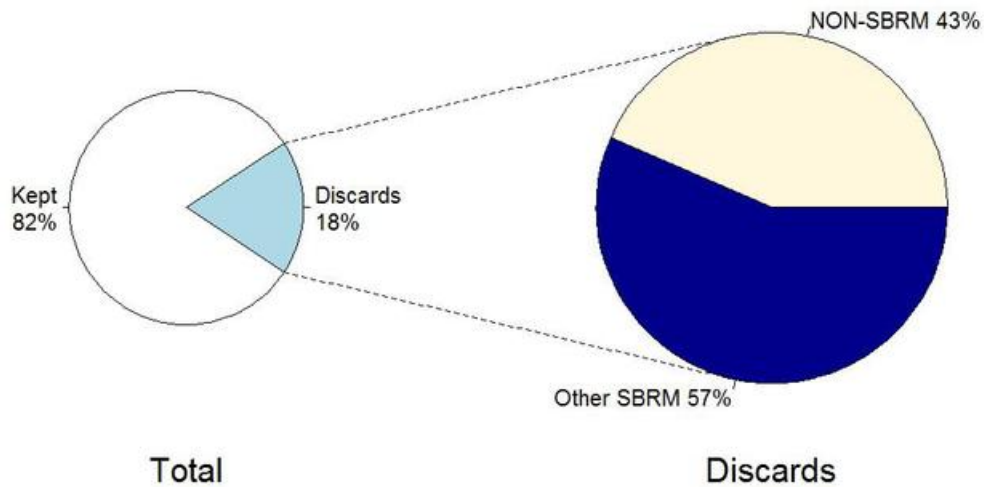


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.

Top: golden tilefish (*Lopholatilus chamaeleonticeps*)

FLEET: Longline, Bottom OPEN all MA all (Row 1)



FLEET: Longline, Bottom OPEN all NE all (Row 2)

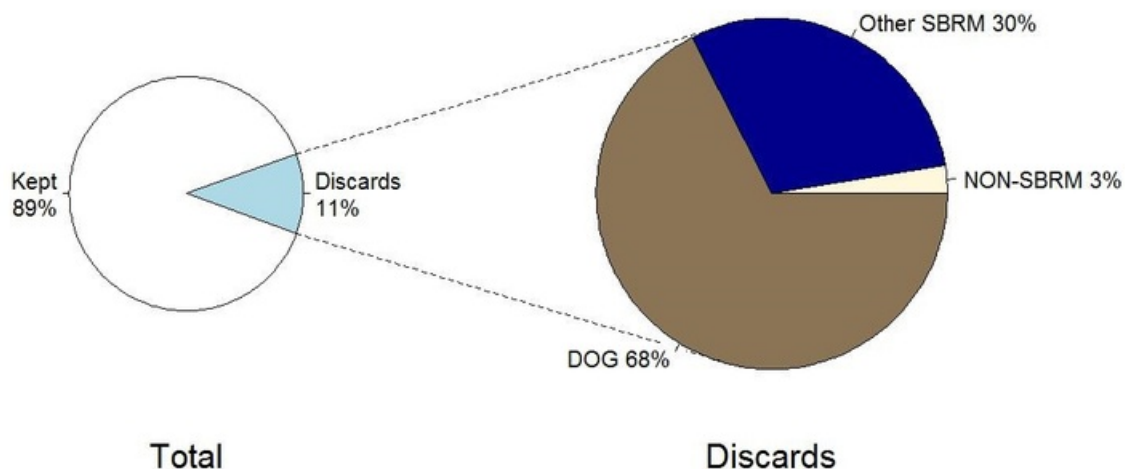
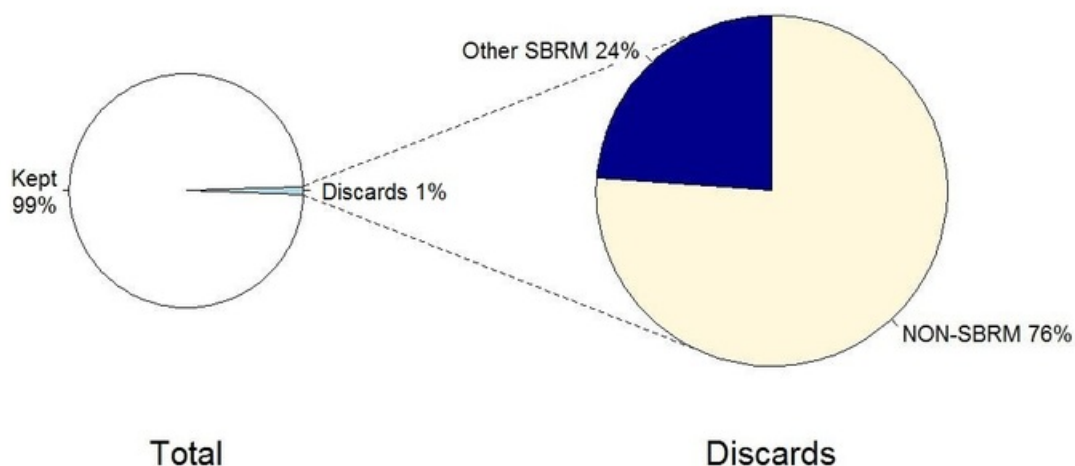


Figure 2 Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they may not always 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)

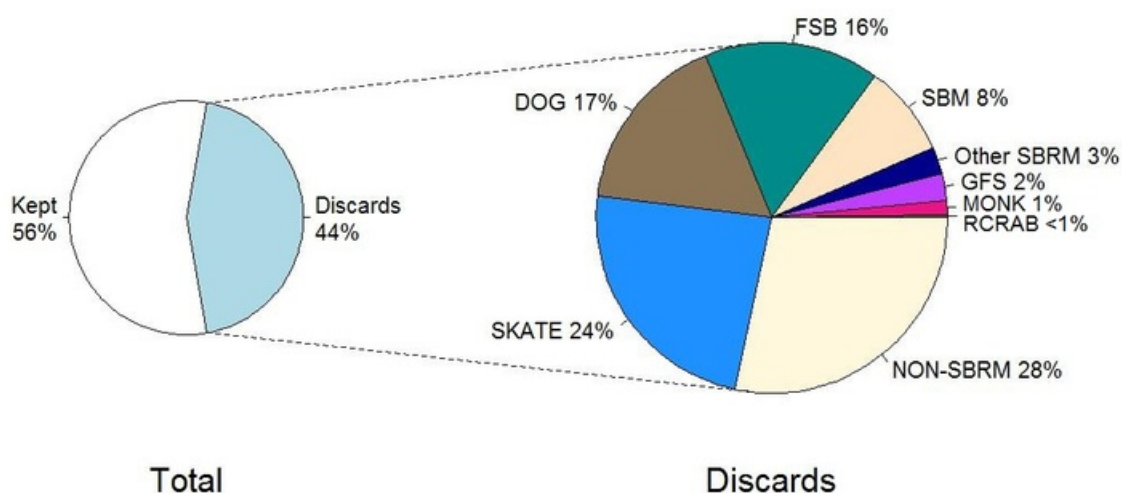
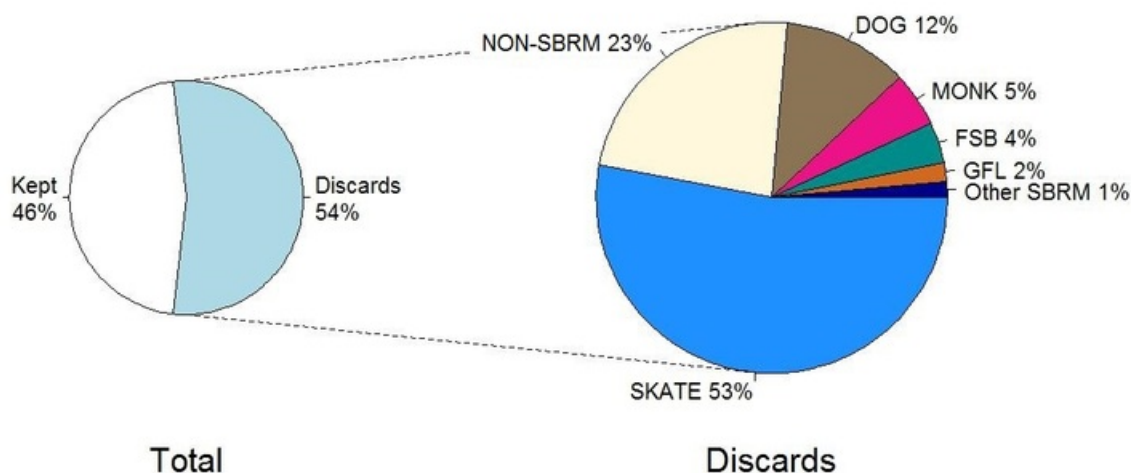


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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)

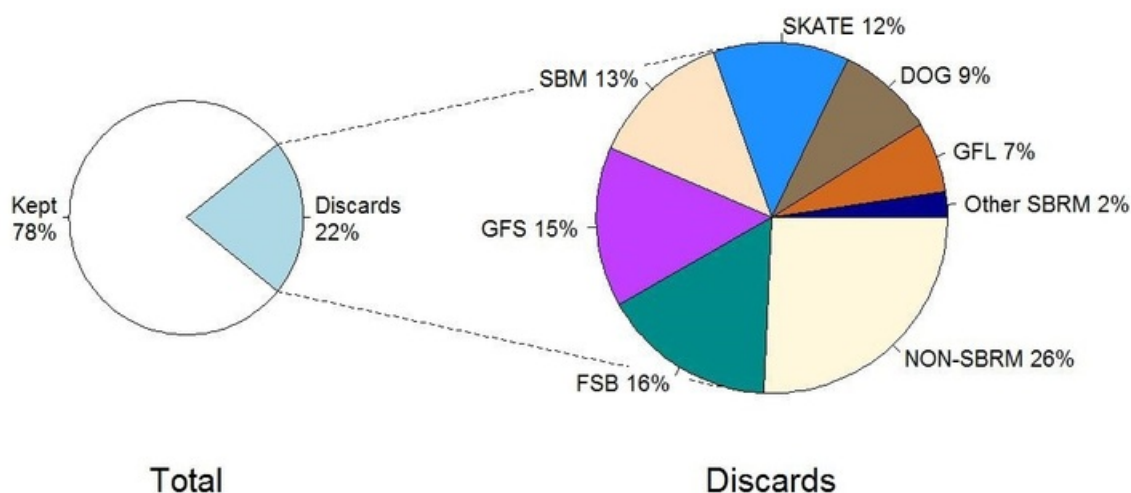
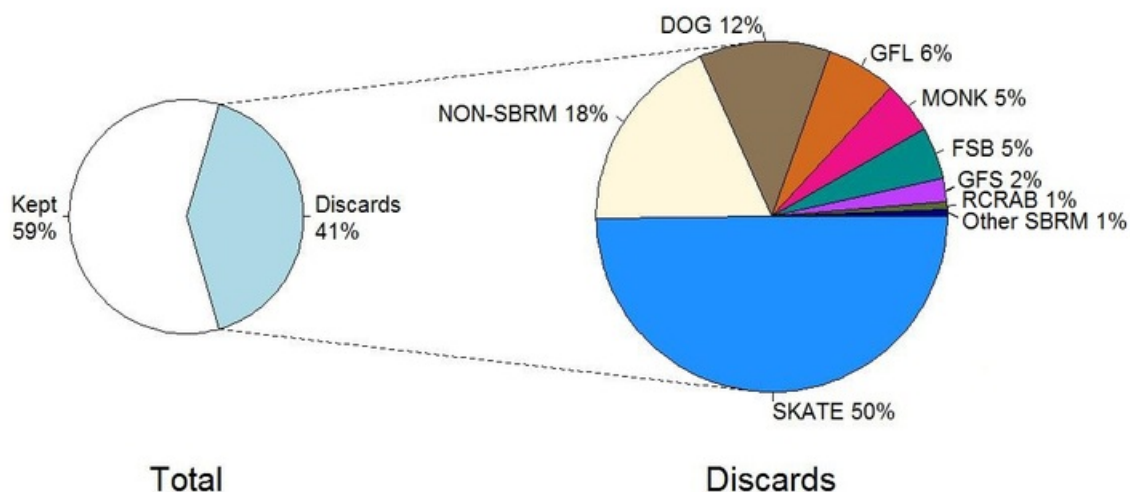


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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 lg (Row 8)



FLEET: Otter Trawl, Scallop AA GEN MA sm (Row 9)

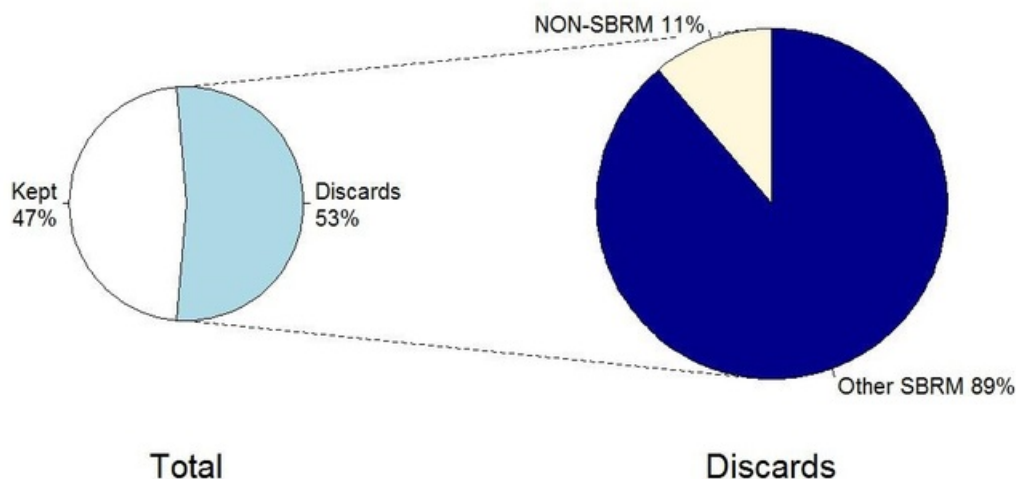
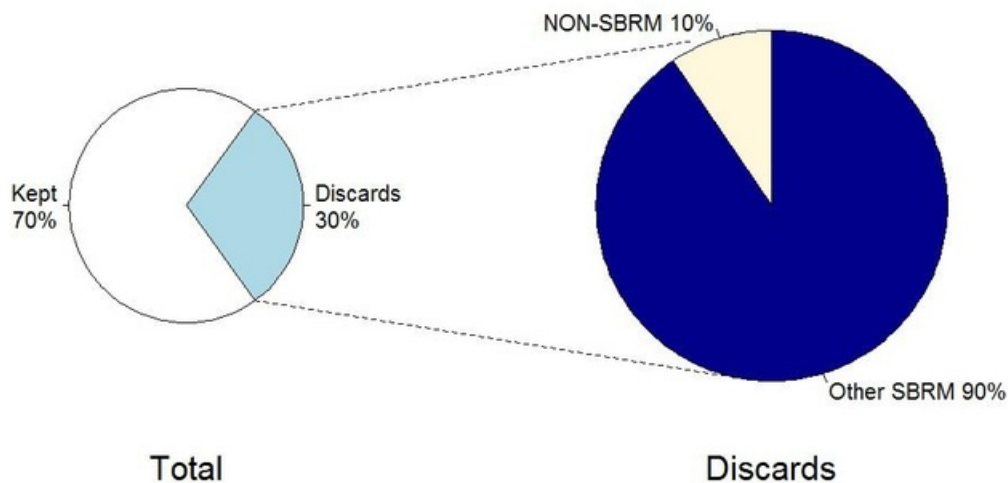


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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, Scallop OPEN GEN MA lg (Row 12)



FLEET: Otter Trawl, Twin OPEN all NE sm (Row 17)

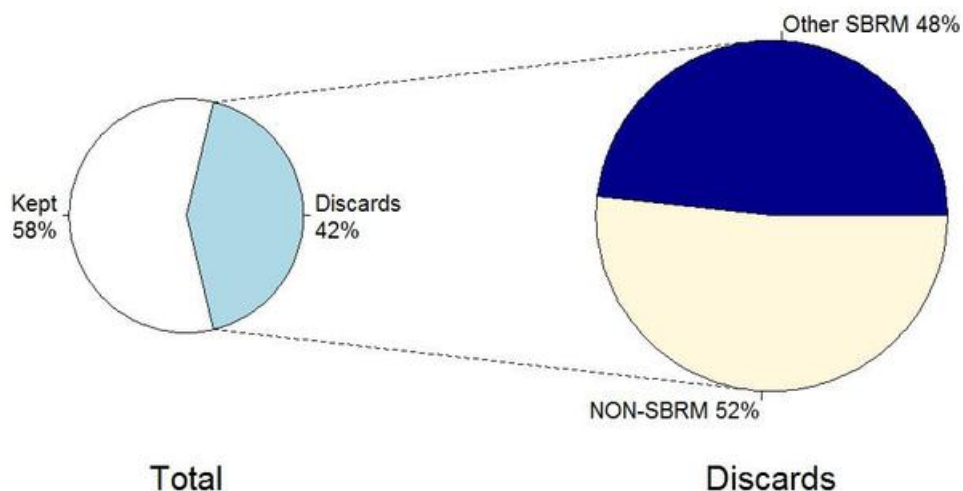
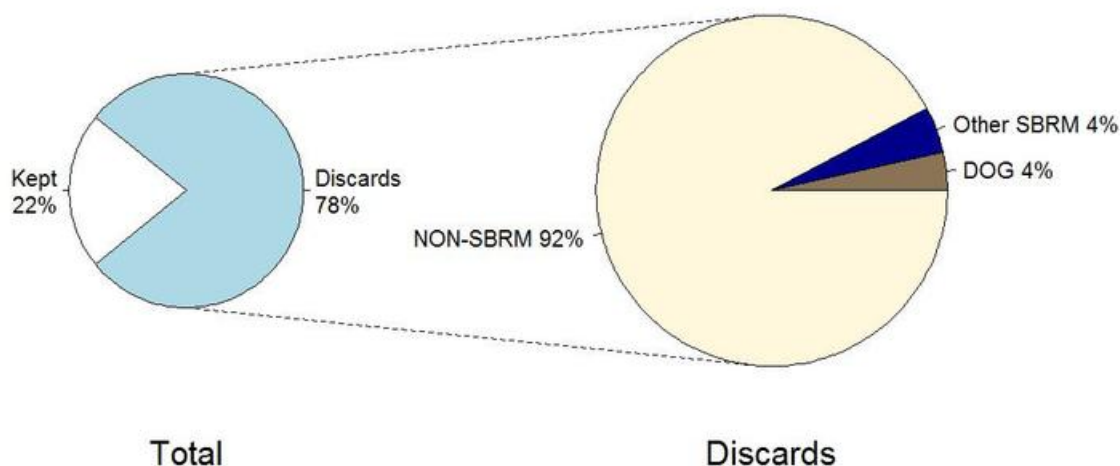


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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, Twin, Shrimp OPEN all MA sm (Row 24)



FLEET: Gillnet OPEN all MA sm (Row 30)

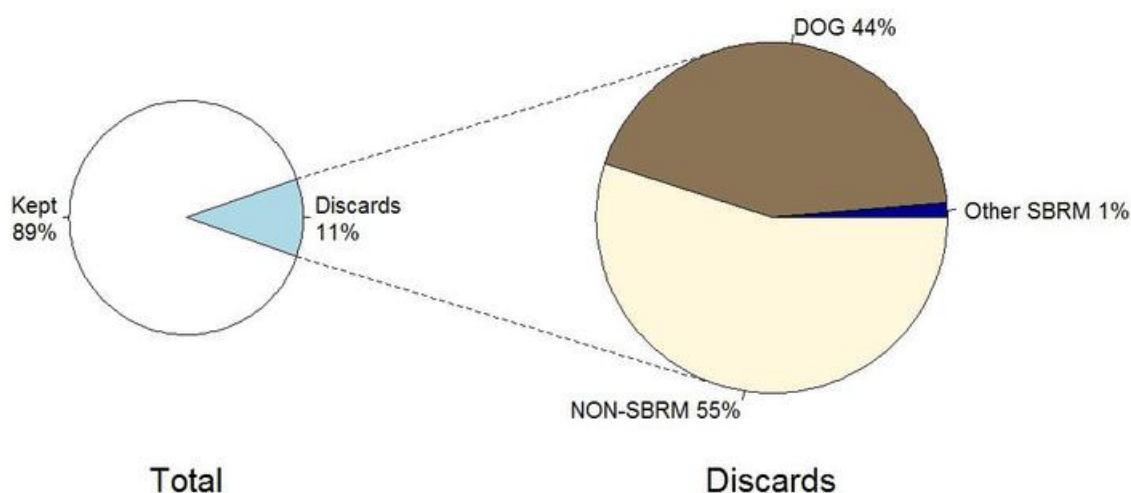
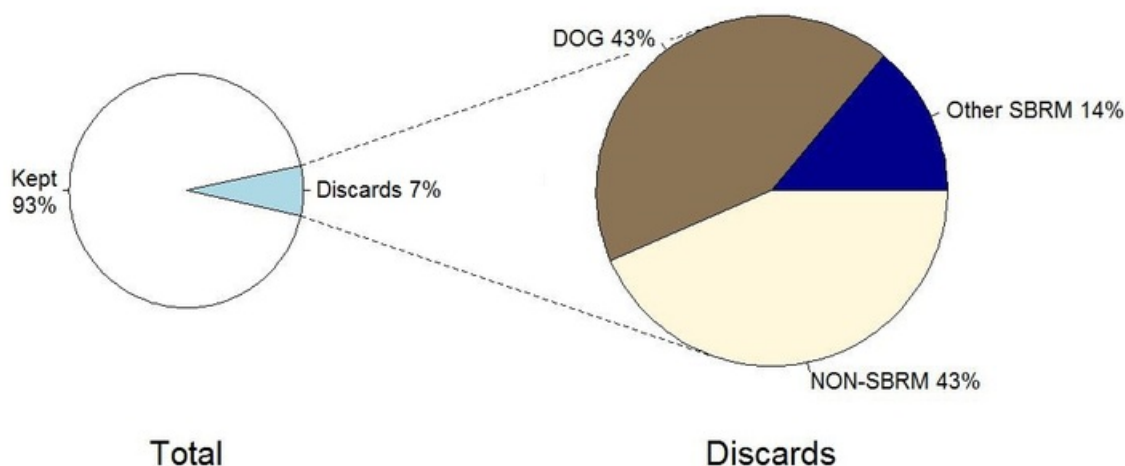


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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 lg (Row 31)



FLEET: Gillnet OPEN all MA xlg (Row 32)

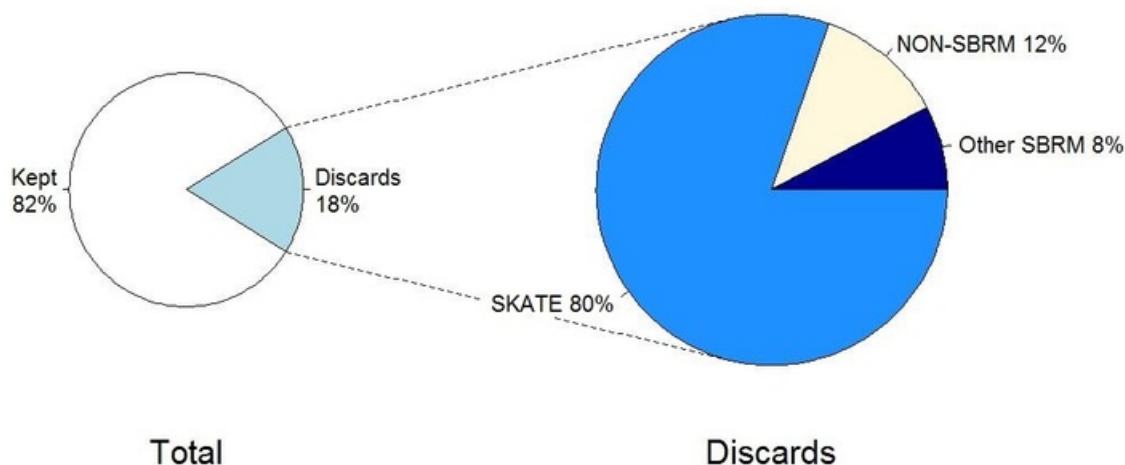
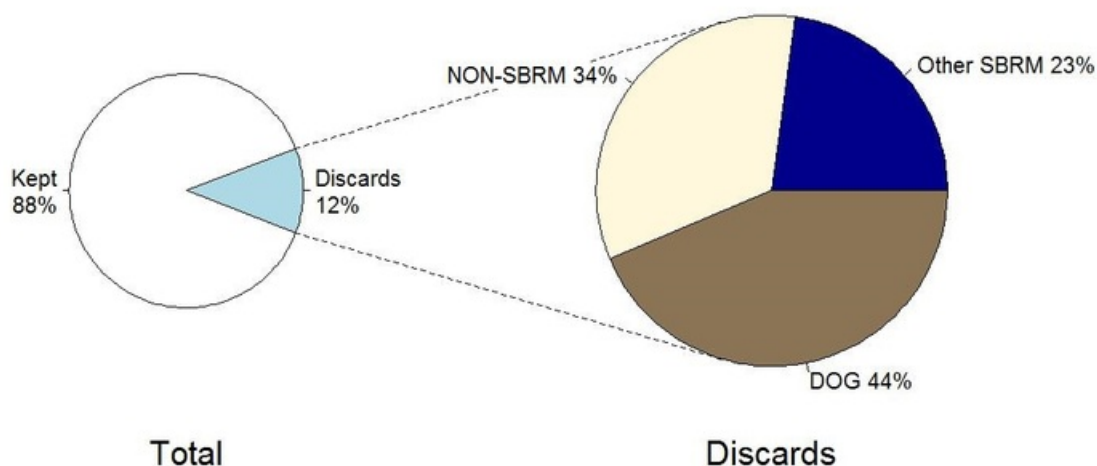


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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 lg (Row 34)



FLEET: Gillnet OPEN all NE xlg (Row 35)

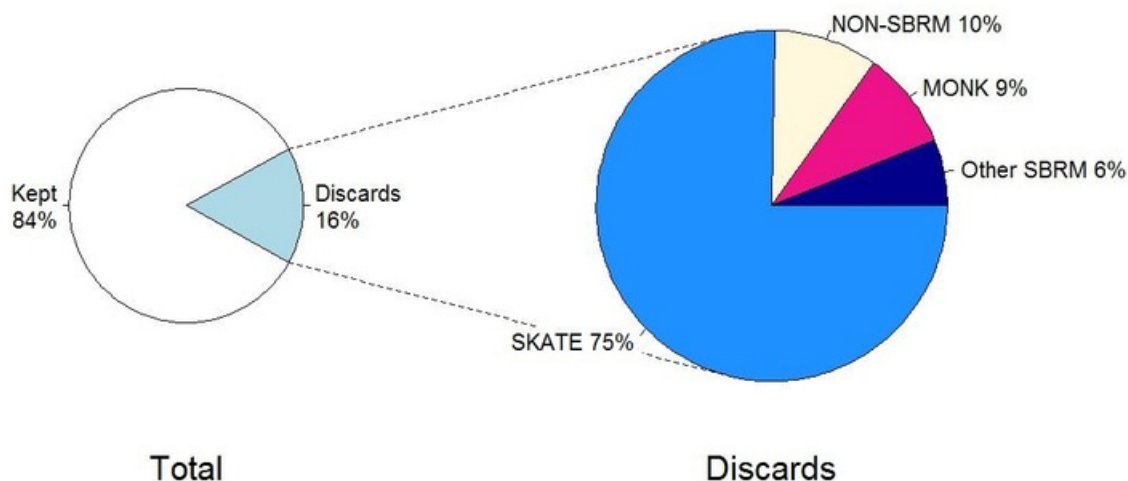
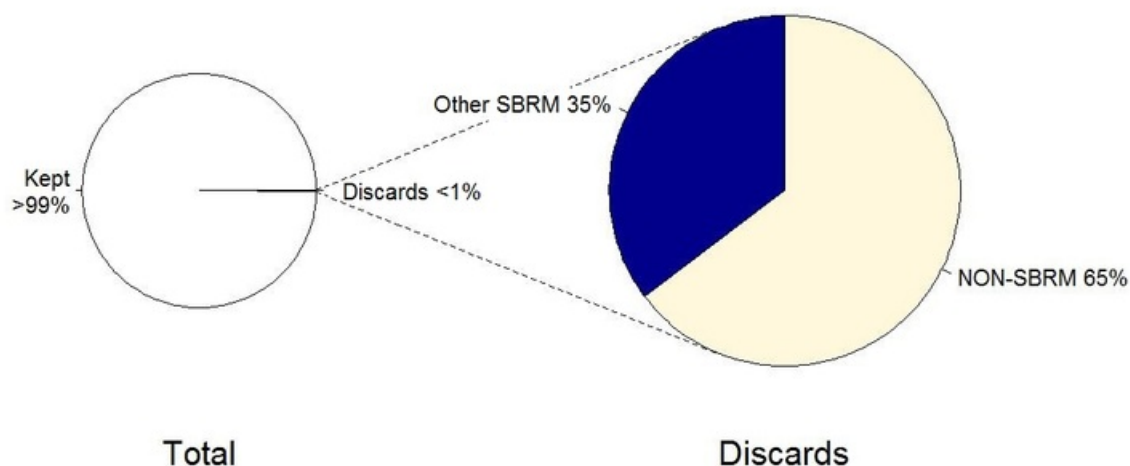


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Purse Seine OPEN all NE all (Row 37)



FLEET: Dredge, Scallop AA GEN MA all (Row 38)

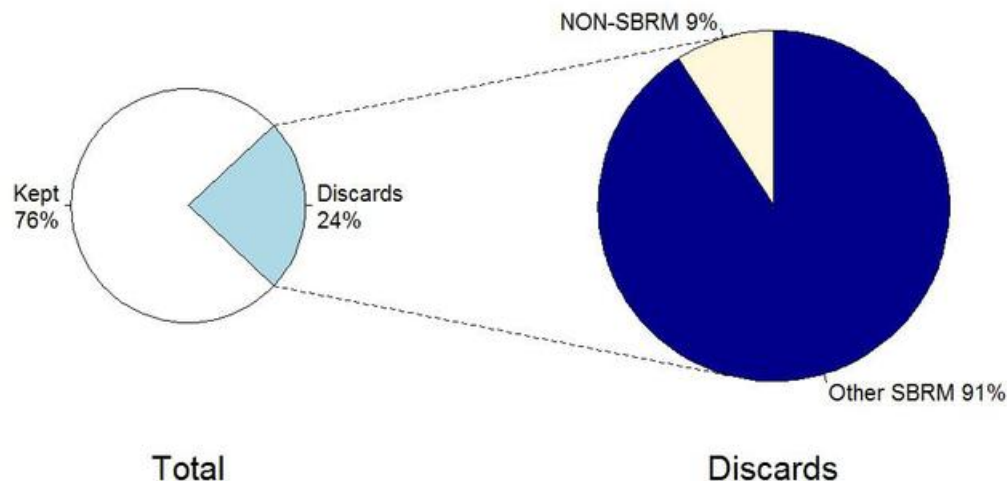
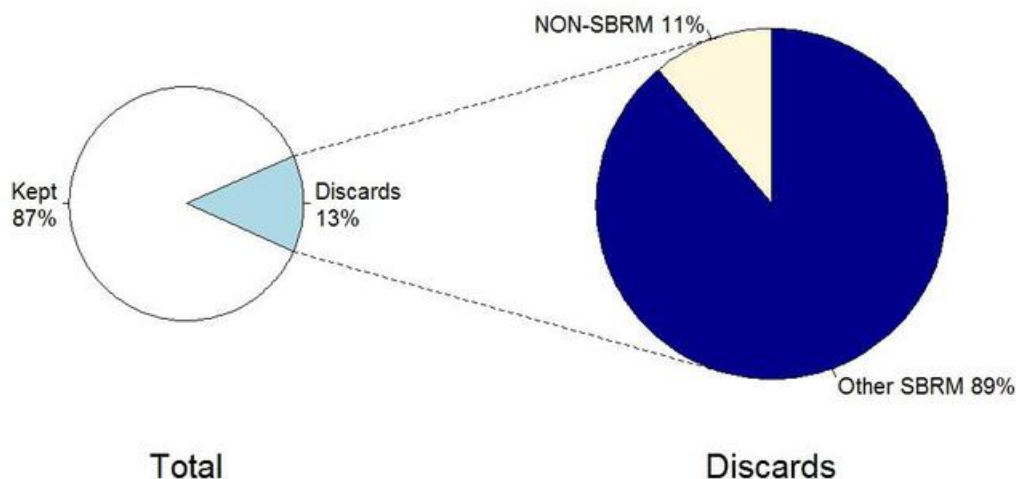


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Dredge, Scallop AA GEN NE all (Row 39)



FLEET: Dredge, Scallop AA LIM MA all (Row 40)

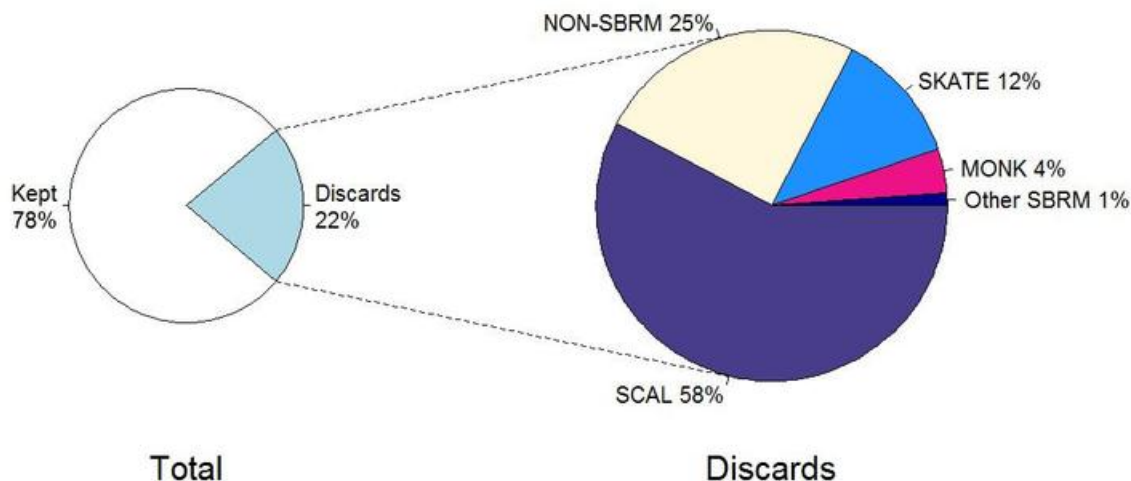
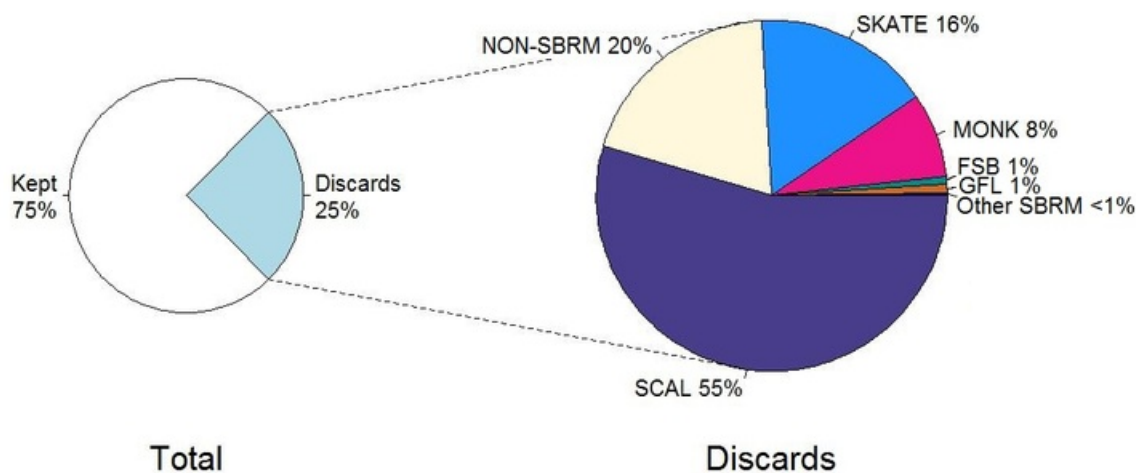


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Dredge, Scallop AA LIM NE all (Row 41)



FLEET: Dredge, Scallop OPEN GEN MA all (Row 42)

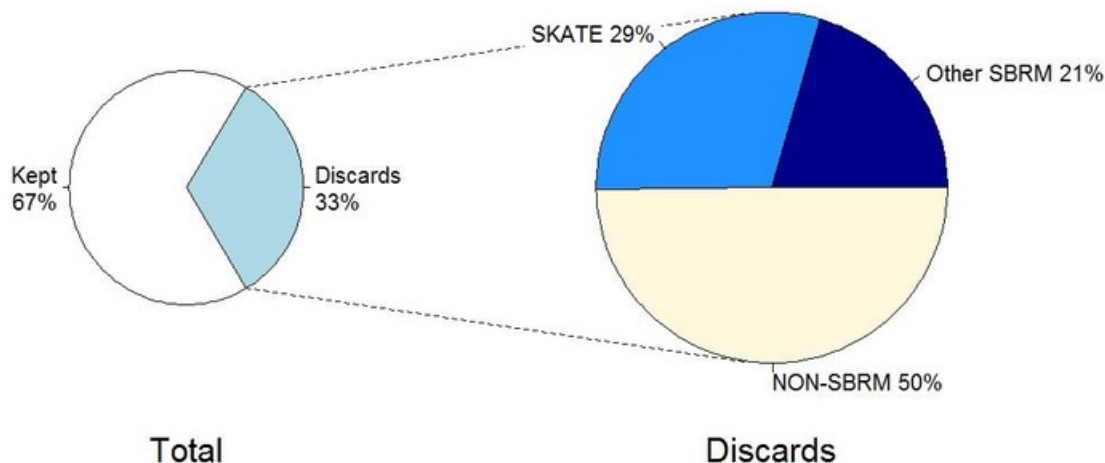
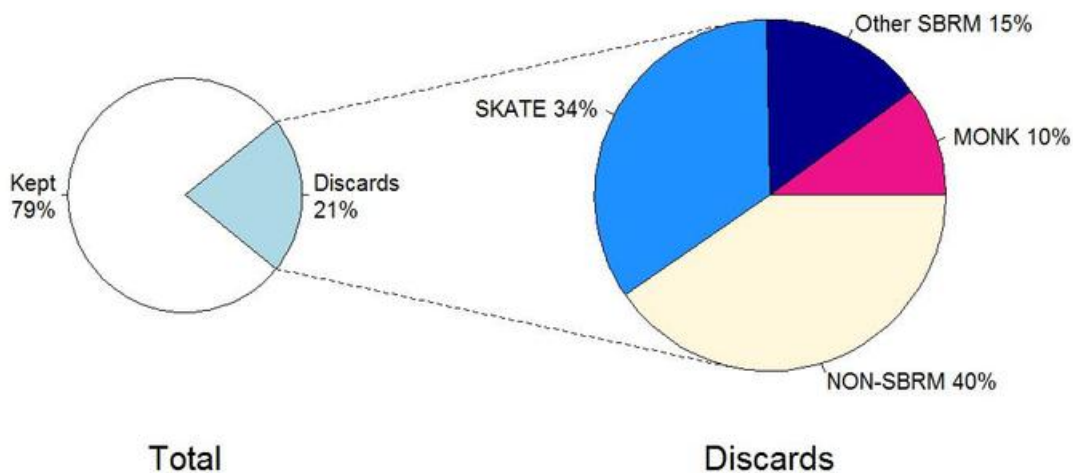


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Dredge, Scallop OPEN GEN NE all (Row 43)



FLEET: Dredge, Scallop OPEN LIM MA all (Row 44)

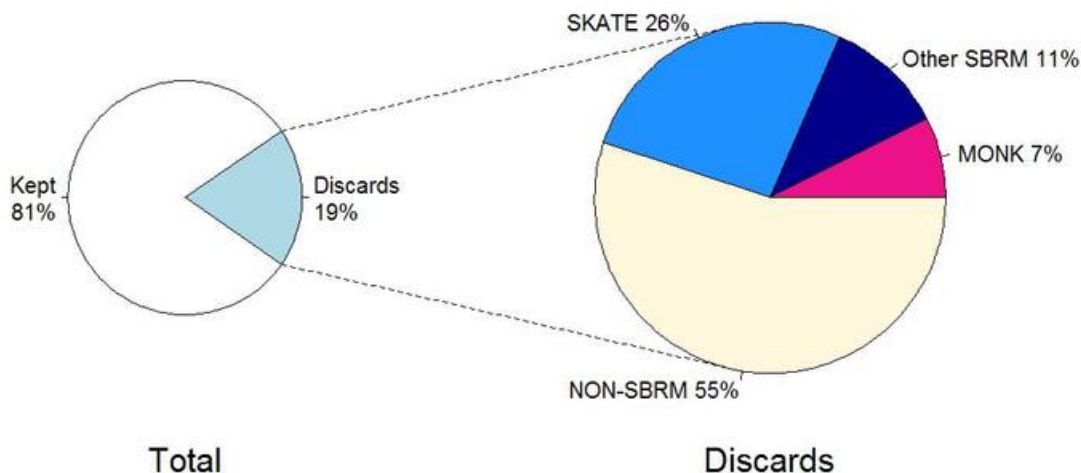
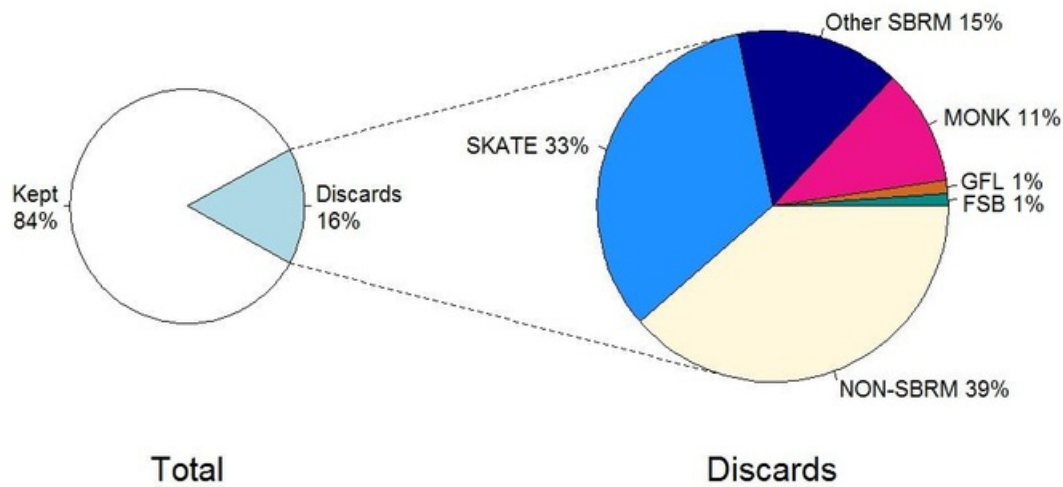


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Dredge, Scallop OPEN LIM NE all (Row 45)



FLEET: Trawl, Mid-water Paired&Single AA all NE sm (Row 48)

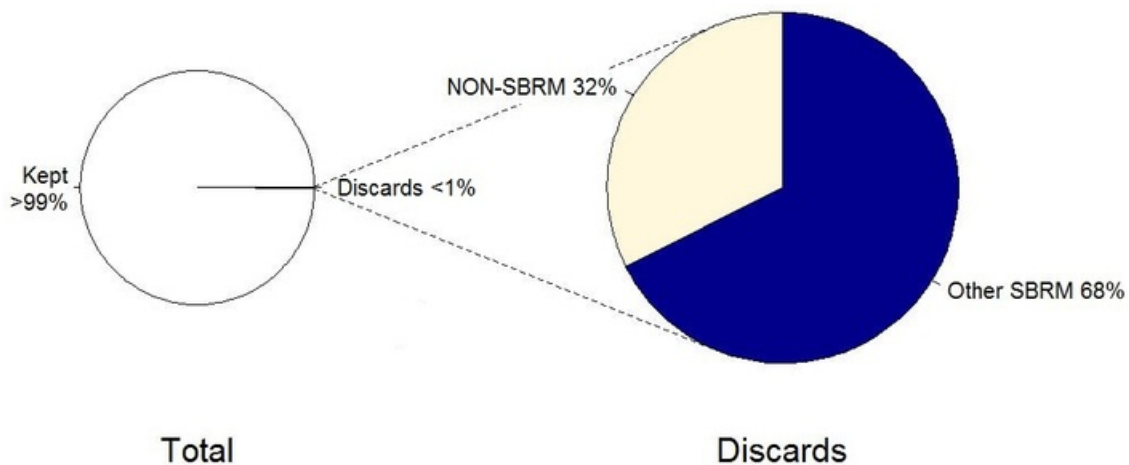
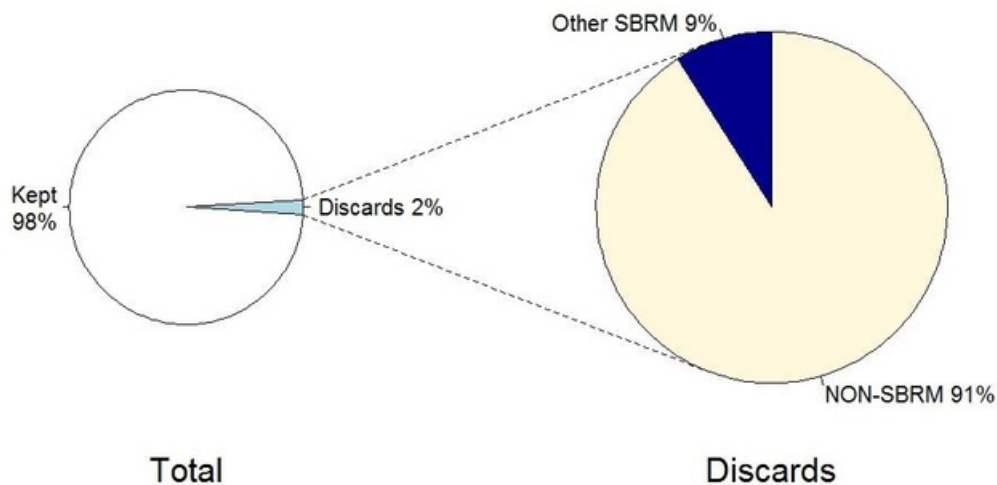


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Trawl, Mid-water Paired&Single OPEN all MA sm (Row 49)



FLEET: Trawl, Mid-water Paired&Single OPEN all NE sm (Row 50)

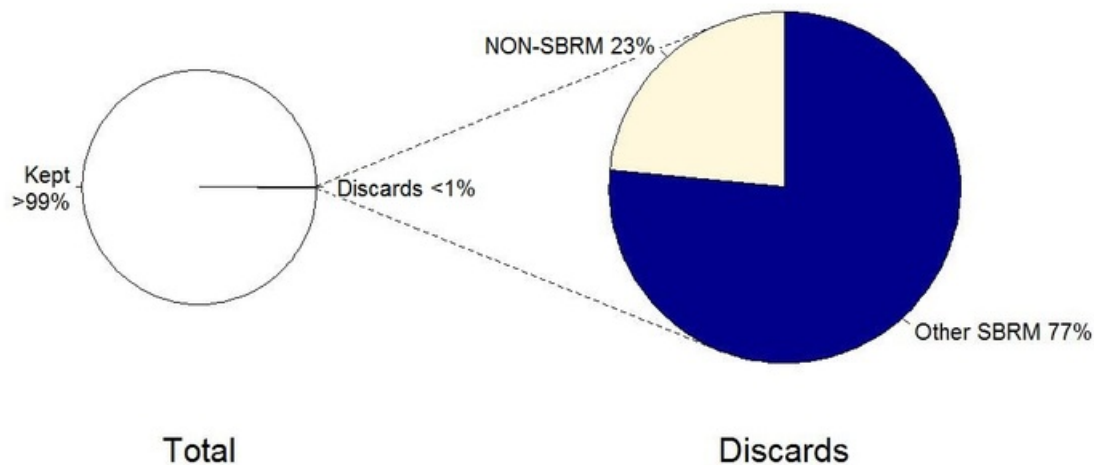
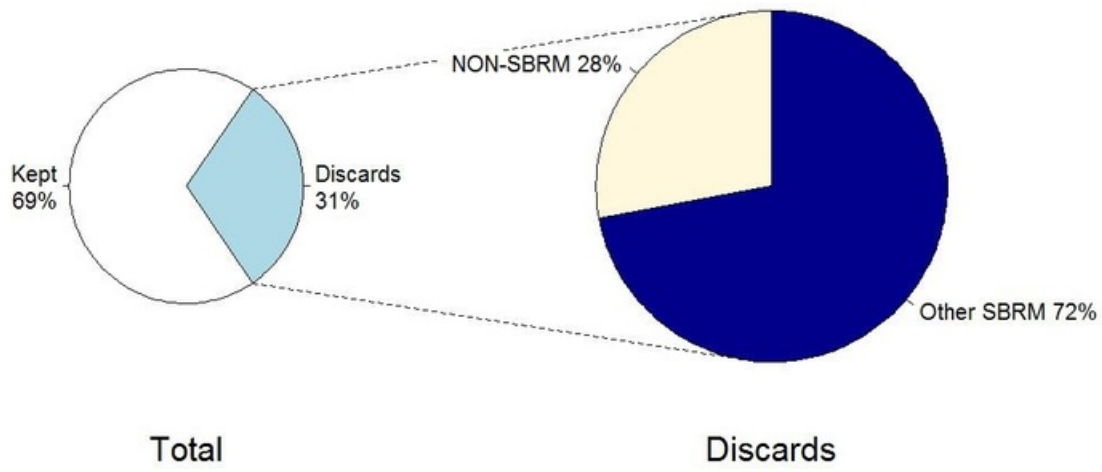


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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 53)



FLEET: Pots and Traps, Fish OPEN all NE all (Row 54)

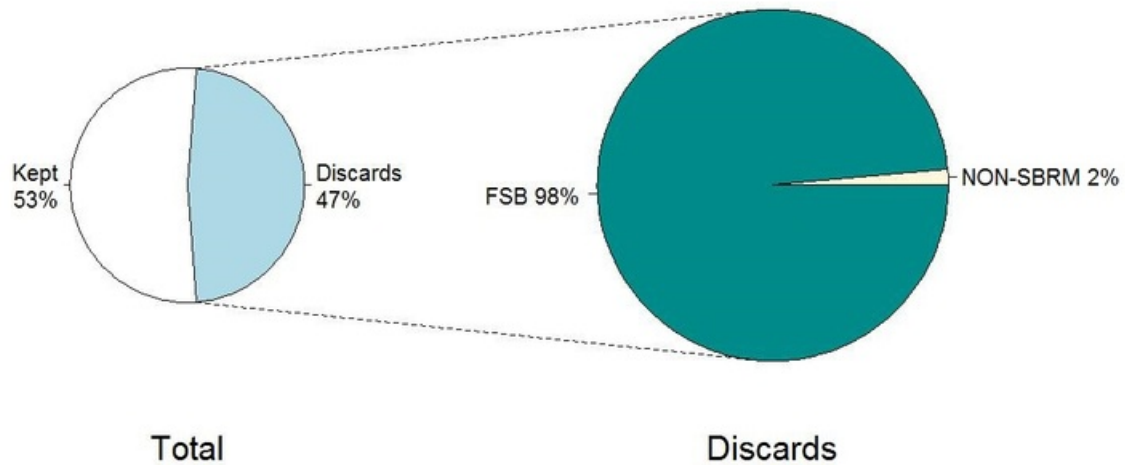
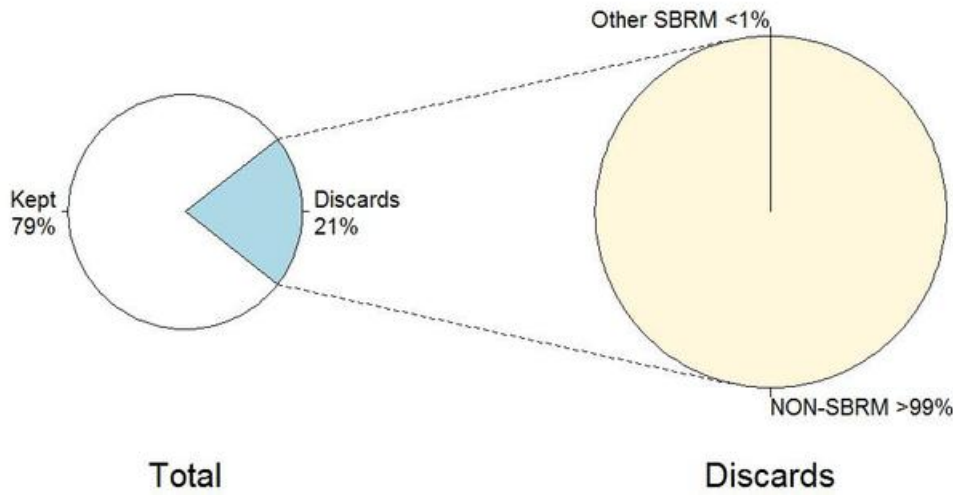


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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 55)



FLEET: Pots and Traps, Conch OPEN all NE all (Row 56)

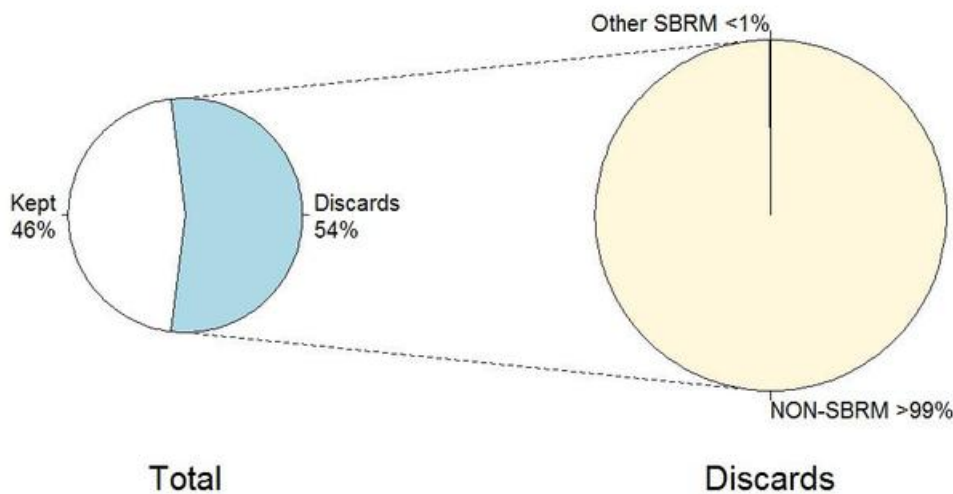
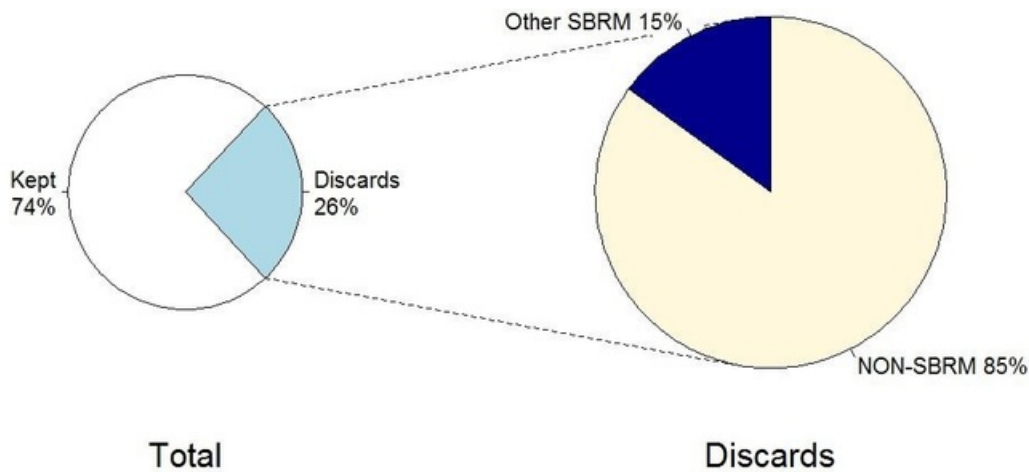


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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 58)



FLEET: Pots and Traps, Lobster OPEN all NE all (Row 59)

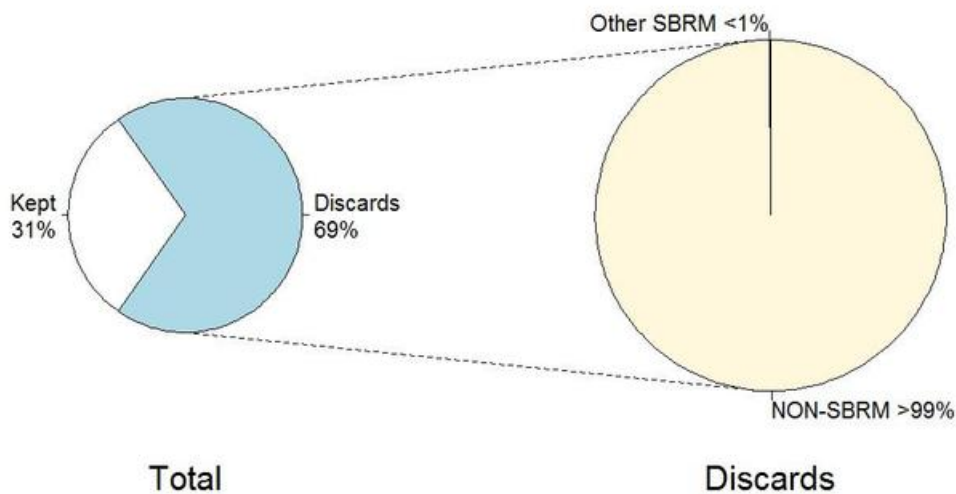
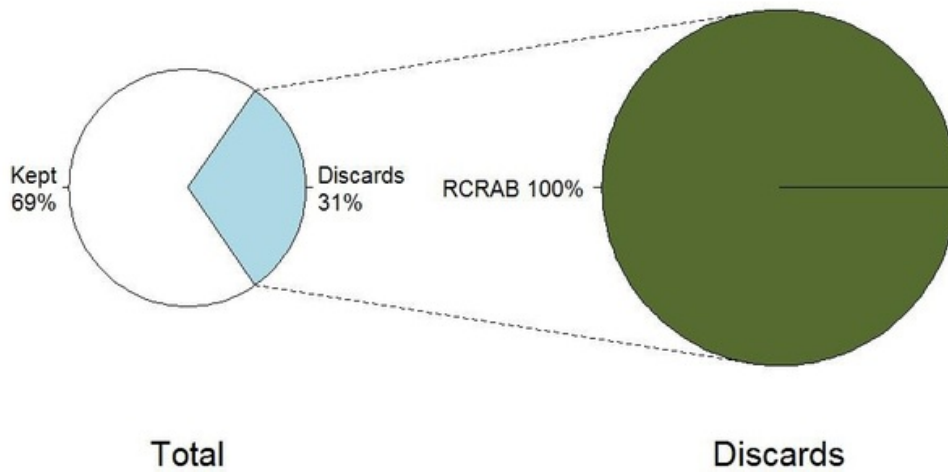


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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, Crab OPEN all MA all (Row 61)



FLEET: Pots and Traps, Crab OPEN all NE all (Row 62)

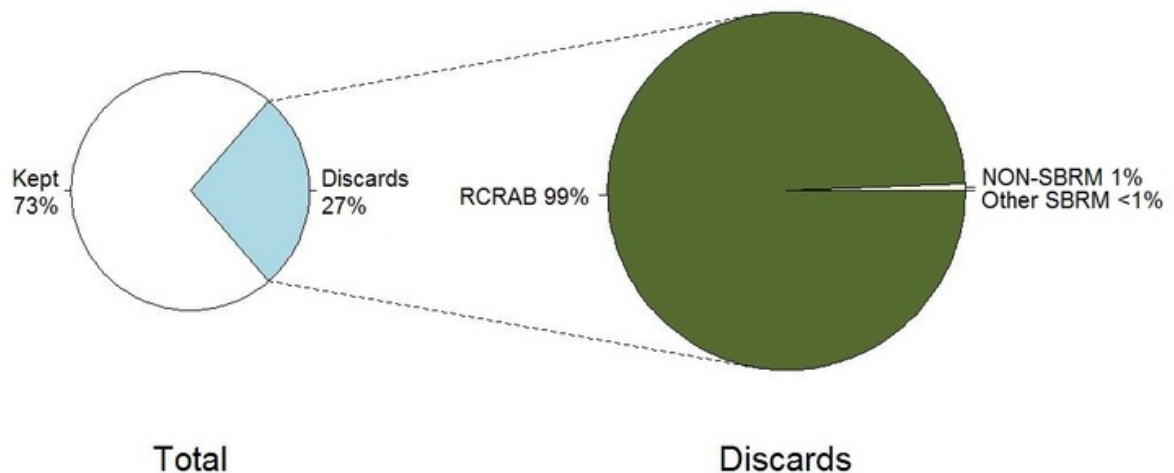
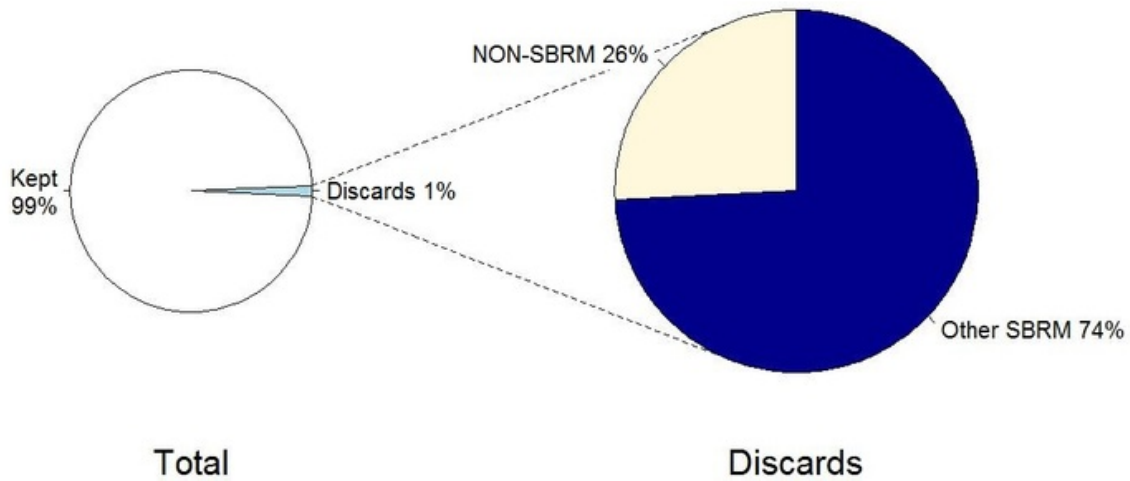


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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: Dredge, Ocean Quahog/Surf Clam OPEN all MA all (Row 67)



FLEET: Ocean Quahog/Surf Clam Dredge OPEN all NE all (Row 68)

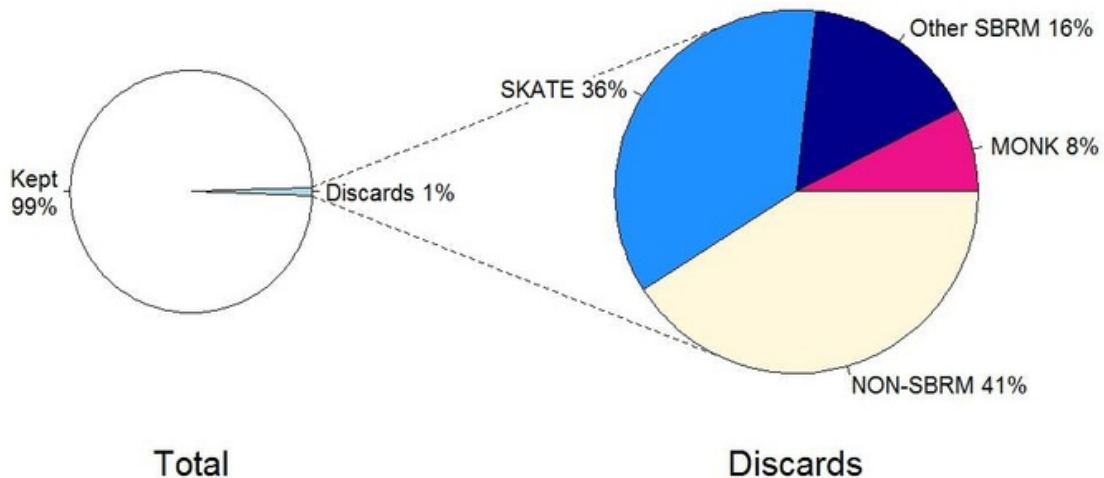


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 38 nonpilot fleets, based on July 2016 through June 2017 data. Because percentages have been rounded, they 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.”

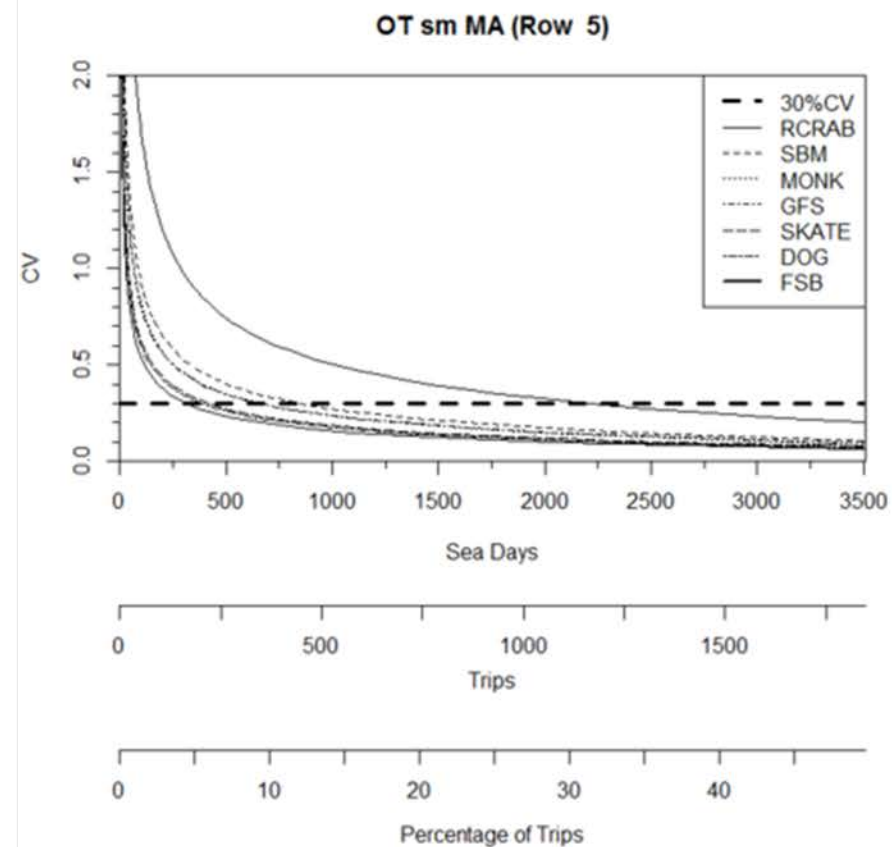
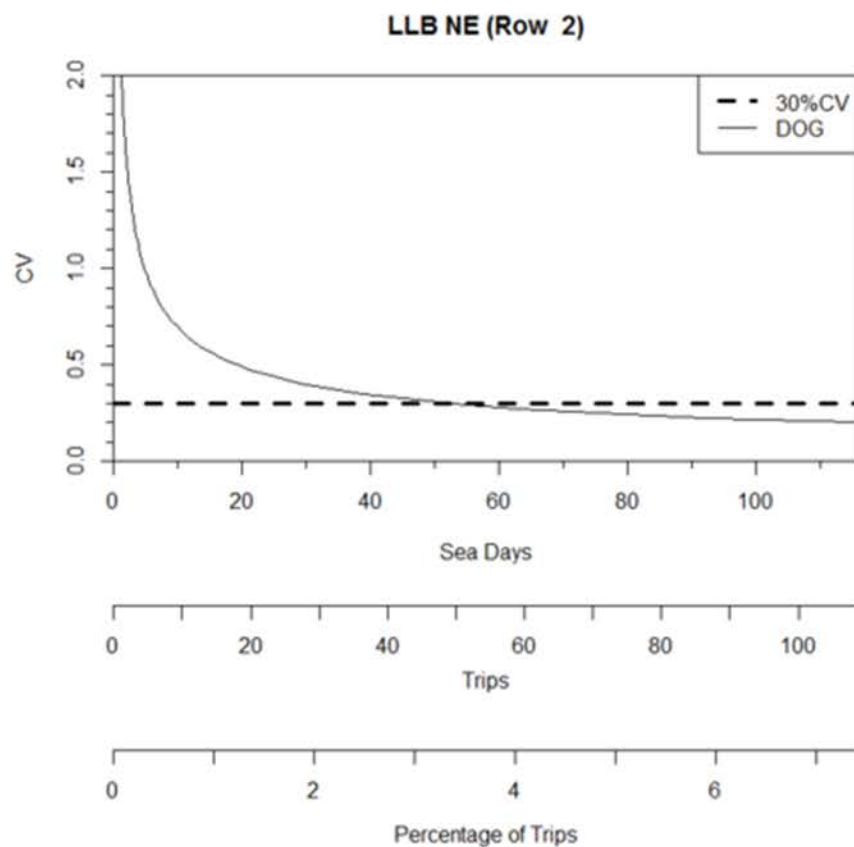


Figure 3 Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

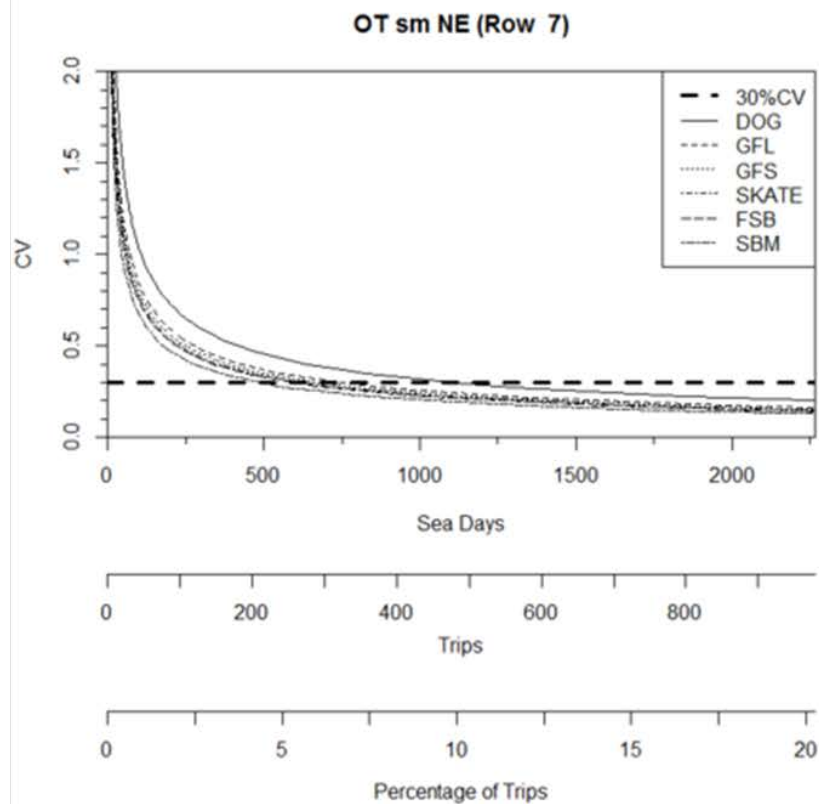
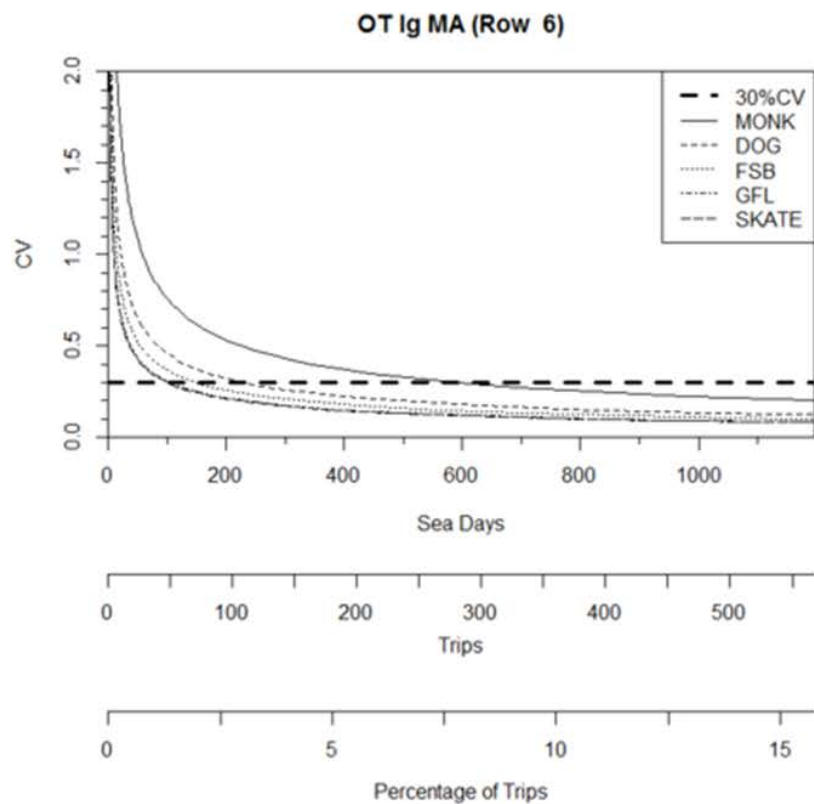


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

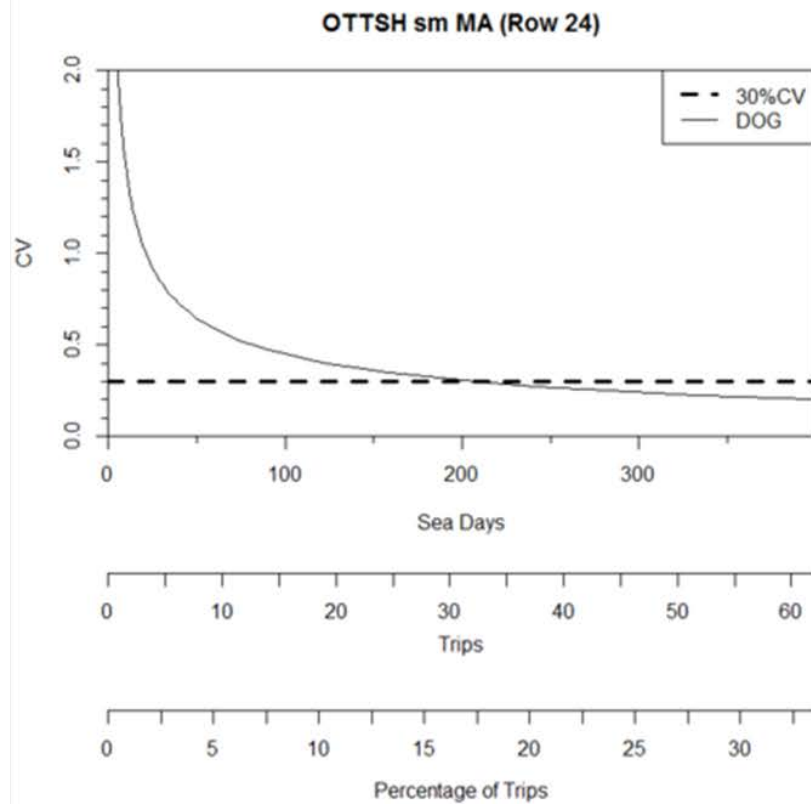
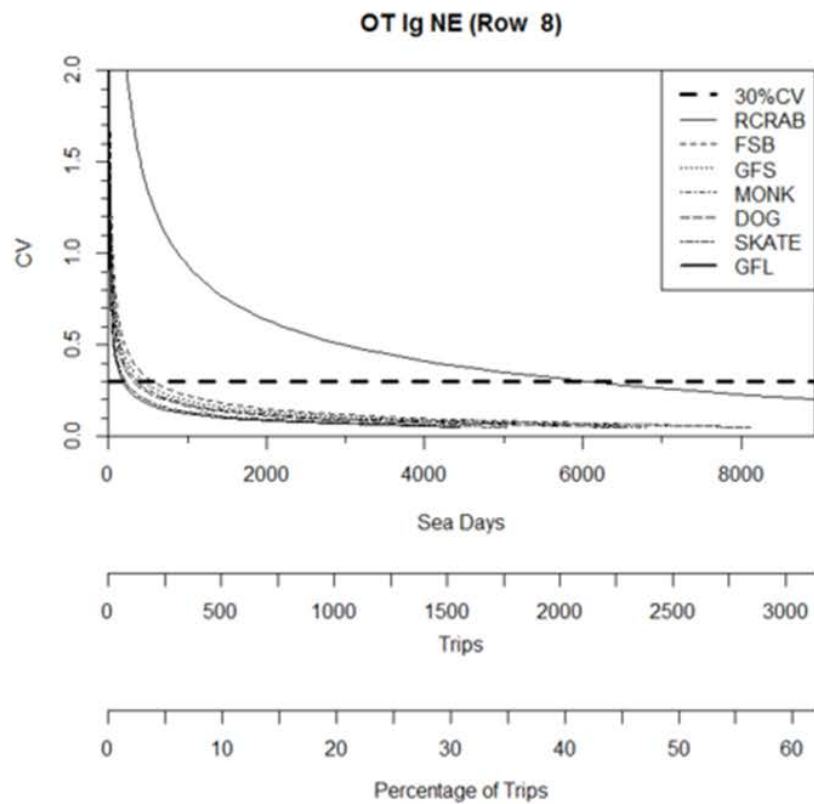


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

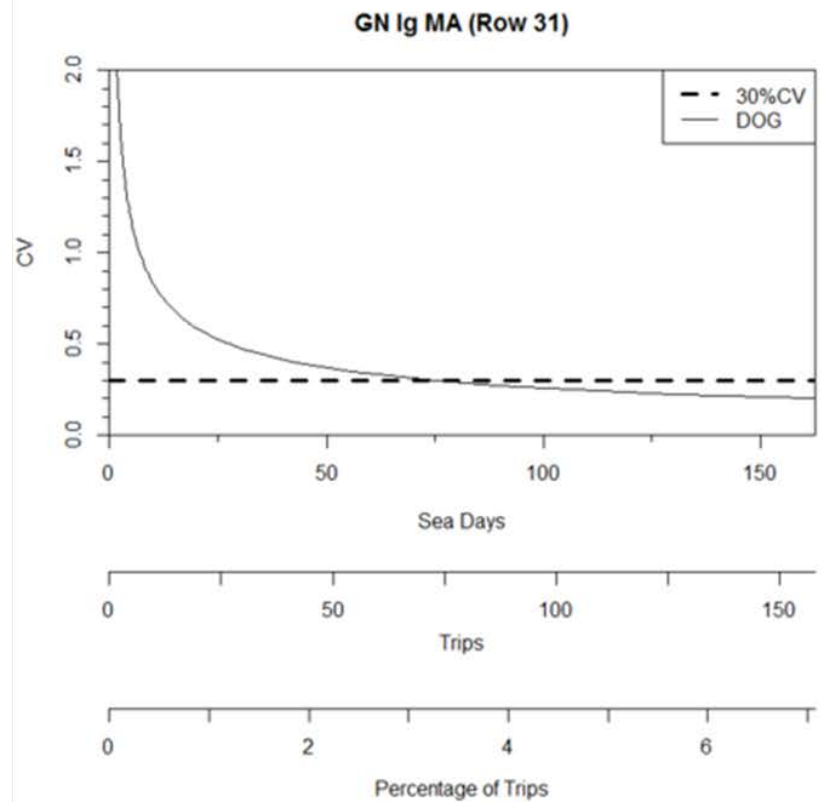
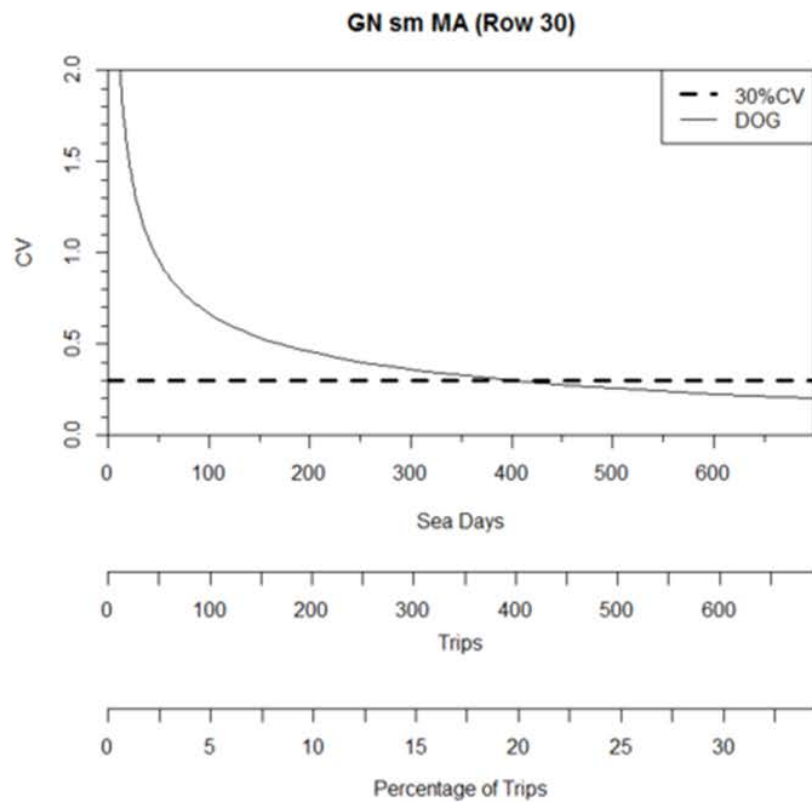


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

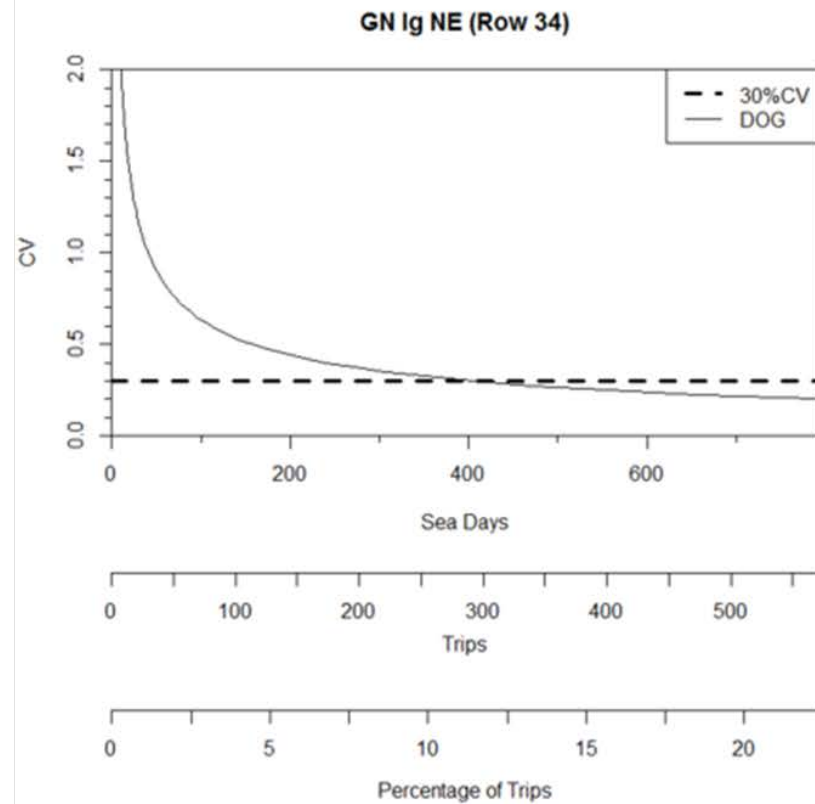
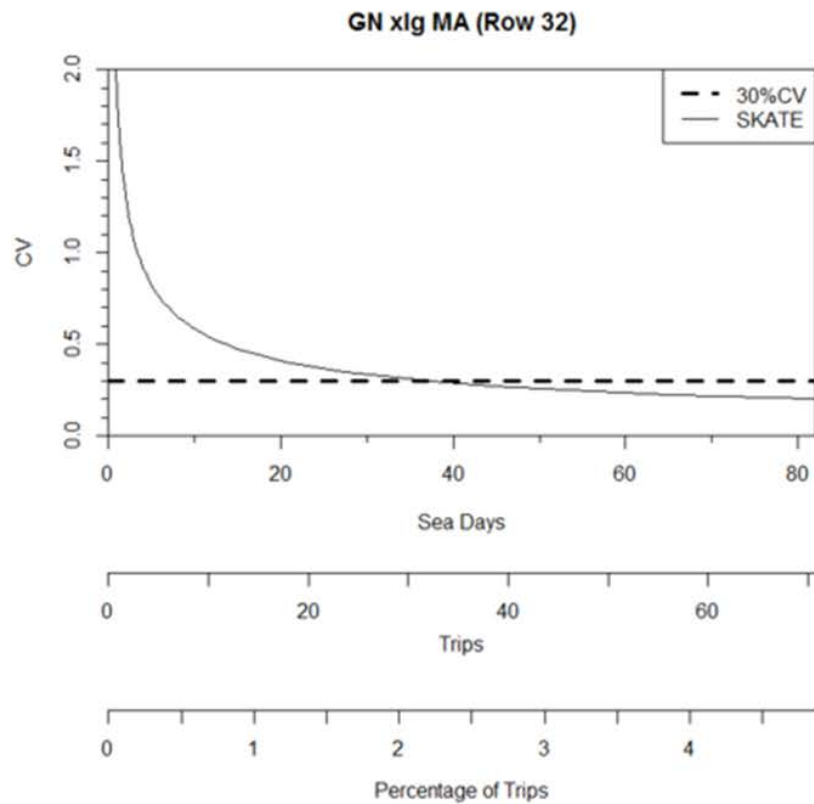


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

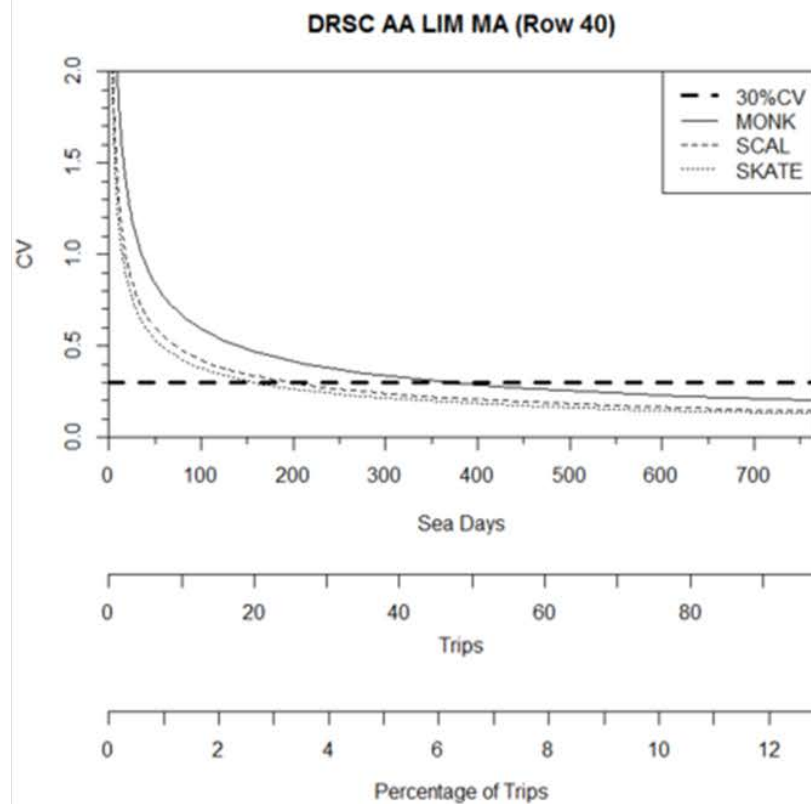
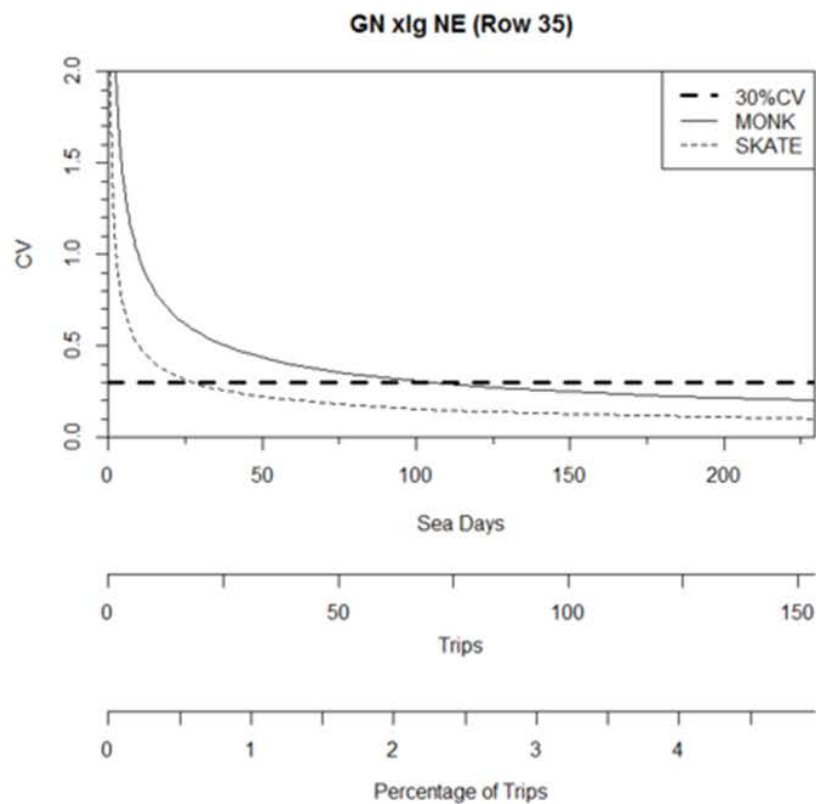


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

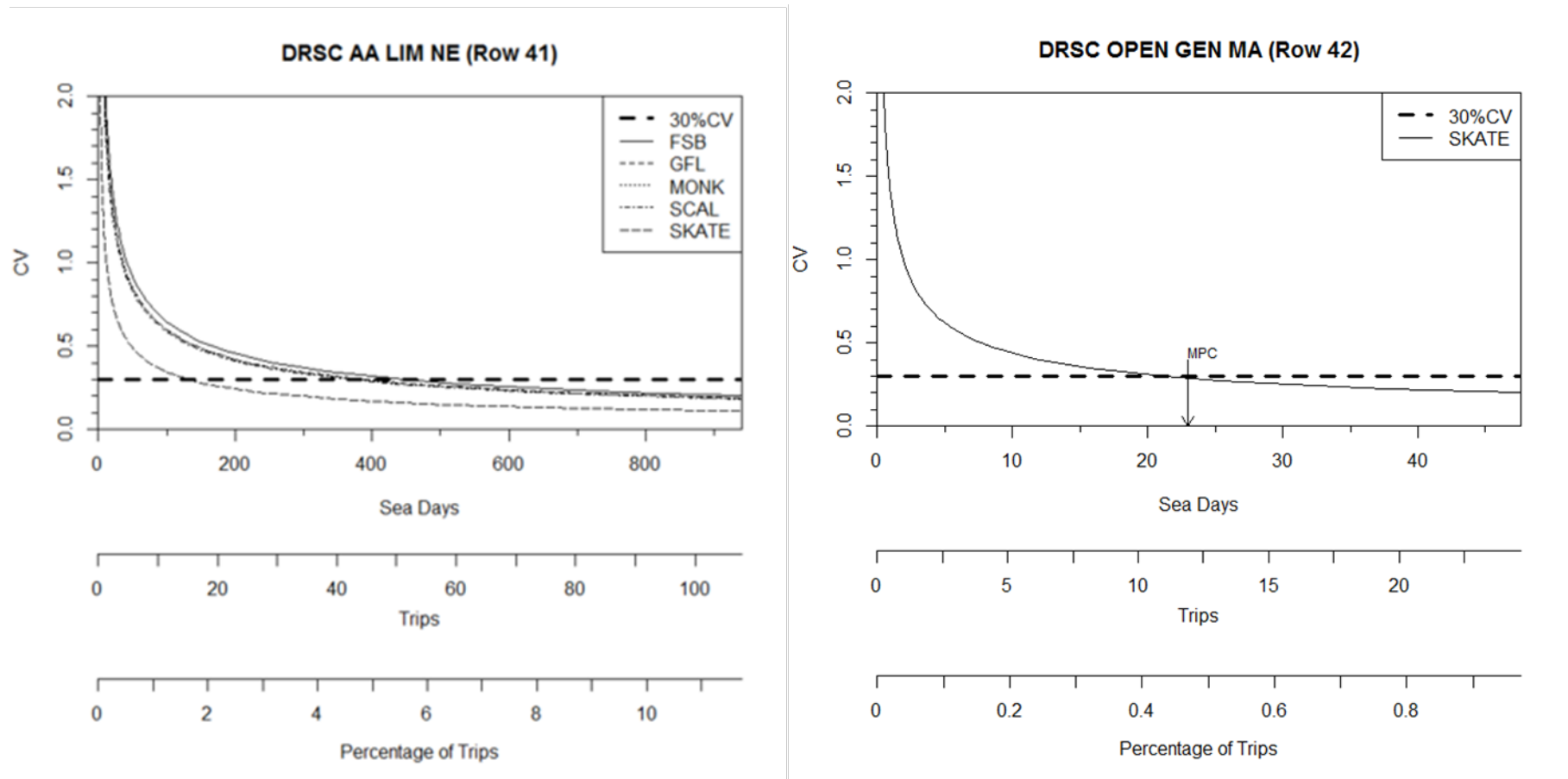


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

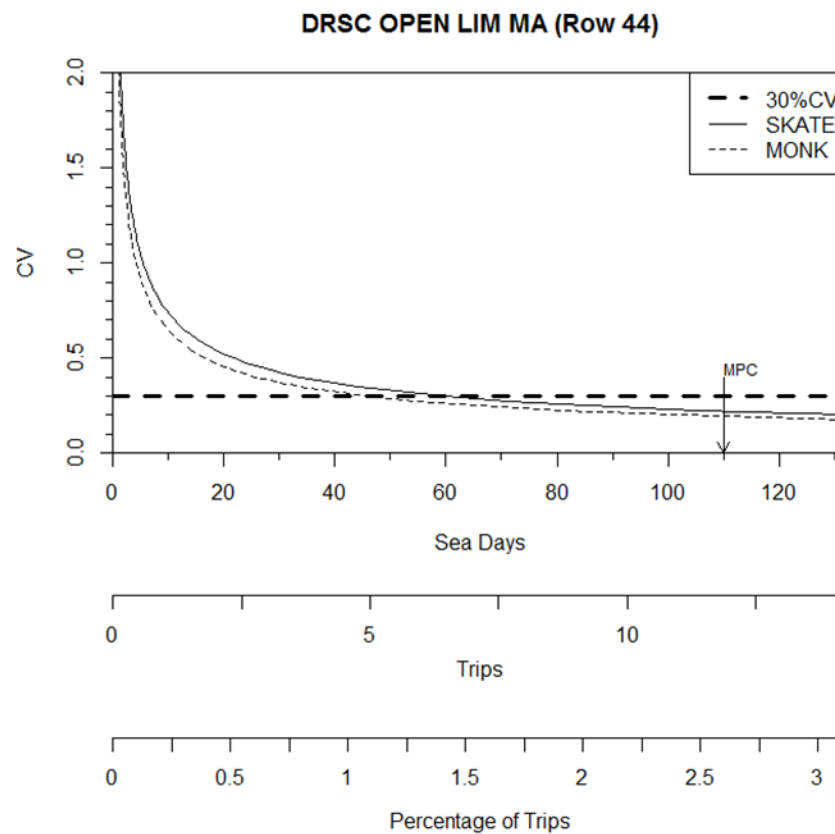
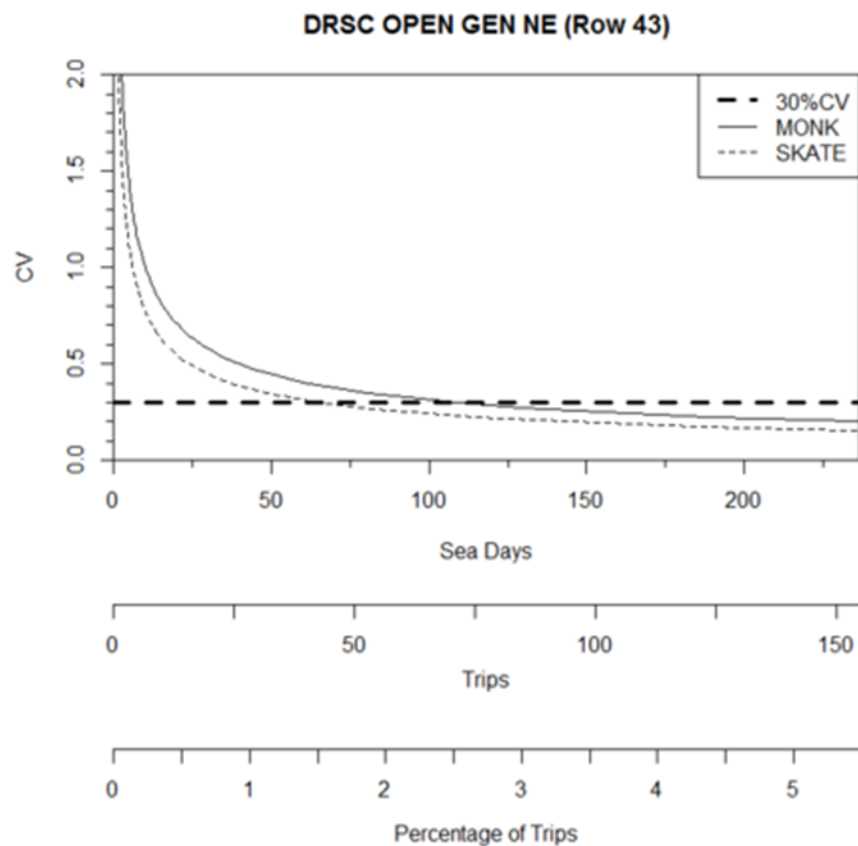


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

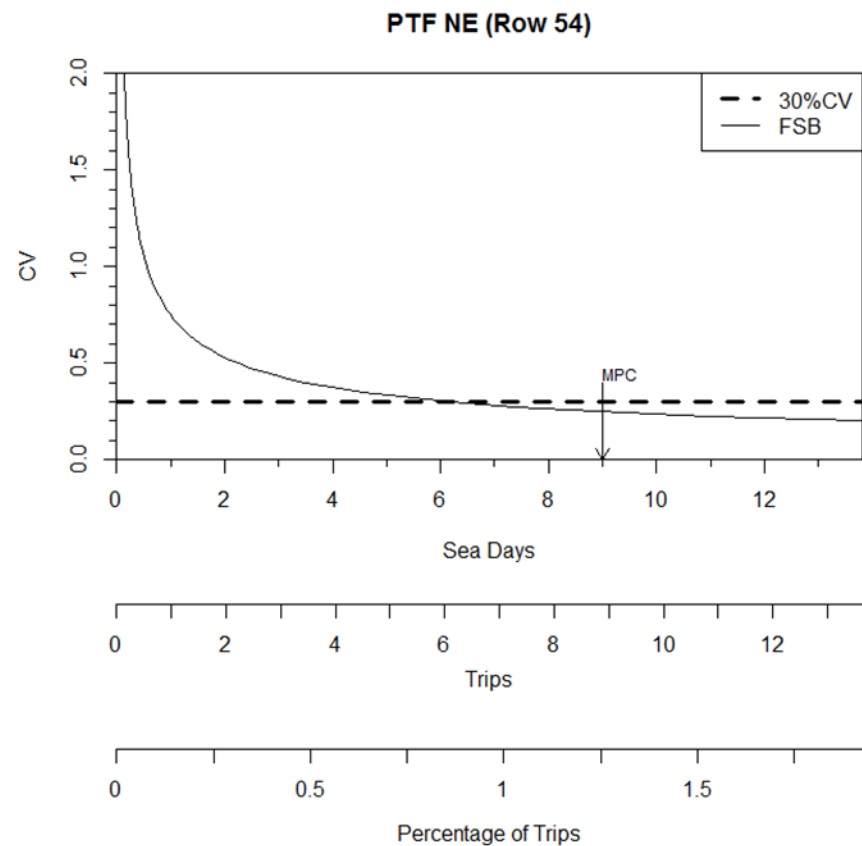
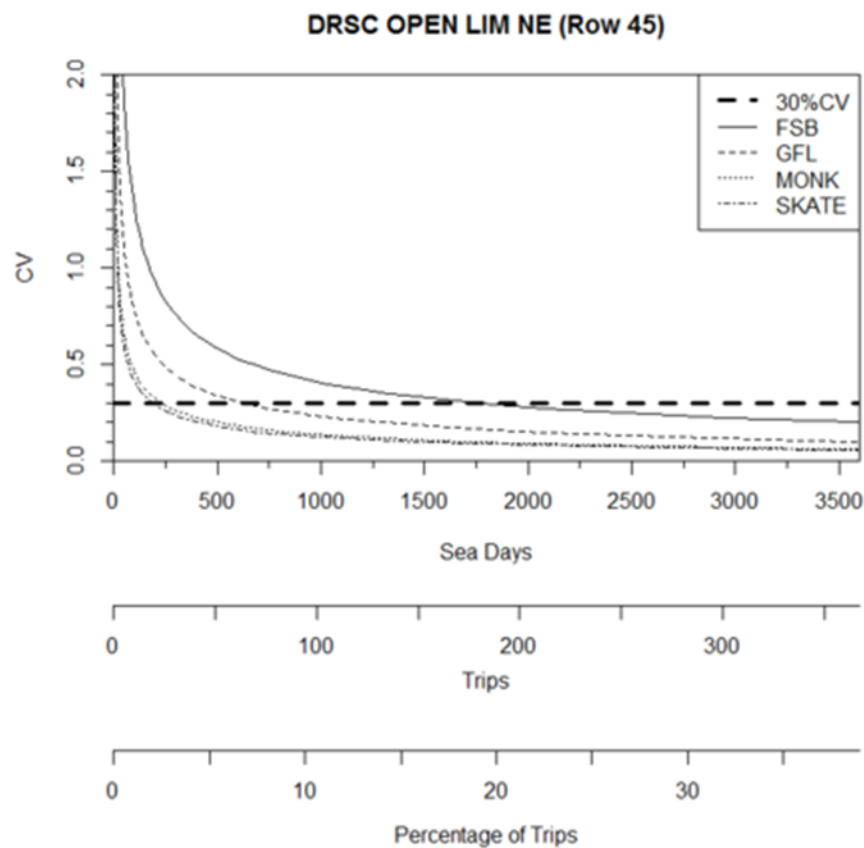


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

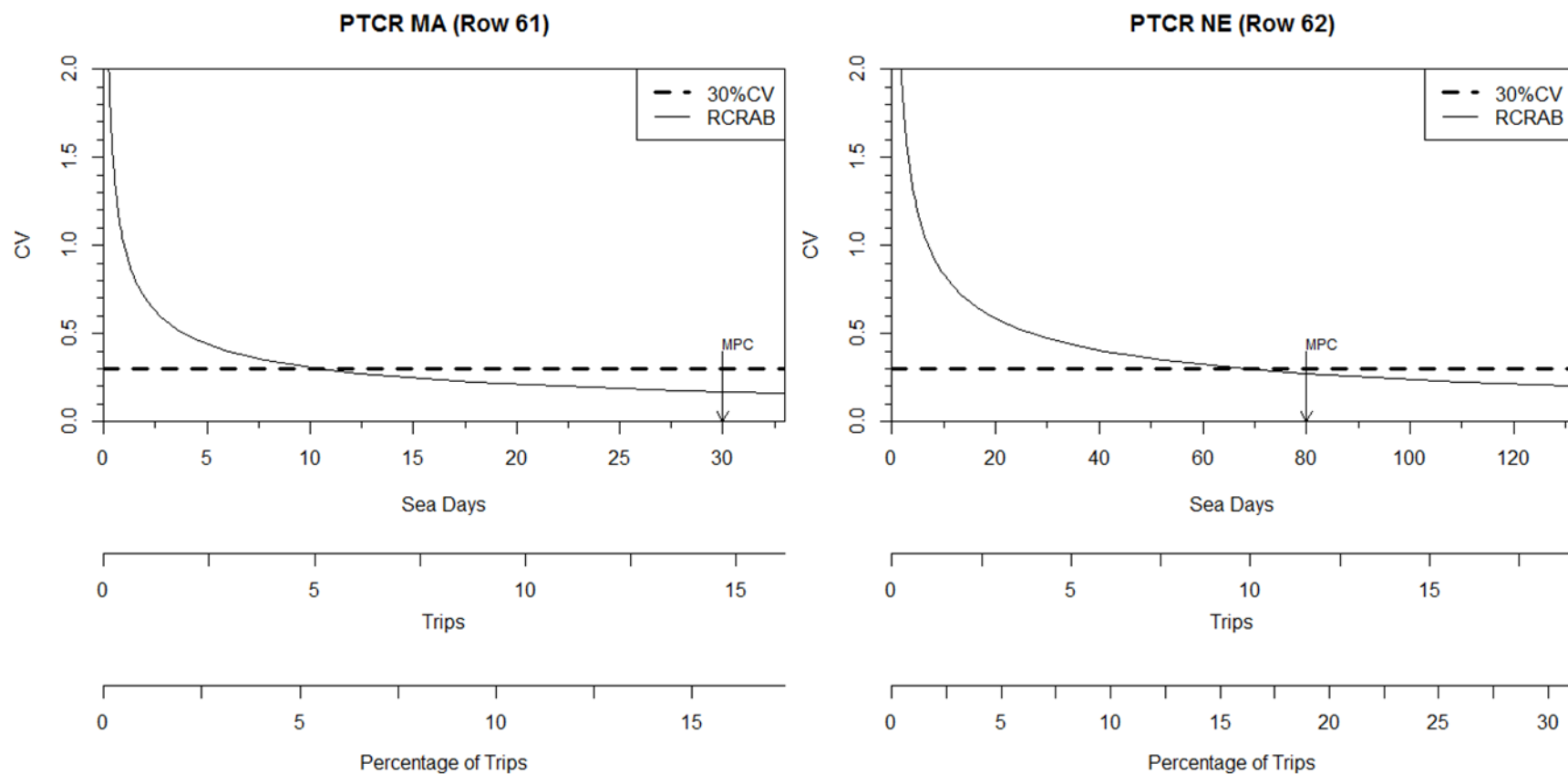


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

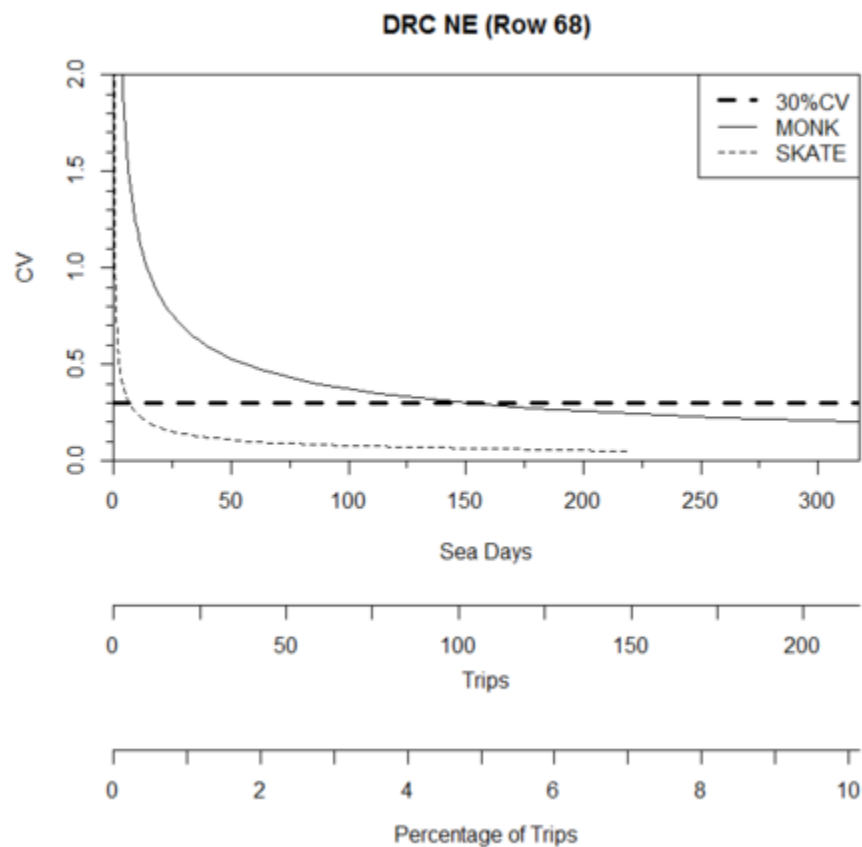


Figure 3, continued. Results from the 2018 sample size analysis conducted for selected fleets. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips and percent of trips) for each of the species groups that was not filtered out. The dash line is the 30% CV. Minimum pilot coverage (MPC) is indicated with an arrow when MPC is greater than the variance-based sample size. For species group and fleet abbreviations, see Table 1 and Appendix Table 4, respectively.

Appendix Table 1 The number of fleets used in 2018 analyses and reported in the tables of this report.

68 fleets uniquely identified in Tables 2 & 3 18 fleets with no observer coverage discard estimation not conducted pilot fleet designation for sample size analysis 9 confidential fleets (Rows 13,26,28,46,47,51,52,60,66) aggregated into "Confidential fleets" in Tables 4 & 5 9 nonconfidential fleets 12 fleets with sparse observer coverage discard estimation conducted pilot fleet designation for sample size analysis 3 confidential fleets (Rows 16,57,64) aggregated into "Confidential fleets" in Tables 4 & 5 9 nonconfidential fleets 38 fleets with sufficient observer coverage discard estimation conducted variance of discard used for sample size analysis nonpilot fleets 1 confidential fleet (Row 17) aggregated into "Confidential fleets" in Tables 4 & 5 37 nonconfidential fleets
Other minor fleets fleets not uniquely identified no discard estimation conducted no sample size analysis 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	REGULATIONS PROHIBIT RETENTION, TOO SMALL
	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 2016 through June 2017 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
50 Other fleets filtered out						217,699	75.6	9.1	1.8	0.0	12.9	0.6	100.0
Total						217,699	75.6	9.1	1.8	0.0	12.9	0.6	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	2,904,777	19.1	63.2	14.7	0.0	0.1	2.9	100.0
6	Otter Trawl	OPEN	all	MA	lg	576,253	12.2	60.0	24.1	0.0	0.2	3.5	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,743,081	32.2	42.8	19.0	0.3	0.1	5.7	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,663,976	12.1	54.9	27.0	0.0	0.0	5.9	100.0
41	Dredge, Scallop	AA	LIM	NE	all	284,522	83.3	0.0	16.6	0.0	0.0	0.1	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	284,450	97.2	0.0	2.2	0.0	0.0	0.5	100.0
54	Pots and Traps, Fish	OPEN	all	NE	all	166,258	0.0	9.2	2.0	0.0	0.0	88.9	100.0
43 Other fleets filtered out						830,982	38.2	33.4	24.1	0.8	2.7	0.7	100.0
Total						9,454,300	26.9	48.3	19.0	0.2	0.3	5.4	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2016 through June 2017 data.

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
50 Other fleets filtered out						153,808	30.8	0.0	7.9	0.0	58.1	3.3	100.0
Total						153,808	30.8	0.0	7.9	0.0	58.1	3.3	100.0

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	261,159	39.6	5.4	54.7	0.3	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,114,341	10.8	11.1	77.2	0.6	0.0	0.3	100.0
8	Otter Trawl	OPEN	all	NE	lg	2,213,604	14.8	67.3	17.4	0.1	0.1	0.4	100.0
41	Dredge, Scallop	AA	LIM	NE	all	277,983	75.1	0.1	24.6	0.1	0.0	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	299,416	81.9	0.0	18.1	0.0	0.0	0.0	100.0
45 Other fleets filtered out						2,011,187	12.8	69.2	12.7	0.0	4.2	1.1	100.0
Total						6,177,690	20.4	48.9	28.6	0.2	1.4	0.5	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2016 through June 2017 data.

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	249,380	36.5	62.5	0.9	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	770,127	16.0	75.1	8.3	0.0	0.0	0.6	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,667,796	20.1	69.4	10.5	0.0	0.0	0.0	100.0
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	301,175	3.2	4.7	0.0	0.0	92.1	0.0	100.0
40	Dredge, Scallop	AA	LIM	MA	all	804,338	96.8	3.1	0.0	0.0	0.0	0.1	100.0
41	Dredge, Scallop	AA	LIM	NE	all	2,912,236	84.2	11.5	2.1	0.0	2.2	0.0	100.0
43	Dredge, Scallop	OPEN	GEN	NE	all	209,471	48.9	45.8	5.3	0.0	0.0	0.0	100.0
44	Dredge, Scallop	OPEN	LIM	MA	all	1,008,727	82.8	12.1	4.9	0.0	0.1	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	2,568,494	83.2	13.1	3.7	0.0	0.0	0.0	100.0
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	185,208	15.0	0.0	85.0	0.0	0.0	0.0	100.0
40 Other fleets filtered out						565,515	44.3	38.0	12.2	0.0	5.1	0.3	100.0
Total						11,242,466	63.5	27.0	6.1	0.0	3.3	0.1	100.0

Species Group: RED DEEPSEA CRAB (Chaceon quinque-dens)

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	40,938	37.5	0.0	62.5	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	238,190	99.9	0.0	0.1	0.0	0.0	0.0	100.0
61	Pots and Traps, Crab	OPEN	all	MA	all	183,508	85.6	0.0	0.0	0.0	0.0	14.4	100.0
62	Pots and Traps, Crab	OPEN	all	NE	all	1,130,523	77.6	0.6	0.0	0.0	0.2	21.6	100.0
46 Other fleets filtered out						59,503	37.7	0.0	62.3	0.0	0.0	0.0	100.0
Total						1,652,662	79.3	0.4	3.8	0.0	0.1	16.4	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2016 through June 2017 data.

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
40	Dredge, Scallop	AA	LIM	MA	all	11,483,127	86.0	0.0	0.0	0.0	2.7	11.3	100.0
41	Dredge, Scallop	AA	LIM	NE	all	20,448,091	86.0	0.9	0.5	0.0	3.2	9.4	100.0
48 Other fleets filtered out						8,723,472	77.3	0.1	9.0	0.0	7.0	6.7	100.0
Total						40,654,689	84.1	0.5	2.2	0.0	3.8	9.4	100.0

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	4,235,716	95.6	0.0	4.3	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	8,102,891	92.0	0.1	7.5	0.0	0.0	0.4	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,129,804	86.7	0.0	13.1	0.0	0.0	0.2	100.0
8	Otter Trawl	OPEN	all	NE	lg	17,106,984	74.8	0.1	22.9	0.2	0.0	2.0	100.0
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xl	901,098	64.5	0.2	29.5	2.4	3.1	0.3	100.0
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	2,526,345	34.7	0.7	43.6	0.2	18.5	2.3	100.0
40	Dredge, Scallop	AA	LIM	MA	all	2,422,025	99.9	0.0	0.1	0.0	0.0	0.0	100.0
41	Dredge, Scallop	AA	LIM	NE	all	6,110,822	99.3	0.0	0.7	0.0	0.0	0.0	100.0
42	Dredge, Scallop	OPEN	GEN	MA	all	1,744,227	96.7	0.0	3.3	0.0	0.0	0.0	100.0
43	Dredge, Scallop	OPEN	GEN	NE	all	711,886	84.9	0.0	15.1	0.0	0.0	0.0	100.0
44	Dredge, Scallop	OPEN	LIM	MA	all	3,553,941	100.0	0.0	0.0	0.0	0.0	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	8,053,965	93.2	0.0	6.8	0.0	0.0	0.0	100.0
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	873,221	59.6	0.0	40.4	0.0	0.0	0.0	100.0
37 Other fleets filtered out						2,967,291	94.6	0.0	5.3	0.0	0.0	0.1	100.0
Total						61,440,218	85.9	0.1	12.4	0.1	0.8	0.7	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2016 through June 2017 data.

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	435,752	74.9	23.1	0.0	0.0	1.6	0.3	100.0
7	Otter	Trawl	OPEN	all	NE	sm	2,512,903	81.5	4.4	9.4	0.0	3.5	1.3	100.0
8	Otter	Trawl	OPEN	all	NE	lg	729,921	94.4	0.4	4.8	0.0	0.4	0.0	100.0
47 Other fleets filtered out							271,855	95.0	0.3	3.3	0.0	1.4	0.0	100.0
Total							3,950,430	84.1	5.4	7.1	0.0	2.5	0.8	100.0

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, Bottom		OPEN	all	NE	all	524,720	73.9	0.0	21.6	0.0	0.0	4.5	100.0
5	Otter Trawl		OPEN	all	MA	sm	3,028,608	98.8	0.0	0.0	0.0	0.0	1.2	100.0
6	Otter Trawl		OPEN	all	MA	lg	1,771,048	99.9	0.0	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl		OPEN	all	NE	sm	1,524,249	77.3	0.0	0.0	0.1	0.0	22.5	100.0
8	Otter Trawl		OPEN	all	NE	lg	4,121,471	92.9	0.0	7.1	0.0	0.0	0.0	100.0
24	Otter Trawl, Twin, Shrimp		OPEN	all	MA	sm	318,403	100.0	0.0	0.0	0.0	0.0	0.0	100.0
30	Gillnet, Sink, Anchor, Drift		OPEN	all	MA	sm	213,992	46.4	0.0	53.2	0.0	0.3	0.0	100.0
31	Gillnet, Sink, Anchor, Drift		OPEN	all	MA	lg	219,709	10.5	0.0	12.9	0.0	76.6	0.0	100.0
34	Gillnet, Sink, Anchor, Drift		OPEN	all	NE	lg	516,823	79.5	3.6	12.8	0.0	2.2	1.9	100.0
41 Other fleets filtered out							739,464	93.1	0.0	3.2	0.3	3.2	0.2	100.0
Total							12,978,486	90.1	0.2	4.9	0.0	1.6	3.2	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2016 through June 2017 data.

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	1,519,557	88.4	3.4	3.8	0.0	0.8	3.7	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,236,401	88.0	0.8	4.4	0.0	2.8	4.0	100.0
48 Other fleets filtered out						689,158	95.0	3.3	0.4	0.0	1.1	0.2	100.0
Total						4,445,115	89.2	2.1	3.6	0.0	1.8	3.3	100.0

Species Group: SURFLAM (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
50 Other fleets filtered out						1,806,938	99.6	0.3	0.0	0.0	0.0	0.0	100.0
Total						1,806,938	99.6	0.3	0.0	0.0	0.0	0.0	100.0

Species Group: TILEFISH

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
50 Other fleets filtered out						31,614	50.1	17.0	19.6	0.0	12.1	1.1	100.0
Total						31,614	50.1	17.0	19.6	0.0	12.1	1.1	100.0

Appendix Table 3B Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

Species: BLACK SEA BASS (Centropristis striata)

Fleet						Percentage by Discard Reason Category							Total
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	
5	Otter Trawl	OPEN	all	MA	sm	631,708	22.0	32.0	38.5	0.0	0.0	7.5	100.0
6	Otter Trawl	OPEN	all	MA	lg	146,830	3.2	62.5	33.0	0.1	0.0	1.2	100.0
7	Otter Trawl	OPEN	all	NE	sm	391,223	7.7	8.5	74.4	0.5	0.0	8.8	100.0
8	Otter Trawl	OPEN	all	NE	lg	114,213	2.8	1.7	95.4	0.1	0.0	0.0	100.0
53	Pots and Traps, Fish	OPEN	all	MA	all	145,469	1.1	97.0	1.9	0.0	0.0	0.0	100.0
54	Pots and Traps, Fish	OPEN	all	NE	all	160,995	0.0	6.2	2.0	0.0	0.0	91.8	100.0
44 Other fleets filtered out						144,928	53.2	2.8	43.8	0.0	0.1	0.0	100.0
Total						1,735,364	14.7	27.9	43.9	0.1	0.0	13.4	100.0

Species: FLUKE (Paralichthys dentatus)

Fleet						Percentage by Discard Reason Category							Total
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	
5	Otter Trawl	OPEN	all	MA	sm	150,126	4.8	25.8	64.1	0.0	0.8	4.5	100.0
6	Otter Trawl	OPEN	all	MA	lg	204,163	1.7	44.3	44.5	0.0	0.5	9.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	290,059	4.3	8.2	74.0	2.3	0.2	10.9	100.0
8	Otter Trawl	OPEN	all	NE	lg	509,897	0.2	6.9	73.0	0.0	0.1	19.8	100.0
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	99,698	23.2	76.1	0.0	0.0	0.0	0.7	100.0
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xl	96,093	18.4	0.4	50.1	6.1	22.0	3.0	100.0
40	Dredge, Scallop	AA	LIM	MA	all	131,495	85.6	2.2	12.2	0.0	0.0	0.0	100.0
41	Dredge, Scallop	AA	LIM	NE	all	277,342	82.9	0.0	17.0	0.0	0.0	0.1	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	254,810	97.0	0.0	2.4	0.0	0.0	0.6	100.0
41 Other fleets filtered out						196,278	54.5	8.3	34.8	0.5	0.6	1.3	100.0
Total						2,209,962	34.5	12.8	43.4	0.6	1.2	7.5	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 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	2,122,944	19.2	76.6	3.0	0.0	0.0	1.2	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,061,800	39.0	51.8	4.6	0.0	0.0	4.6	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,039,866	18.3	81.3	0.0	0.0	0.0	0.3	100.0
47 Other fleets filtered out						284,364	27.0	72.1	0.8	0.0	0.1	0.0	100.0
Total						5,508,973	26.8	68.0	2.9	0.0	0.0	2.2	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	113,754	0.1	98.4	0.5	0.0	1.0	0.0	100.0
49 Other fleets filtered out						33,837	29.5	7.1	63.2	0.0	0.3	0.0	100.0
Total						147,591	6.9	77.5	14.9	0.0	0.8	0.0	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
8	Otter Trawl	OPEN	all	NE	lg	24,850	0.0	80.0	0.0	3.4	0.0	16.6	100.0
59	Pots and Traps, Lobster	OPEN	all	NE	all	45,140	4.8	0.0	95.2	0.0	0.0	0.0	100.0
48 Other fleets filtered out						70,582	9.2	21.3	13.2	0.0	31.8	24.4	100.0
Total						140,573	6.2	24.8	37.2	0.6	16.0	15.2	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 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	30,339	4.5	53.8	34.2	0.0	0.0	7.6	100.0
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	13,384	0.0	52.5	0.0	0.0	15.1	32.4	100.0
48 Other fleets filtered out						3,762	6.6	85.0	8.5	0.0	0.0	0.0	100.0
Total						47,485	3.4	55.9	22.5	0.0	4.3	14.0	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, Bottom	OPEN	all	NE	all	6,994	72.9	0.0	27.1	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	44,198	0.0	0.0	100.0	0.0	0.0	0.0	100.0
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	2,254	11.8	0.0	88.2	0.0	0.0	0.0	100.0
47 Other fleets filtered out						1,848	40.9	0.0	59.1	0.0	0.0	0.0	100.0
Total						55,294	11.1	0.0	88.9	0.0	0.0	0.0	100.0

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	741,297	7.5	11.8	80.1	0.0	0.0	0.6	100.0
8	Otter Trawl	OPEN	all	NE	lg	882,795	0.2	99.8	0.0	0.0	0.0	0.0	100.0
48 Other fleets filtered out						1,336,321	0.6	98.6	0.5	0.0	0.2	0.1	100.0
Total						2,960,414	2.2	77.2	20.3	0.0	0.1	0.2	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

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
2	Longline, Bottom	OPEN	all	NE	all	1,909	12.8	0.0	87.2	0.0	0.0	0.0	100.0
5	Otter Trawl	OPEN	all	MA	sm	12,656	75.3	0.0	24.7	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	3,268	94.5	0.0	5.5	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	8,712	98.4	0.0	1.6	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	59,236	72.3	0.0	27.7	0.0	0.0	0.0	100.0
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	4,503	100.0	0.0	0.0	0.0	0.0	0.0	100.0
59	Pots and Traps, Lobster	OPEN	all	NE	all	10,661	76.9	0.0	23.1	0.0	0.0	0.0	100.0
43 Other fleets filtered out						5,307	37.3	0.0	62.7	0.0	0.0	0.0	100.0
Total						106,252	74.3	0.0	25.7	0.0	0.0	0.0	100.0

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
50 Other fleets filtered out							133,156	0.3	69.9	0.5	0.0	28.9	0.4	100.0
Total							133,156	0.3	69.9	0.5	0.0	28.9	0.4	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
8	Otter	Trawl	OPEN	all	NE	lg	271,687	18.9	81.1	0.0	0.0	0.0	0.0	100.0
49 Other fleets filtered out							38,223	96.7	1.5	0.3	0.0	1.5	0.0	100.0
Total							309,910	28.5	71.3	0.0	0.0	0.2	0.0	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

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
8	Otter	Trawl	OPEN	all	NE	lg	106,396	94.2	5.7	0.1	0.0	0.0	0.0	100.0
49 Other fleets filtered out							35,050	23.7	0.0	21.4	0.0	54.9	0.0	100.0
Total							141,447	76.7	4.3	5.4	0.0	13.6	0.0	100.0

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	101,238	59.2	1.0	39.7	0.1	0.0	0.0	100.0
6	Otter	Trawl	OPEN	all	MA	lg	189,127	47.3	0.0	52.5	0.2	0.0	0.0	100.0
7	Otter	Trawl	OPEN	all	NE	sm	77,641	22.7	0.0	77.3	0.0	0.0	0.0	100.0
8	Otter	Trawl	OPEN	all	NE	lg	379,592	30.3	0.0	69.6	0.1	0.0	0.0	100.0
41	Dredge, Scallop		AA	LIM	NE	all	151,572	84.5	0.0	15.5	0.0	0.0	0.0	100.0
42	Dredge, Scallop		OPEN	GEN	MA	all	19,371	50.9	0.0	49.1	0.0	0.0	0.0	100.0
43	Dredge, Scallop		OPEN	GEN	NE	all	43,441	36.9	0.0	63.1	0.0	0.0	0.0	100.0
44	Dredge, Scallop		OPEN	LIM	MA	all	22,494	77.4	0.0	22.6	0.0	0.0	0.0	100.0
45	Dredge, Scallop		OPEN	LIM	NE	all	82,865	72.8	0.0	27.2	0.0	0.0	0.0	100.0
41 Other fleets filtered out							41,430	62.3	0.0	37.7	0.0	0.0	0.0	100.0
Total							1,108,771	48.6	0.1	51.2	0.1	0.0	0.0	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

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	51,603	13.4	14.7	71.8	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	38,644	9.7	9.2	80.1	1.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	174,953	8.3	4.0	85.0	2.6	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	100,409	2.2	63.6	32.9	0.0	0.4	0.8	100.0
41	Dredge, Scallop	AA	LIM	NE	all	37,801	79.8	0.1	20.1	0.0	0.0	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	122,863	87.5	0.0	12.5	0.0	0.0	0.0	100.0
44 Other fleets filtered out						30,833	40.2	1.0	58.4	0.0	0.4	0.0	100.0
Total						557,106	31.9	14.8	52.2	0.9	0.1	0.2	100.0

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	30,869	61.4	22.6	16.0	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	19,568	25.2	42.8	31.8	0.2	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	23,079	11.6	6.2	81.9	0.0	0.3	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	101,600	2.9	84.7	11.7	0.0	0.7	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	13,529	95.5	0.0	4.5	0.0	0.0	0.0	100.0
45 Other fleets filtered out						18,274	72.1	2.2	21.9	3.8	0.0	0.0	100.0
Total						206,919	26.9	49.9	22.5	0.4	0.4	0.0	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

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
7	Otter Trawl	OPEN	all	NE	sm	26,956	24.2	1.8	71.7	2.3	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	58,895	1.1	64.8	32.8	0.0	0.0	1.3	100.0
41	Dredge, Scallop	AA	LIM	NE	all	64,966	47.2	0.0	52.2	0.6	0.0	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	70,657	80.1	0.0	19.9	0.0	0.0	0.0	100.0
46 Other fleets filtered out						41,300	22.7	9.7	67.3	0.0	0.3	0.0	100.0
Total						262,773	39.5	16.2	43.5	0.4	0.1	0.3	100.0

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	5,699	100.0	0.0	0.0	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	7,020	76.1	0.0	23.9	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	3,400	100.0	0.0	0.0	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	3,987	82.5	0.0	10.4	0.0	7.1	0.0	100.0
17	Otter Trawl, Twin	OPEN	all	NE	sm	1,357	100.0	0.0	0.0	0.0	0.0	0.0	100.0
45 Other fleets filtered out						1,860	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Total						23,323	89.8	0.0	9.0	0.0	1.2	0.0	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

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	176,878	81.9	18.1	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,141,722	87.5	2.5	10.0	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	117,279	95.4	1.1	3.5	0.0	0.0	0.0	100.0
45	Dredge, Scallop	OPEN	LIM	NE	all	45,082	93.0	0.0	7.0	0.0	0.0	0.0	100.0
46 Other fleets filtered out						65,211	98.4	0.0	1.3	0.0	0.3	0.0	100.0
Total						1,546,172	88.1	4.0	7.9	0.0	0.0	0.0	100.0

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
5	Otter Trawl	OPEN	all	MA	sm	253,174	69.2	27.4	0.0	0.0	2.8	0.6	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,367,781	76.1	6.0	9.0	0.0	6.5	2.4	100.0
8	Otter Trawl	OPEN	all	NE	lg	608,655	94.3	0.2	5.1	0.0	0.4	0.0	100.0
47 Other fleets filtered out						151,325	95.1	0.5	2.1	0.0	2.3	0.0	100.0
Total						2,380,935	81.2	6.5	6.6	0.0	4.3	1.4	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
50 Other fleets filtered out						78,215	94.8	0.3	0.6	0.0	0.8	3.5	100.0
Total						78,215	94.8	0.3	0.6	0.0	0.8	3.5	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

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	698,968	87.1	5.8	0.0	0.0	0.0	7.1	100.0
7	Otter	Trawl	OPEN	all	NE	sm	1,426,932	99.0	0.9	0.0	0.0	0.0	0.0	100.0
48 Other fleets filtered out							356,368	94.4	5.5	0.0	0.0	0.0	0.0	100.0
Total							2,482,269	95.0	3.0	0.0	0.0	0.0	2.0	100.0

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	555,660	99.9	0.0	0.1	0.0	0.1	0.0	100.0
7	Otter	Trawl	OPEN	all	NE	sm	342,562	77.1	0.0	0.0	0.0	5.6	17.3	100.0
48 Other fleets filtered out							174,525	99.3	0.0	0.2	0.0	0.0	0.5	100.0
Total							1,072,747	92.5	0.0	0.1	0.0	1.8	5.6	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
7	Otter	Trawl	OPEN	all	NE	sm	405,975	53.9	1.6	32.9	0.0	9.6	2.0	100.0
49 Other fleets filtered out							385,599	72.0	3.7	18.6	0.0	5.6	0.1	100.0
Total							791,574	62.7	2.6	25.9	0.0	7.6	1.1	100.0

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2016 through June 2017 data.

Species: BLUELINE TILEFISH (Caulolatilus microps)

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
1	Longline, Bottom	OPEN	all	MA	all	4,332	0.0	0.4	94.1	0.0	5.5	0.0	100.0
49 Other fleets filtered out						6,960	83.5	11.4	2.9	0.0	0.0	2.1	100.0
Total						11,292	51.5	7.2	37.9	0.0	2.1	1.3	100.0

Species: GOLDEN 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
50 Other fleets filtered out						17,913	45.3	24.3	8.2	0.0	21.0	1.2	100.0
Total						17,913	45.3	24.3	8.2	0.0	21.0	1.2	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 Row Gear Type	Access Area	Trip Category	Region	Mesh Group	Fleet Abbreviation
1	Longline, Bottom	OPEN	all	MA	all	LLB MA (Row 1)
2	Longline, Bottom	OPEN	all	NE	all	LLB 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	Otter Trawl, Scallop	AA	GEN	MA	sm	OTSC AA GEN sm MA (Row 9)
10	Otter Trawl, Scallop	AA	GEN	MA	lg	OTSC AA GEN lg MA (Row 10)
11	Otter Trawl, Scallop	OPEN	GEN	MA	sm	OTSC OPEN GEN sm MA (Row 11)
12	Otter Trawl, Scallop	OPEN	GEN	MA	lg	OTSC OPEN GEN lg MA (Row 12)
13	Otter Trawl, Scallop	OPEN	LIM	MA	sm	OTSC OPEN LIM sm MA (Row 13)
14	Otter Trawl, Scallop	OPEN	LIM	MA	lg	OTSC OPEN LIM lg MA (Row 14)
15	Otter Trawl, Twin	OPEN	all	MA	sm	OTT sm MA (Row 15)
16	Otter Trawl, Twin	OPEN	all	MA	lg	OTT lg MA (Row 16)
17	Otter Trawl, Twin	OPEN	all	NE	sm	OTT sm NE (Row 17)
18	Otter Trawl, Ruhle	OPEN	all	MA	sm	OTR sm MA (Row 18)
19	Otter Trawl, Ruhle	OPEN	all	NE	sm	OTR sm NE (Row 19)
20	Otter Trawl, Ruhle	OPEN	all	NE	lg	OTR lg NE (Row 20)
21	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	OTH lg NE (Row 21)
22	Otter Trawl, Shrimp	OPEN	all	MA	sm	OTSH sm MA (Row 22)
23	Otter Trawl, Shrimp	OPEN	all	NE	sm	OTSH sm NE (Row 23)
24	Otter Trawl, Twin, Shrimp	OPEN	all	MA	sm	OTTSH sm MA (Row 24)
25	Otter Trawl, Other	OPEN	all	MA	sm	OTO sm MA (Row 25)
26	Otter Trawl, Other	OPEN	all	MA	lg	OTO lg MA (Row 26)
27	Otter Trawl, Other	OPEN	all	NE	sm	OTO sm NE (Row 27)
28	Floating Trap	OPEN	all	MA	all	FT MA (Row 28)
29	Floating Trap	OPEN	all	NE	all	FT NE (Row 29)
30	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	GN sm MA (Row 30)
31	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	GN lg MA (Row 31)
32	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	GN xlg MA (Row 32)
33	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	GN sm NE (Row 33)
34	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	GN lg NE (Row 34)
35	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	GN xlg NE (Row 35)
36	Purse Seine	OPEN	all	MA	all	PS MA (Row 36)
37	Purse Seine	OPEN	all	NE	all	PS NE (Row 37)
38	Dredge, Scallop	AA	GEN	MA	all	DRSC AA GEN MA (Row 38)
39	Dredge, Scallop	AA	GEN	NE	all	DRSC AA GEN NE (Row 39)
40	Dredge, Scallop	AA	LIM	MA	all	DRSC AA LIM MA (Row 40)
41	Dredge, Scallop	AA	LIM	NE	all	DRSC AA LIM NE (Row 41)
42	Dredge, Scallop	OPEN	GEN	MA	all	DRSC OPEN GEN MA (Row 42)
43	Dredge, Scallop	OPEN	GEN	NE	all	DRSC OPEN GEN NE (Row 43)
44	Dredge, Scallop	OPEN	LIM	MA	all	DRSC OPEN LIM MA (Row 44)
45	Dredge, Scallop	OPEN	LIM	NE	all	DRSC OPEN LIM NE (Row 45)
46	Danish Seine	OPEN	all	MA	all	DS MA (Row 46)

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 Row Gear Type	Access Area	Trip Category	Region	Mesh Group	Fleet Abbreviation
47	Danish Seine	OPEN	all	NE	all	DS NE (Row 47)
48	Trawl, Mid-water Paired&Single	AA	all	NE	sm	TMW AA sm NE (Row 48)
49	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	TMW OPEN sm MA (Row 49)
50	Trawl, Mid-water Paired&Single	OPEN	all	NE	sm	TMW OPEN sm NE (Row 50)
51	Pots and Traps, Other	OPEN	all	MA	all	PTO MA (Row 51)
52	Pots and Traps, Other	OPEN	all	NE	all	PTO NE (Row 52)
53	Pots and Traps, Fish	OPEN	all	MA	all	PTF MA (Row 53)
54	Pots and Traps, Fish	OPEN	all	NE	all	PTF NE (Row 54)
55	Pots and Traps, Conch	OPEN	all	MA	all	PTC MA (Row 55)
56	Pots and Traps, Conch	OPEN	all	NE	all	PTC NE (Row 56)
57	Pots and Traps, Hagfish	OPEN	all	NE	all	PTH NE (Row 57)
58	Pots and Traps, Lobster	OPEN	all	MA	all	PTL MA (Row 58)
59	Pots and Traps, Lobster	OPEN	all	NE	all	PTL NE (Row 59)
60	Weir	OPEN	all	NE	all	WR NE (Row 60)
61	Pots and Traps, Crab	OPEN	all	MA	all	PTCR MA (Row 61)
62	Pots and Traps, Crab	OPEN	all	NE	all	PTCR NE (Row 62)
63	Beam Trawl	OPEN	all	MA	sm	BT sm MA (Row 63)
64	Beam Trawl	OPEN	all	NE	lg	BT lg NE (Row 64)
65	Dredge, Other	OPEN	all	MA	all	DRO MA (Row 65)
66	Dredge, Urchin	OPEN	all	NE	all	DRU NE (Row 66)
67	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	DRC MA (Row 67)
68	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	DRC NE (Row 68)
	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:

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

where

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

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:

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

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

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

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

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:

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

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:

$$(12) \quad \hat{SD}_{30j,h} = \hat{TD}_{30j,h} * \overline{DA}_h$$

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, $\hat{TF}_h$ for fleet h is defined as:

$$(14) \quad \hat{TF}_h = \hat{SF}_h / \overline{DA}_h$$

where $\hat{SF}_h$ 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

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

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