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2019 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
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Information Quality Act Compliance: In accordance with section 515 of Public Law 106-554, the Northeast Fisheries Science Center completed both technical and policy reviews for this report. These predissemination reviews are on file at the NEFSC Editorial Office.

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LIST OF ACRONYMS AND ABBREVIATIONS

AA = Access area
AMS = Allocation Management System
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
GEN = General category
IFM = industry funded monitoring
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 2017 through June 2018 time period and the expected coverage needed by at-sea observers for northeastern US fisheries for the April 2019 through March 2020 time period using the Standardized Bycatch Reporting Methodology.

An estimated 58,298 mt (128,526,054 lb) of federally regulated species were discarded during the July 2017 through June 2018 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.

An estimated 7,667 sea days are needed to achieve a precision-based performance standard (30% coefficient of variation of the discard estimate) for the 14 fish and invertebrate species groups across 63 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 United States 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 2019 are similar to those conducted in 2018 (Wigley and Tholke 2018) 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 fleets[1]. Additionally, discard reasons associated with the discarded species are summarized. This document differs from SBRM documents prior to 2012 in thatit does not include a sea day prioritization[2] and does not contain information about sea turtles.

METHODS

Data Sources

The data sets used include July 2017 through June 2018 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, the Greater Atlantic Regional Fisheries Office allocation management system (AMS) and the National Oceanic and Atmospheric Administration (NOAA) Marine Recreational Information Program (MRIP) database.

During the July 2017 through June 2018 time period, the NEFSC's Fisheries Sampling Branch managed 3 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 Fisheries Sampling Branch employs trained sea-going observers and monitors to collect these data. Fish and invertebrate

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

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

species are recorded by weight. Conversion factors were applied to convert any dressed-weight data to live[3]-weight equivalents.

For this analysis, only observed hauls from non-state funded NEFOP[4] 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 US Southeast Region (statistical areas ≥ "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). Trips using shrimp twinned trawl (negear = 450) were removed from the analyses because these trips are subject to the South Atlantic Fishery Management Council's shrimp FMP that has an SBRM provision and are therefore covered by the Southeast Fisheries Science Center's observer program (Scott-Denton et al. 2012). Hauls with no catch reported, hauls using a try net[5], hauls that contained species with discard reason "090" (discards by mistake), 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 Ruhle trawl trip, 2 observed Mid-Atlantic (MA) large-mesh belly-panel otter trawl trips, 7 observed MA blue crab pot and trap trips, 1 NE large mesh scallop beam trawl trip, and 6 observed MA crab dredge trips for which there were no corresponding VTR trips for the gear type. There were 2 observed MA small mesh access area GEN scallop trawl trips with no corresponding VTR trips for the calendar quarter. Consequently, these 19 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 departure[6]; ports in states from Maine to Rhode Island constituted the NE region, and ports in states from Connecticut to North Carolina constituted the MA region. Gear type was based on Northeast gear codes (*negear)*. Some gear codes were combined: sink, anchored, and

[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 = 230-235, and 242) 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 2019 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 exhibited the same general pattern as in the VTR data. An updated analysis using July 2007 through June 2011 data found similar results (Wigley et al. 2012). While data from both the VTR and OB are 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).

drift gillnets, and single and paired mid-water trawls. Trips for which gear was unknown were excluded. Mesh size groups were formed for all trawl[7] and gillnet 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). Three access area categories[8] were formed: access area (AA), all (access and nonaccess areas combined), and open area (OPEN). The sea scallop fishery was divided into general (GEN) and limited (LIM) trip categories using the AMS activity code. All other fisheries were combined into a trip category called "all."

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 permit[9]. (See NOAA Fisheries Greater Atlantic Regional Fisheries Office Vessel Trip Report Instructions for guidance.) These self-reported data[10] 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.

[7] In the 2018 analyses and onward, specific mesh size groups were applied to all trawl gear. In analyses prior to 2018, only otter trawl, Ruhle 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.

[8] Trips associated with the scallop trawl and scallop dredge fleets were partitioned into "AA" or "OPEN" access categories based on AMS activity code. Trips associated with the NE small mesh mid-water fleet (including exempted groundfish access area trips) were grouped into "all" access category. All other trips associated with the remaining fleets were assigned "OPEN" access category.

[9] 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 2019; hence, the 2019 SBRM discard estimation and sample size analysis do not include fishing trips of vessels that hold only a federal commercial lobster permit.

[10] See Wigley et al. 2007 for more details on self-reported VTR data.

There are some fleets that contain few VTR trips. In the 2019 analysis[11], 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 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" are: gear unknown (negear = 999), harpoon (negear = 030), longline pelagic (negear = 040), rakes (negear =250), and diving (negear = 330).

In this analysis, the NE small mesh mid-water trawl trips fishing in the groundfish access area (an exempted fishery for which 100% monitoring coverage was required[12]) have been grouped together with NE small mesh mid-water trawl trips fishing in open areas to form a fleet, the NE small mesh mid-water trawl fleet (Row 43—row references in this text apply to Tables 2-7). This represents a modification from 2016 through 2018 SBRM analyses; see Discussion for further information.

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 commercial[13] 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. 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 trips[14] 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] Prior to the 2018 analysis, fleets with few trips were handled in a similar fashion qualitatively and not formally described in the documents.

[12] For further information see the Federal Register RIN 0648-AY47.

[13] 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.

[14] 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 2017 through June 2018 time period by using a combined discard/kept (d/k) ratio estimator (Cochran 1963), where d = discarded pounds of a given species group, and k = the kept pounds of all species (i.e., any species retained during the trip). Total discards (in weight) were derived by multiplying the estimated discard rate of each fleet by the corresponding fleet landings in the VTR database and then summing over fleets. In this analysis, no survival ratios were applied to discard estimates.

Simple imputation methods were used to fill quarterly cells for which there were fewer than 3 observed trips. Data from adjoining strata were pooled to impute estimates for cells with 0, 1, or 2 trips. In this imputation only the temporal stratification (calendar quarter) was relaxed to an annual aggregation even though seasonal variation can occur for some species. This simple imputation could not be applied to fleets where observer coverage was low or missing throughout the year (i.e., too few data to support the simple imputation approach). In these cases, imputed values were not used, and the fleet was designated as a fleet in need of pilot coverage[15]. 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 reason category

[15] 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).

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 the July 2017 through June 2018 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 from discards.

The 2019 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 from 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 "2019 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 that 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 63 fleets uniquely identified in the July 2017 through June 2018 data (Tables 2 and 3; Appendix Table 1). Based upon the industry activity during this time period, the NE large mesh other otter trawl fleet (Row 23) was added to the collection of fleets analyzed. Additionally, the NE small mesh mid-water trawl fleet (Row 43) was added as new fleet based on a decision to merge the NE OPEN small mesh mid-water trawl fleet with the NE AA small mesh mid-water trawl fleet (See Discussion). The aforementioned fleets are indicated with a "+" in Tables 2 and 3. The MA large mesh Ruhle trawl fleet (Row 16) and the MA large mesh beam trawl fleet (Row 58) are 2 fleets that were added to this year's analysis that were not present in last year's analysis, but had been included in one or more previous SBRM analyses.

Fleets in the 2018 analysis with either no activity or with less than 3 trips per quarter in all quarters were excluded from this analysis; these are: NE Danish seine, MA large mesh Other otter trawl, NE large mesh Ruhle trawl, MA small mesh OPEN GEN scallop trawl, MA small mesh OPEN LIM scallop trawl, and MA large mesh OPEN LIM scallop 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 11 unique fleets (MA small mesh Ruhle trawl [Row 15], MA small mesh other otter trawl [Row 21], NE large mesh other otter trawl [Row 23], MA floating trap [Row 24], MA Danish seine [Row 42], MA other pots and traps [Row 45], NE hagfish pots and traps [Row 51], NE weir [Row 54], MA and NE large mesh beam trawl [Rows 58 and 59], and NE urchin dredge [Row 61] in Tables 2 and 3) were combined into a single aggregated fleet labeled "Confidential fleets" for reporting purposes in Tables 4 and 5. An additional confidential fleet, MA AA GEN small mesh scallop trawl (Row 9, Tables 2 and 3), was not aggregated with the confidential fleets because this fleet was the only confidential fleet with some OB data (confidential data would be exposed); this fleet was aggregated in "Other minor fleets" 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 63 fleets examined, 28 fleets had little or no observer data: 7 fleets had sparse observer data across all quarters, while 21 fleets were missing observer data in all quarterly cells. The fleets with no observer coverage include trawl, floating trap, pot and trap fleets, and beam trawl fleets, several of which have little industry activity. No discard estimation was performed for the 21 fleets with no observer coverage, and they were designated as fleets in need of pilot coverage (Tables 2 and 3; Appendix Table 1). The 7 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 35 remaining fleets (designated as nonpilot fleets; Rows 1-9, 12, 13, 26-28, 30, 31, 33-41, 43, 47-50, 52, 53, 56, 62, and 63), estimates of discards, and their associated variance were derived and used to determine the sample sizes needed for a 30% CV. Of the 35 fleets, there were 17 fleets (Rows 1, 3, 12, 13, 28, 33, 34, 40, 43, 47-50, 52, 56, 62, and 63) where the simple imputation was applied (Tables 2 and 3).

Thus, for the discard estimation and precision analysis, 21 fleets had no discard estimation, and 42 fleets had discards estimated. For the sample size analysis, 35 fleets had sample sizes derived from the discard variances, and 28 fleets had sample sizes based upon pilot coverage.

During the July 2017 through June 2018 period, 3,560 trips (9,594 sea days) were observed. When these trips were stratified, some trips were partitioned between strata, resulting in 3,793 trips (10,158 sea 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 42 fleets with some observer coverage, the annual percentage of observed trips by fleet ranged between 0.06% (NE lobster pot, Row 53; Table 2) to 33% (NE small mesh twin otter trawl, Row 14; Table 2). For the 35 nonpilot fleets, the percentage of observed trips ranged between 0.06% (NE lobster pot, Row 53) and 30% (MA small mesh AA GEN scallop otter trawl fleet, Row 9). Over all fleets, the percentage of observed trips was 4.7% (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 66% (Table 4). For the 34 nonconfidential, nonpilot fleets, the percentage of observer coverage ranged between 11% and 99% with an average of 73% (Table 4). Twenty-eight of the 34 fleets had a percentage greater than or equal to 52% with an average of 85%. This finding indicates that the majority of kept weight within the fleet was associated with statistical areas and quarters with observer coverage. Additionally, these 28 fleets composed 58% 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 63 uniquely identified fleets account for almost all of the total VTR landings.

Annual VTR landings for all fleets and estimated discards (live weight, in pounds) with associated precision (CV and SE) for 41 individual fleets (Rows 1-8, 11-14, 17-19, 26-28, 30, 31, 33-41, 43, 44, 47-50, 52, 53, 55, 56, 62, and 63) 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 10 nonconfidential, pilot fleets (Rows 10, 16, 20, 22, 25, 29, 32, 46, 57, and 60) 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, 58,298 mt (128,526,054 lb; live weight) of discards for the 14 species groups occurred during the July 2017 through June 2018 period (Table 5C). The majority (60%) of the discards comprises 2 species groups: skates (Rajidae; 44%) and sea scallop

(*Placopecten magellanicus*; 16%); the remaining SBRM species groups each accounted for less than or equal to 11% (Table 5A).

The percentage of discards to total catch varied among the 14 species groups (Table 5A; Fig. 1A) and individual species (Table 5B; Fig. 1B). One species group (SAL) had zero discards (this species group is not presented in Fig. 1A or Appendix Table 3A); in 3 species groups (SCOQ, HERR, and TIL) discards were less than 1% of total catch; in 3 species groups (BLUE, SBM, and SCAL) 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 (RCRAB, FSB, 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 (68%), monkfish (*Lophius americanus*; 41%), spiny dogfish (*Squalus acanthias;* 38%), fluke-scup-black seabass (*Paralichthys dentatus, Stenotomus chrysops, Centropristis striata,* respectively; 37%; 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*; 100%), ocean pout (*Zoarces americanus*; 100%), and windowpane flounder (*Scophthalmus aquosus*; >99%); no possession is allowed for these 3 species. Atlantic halibut (*Hippoglossus hippoglossus*; 71%) have a 1 fish trip limit. Offshore hake (*Merluccius albidus*; 99%) and red hake (*Urophycis chuss*; 68%) had a high percentage of discards to total catch for economic reasons ("No Market"). The NE OPEN LIM scallop dredge fleet (Row 42; 19%) and NE large mesh otter trawl fleet (Row 8; 16%) 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 (75%) of discards were attributed to "No Market." "Regulation" (size, quota, and other), "Poor Quality," and "Other" contributed 21%, 2%, and 2%, respectively (Appendix Table 3A).

The percentages of discards to total catch by fleet were also summarized for 34 of the 35 nonpilot fleets (Fig. 2; MA AA GEN small mesh scallop trawl [Row 9] is not included because of confidentiality). 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 2 fleets (Rows 33 and 43) where discards were less than 1% of the total catch in the fleet; 6 fleets (Rows 1, 27, 34, 35, 62, and 63) where the percentages of discards ranged between 1% and 10%; 17 fleets (Rows 2, 3, 4, 7, 26, 28, 30, 31, 36-41, 49, 52, and 56) where the percentages of discards ranged between 11% and 25% of total catch; 7 fleets (Rows 5, 8, 12, 13, 47, 48, and 50) where the percentages of discards ranged between 26% and 50% of the total catch; and 2 fleets (Rows 6 and 53) 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 (24 of the 34 fleets), discards comprised 2 or 3 discarded species groups. For 8 of these fleets (Rows 12, 13, 34, 35, 39, 47, 48, and 62), 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 10 of these fleets (Rows 1, 3, 4, 27, 33, 43, 49, 50, 52, and 53) for which the "Non-SBRM" species group comprised the majority of the discards. There were 6 of these fleets where 2 of the 3 discarded species groups were "Other SBRM" and "Non-SBRM," and the third represented the majority of the discards: Rows 2 (DOG 77%), 26 (DOG; 60%), 28 (SKATE, 76%), 30 (DOG; 59%), 38 (SKATE; 52%), and 56 (RCRAB >99%), Fig 2. The remaining fleets (10 of the 34 fleets) had between 4 and 8 discarded species

groups. The skate species group comprised the plurality of the discards in 5 of these fleets (Rows 5, 6, 8, 31, and 63) while the "Non-SBRM" group comprised the plurality of the discards in the other 5 fleets (Rows 7, 36, 37, 40, and 41). The dominant "Non-SBRM" species in the MA longline fleet (Row 1) was smooth dogfish (*Mustelus canis*). Striped bass (*Morone saxatilis*) and striped sea robins (*Prionotus evolans*) were the dominant "Non-SBRM" species in the MA handline fleet while blue shark (*Prionace glauca*) was the dominant "Non-SBRM" species in the NE handline fleet (Rows 3 and 4, respectively; Fig 2). Striped bass was also the dominant "Non-SBRM" species in the MA large mesh gillnet fleet (Row 27). The dominant "Non-SBRM" species in the scallop dredge fleets (Rows 34-41; Fig. 2) were sand dollar (Clypeasteroida), starfish (Asteroidea), Jonah crab (*Cancer borealis*), and sponge (Porifera). "Fish, not known" was the dominant "Non-SBRM" species in the NE small mesh otter trawl fleet, the NE purse seine fleet, and the MA small mesh mid-water trawl fleets (Rows 7, 33, and 43, respectively; Fig. 2). Whelks (Buccinidae) were the dominant "Non-SBRM" species in the MA and NE conch pot fleets (Rows 49 and 50, 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 52 and 53, respectively; Fig. 2).

The precision of the discard estimates varied by species group and fleet (Table 5A). Of the 14 species groups, 12 species groups (BLUE, FSB, HERR, GFL, MONK, RCRAB, SCAL, SKATE, GFS, DOG, SBM, and TIL) had an overall CV that was less than 30%, 1 species group (SCOQ) had an overall CV that was greater than 30%, and 1 species group (SAL) had zero discards and consequently no CV. The discards of 4 species groups (BLUE, HERR, SCOQ, and TILE) were filtered out in all fleets; this finding indicates that the discards of these species groups were a minor component of the total catch of these species (Table 5A; 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 "2019 Trips Needed" and "2019 Sea Days Needed", respectively), are summarized in Tables 6A (trips) and 6B (sea days), respectively. For the 63 fleets 2,840 trips and 7,667 sea days are needed.

As mentioned, 28 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, 775 sea days (10% of 7,667 sea 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, 3, 4, 9, 12, 13, 27, 33-35, 39, 43, 47-50, and 53; Table 6B). For 5 fleets (Rows 38, 40, 52, 56, 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 [17+5] fleets with minimum pilot coverage were associated with 639 sea days (8% of 7,667 sea days; Table 6B). The sea days needed for the remaining 13 fleets (6,253 sea days, representing 82% of the total sea days needed) were derived by using the variance of the discard estimate (Tables 6B). Of the 7,667 sea days, 1,590 sea days (21%) were associated with the NE large mesh otter trawl (Row 8) because of high variability in spiny dogfish discards among trips within this fleet, and 1,403 sea days (18%) were associated with the MA small mesh otter trawl fleet (Row 5; Table 6B) because of high variability of monkfish discards among trips within this fleet.

The sample sizes (in terms of number of sea days, number of trips, and percentage of trips based on the July 2017 through June 2018 VTR trips) needed to achieve a 30% CV of the discard estimate in 18 fleets are 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 (*CFDERSyyyy*) 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 fleet (Row 9). In this fleet, some vessels may have 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 by 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 because of the removal of "erroneous" fleets.

In 2014, the northern shrimp fishery was closed and remained closed through 2018. In years past, the VTR trips associated with NE shrimp trawl fleet (Row 20; Tables 2 and 3) were investigated. These trips used 2 in mesh, and most trips reported catching small mesh groundfish and/or herring while a few trips reported catching squid. The northern shrimp fishery requires a finfish excluder device (FED); however, other small mesh exempted fisheries do not require a FED. Currently, there is no data element within the VTR database that indicates whether or not a FED or other bycatch reduction device was used. Based upon previous investigations, the captains of the vessels participating in the small mesh exempted fisheries indicated that a FED was not used 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 implemented in 2018 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. However, as expected, this refinement also results in some fleets, those with low industry activity, to enter or exit the annual SBRM analyses over time as the number of trips fluctuates about the minimum number of trips needed for a fleet. Additionally, this refinement has resulted in 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.

In previous annual analyses, there have been high sea day requirements (>2,000 sea days) in some fleets because of high variability of red deepsea crab discards. These sea days were not

removed by the importance filter because the red deepsea crab estimates of discards for these fleets constituted the upper cumulative 95% of the discard mortality and constituted the upper 98% of total mortality from discards for this species group. However, because of relatively low estimates of red deepsea crab discards in some fleets this year (e.g., the MA small mesh otter trawl fleet [Row 5] and NE large mesh otter trawl fleet [Row 8]; Table 5A, red deepsea crab species group), the high variability of these estimates did not lead to high sea day requirements because the sea days were removed by the importance filter. This year, sea day requirements for 2 fleets (MA lobster pot [Row 52] and NE crab pot [Row 56]; Table 5A) were not filtered out by the importance filter; however, the variance-based sea days were lower than the sea days based on minimum pilot coverage, and subsequently, the sea days based on minimum pilot coverage were used (Table 6B). For fleets with "pilot" designation (e.g., MA small mesh shrimp trawl [Row 19] and MA crab pot [Row 55]), sea day requirements are based on pilot coverage (Tables 5A and 6B).

In the 2016 SBRM analyses (using July 2014 through June 2015 data), a decision was made to partition the NE mid-water trawl fleet into 2 fleets, AA and OPEN, to guard against potential observer coverage bias between OPEN and AA areas. The concern at the time was that trips selected for NEFOP observer coverage in NE mid-water trawl fleet would go exclusively to the groundfish access area that required 100% observer coverage and the OPEN areas might not have adequate observer coverage. However, regulations allow mid-water trawl trips to fish in AA and OPEN areas on the same trip, and exploration of VMS data subsequently revealed that some trips fish in both areas. (Note: scallop regulations do not allow fishing in AA and OPEN areas on the same trip). VTRs require subtrip reporting when gear, statistical area, or mesh size changes during a trip. The groundfish access areas do not completely coincide with statistical areas boundaries, and as such, VTR subtrip reporting does not capture spatial changes fishing between AA and OPEN areas on mid-water trawl trips. The use of NEFOP program code allowed the AA trips to be identified in the 2016 – 2018 SBRM analyses. The inability to track trips in the VTR data at this spatial resolution, coupled with the inability/impracticality to deploy an observer on a partial trip (an observer is deployed on a trip, not for part of a trip), and the forthcoming herring FMP requirement for industry-funded monitoring (IFM; for which the total IFM monitoring includes some SBRM days) that requires tracking and compliance monitoring at a trip level, not at a spatial level, all lead to the 2019 decision to reverse the 2016 SBRM decision and to not separate the groundfish access area exempted fishery trips from the nonexempted trips for the NE small mesh mid-water. The 2019 SBRM analyses group the NE small mesh mid-water trawl trips, regardless of spatial area fished. This modification does not reduce the concern for potential observer coverage bias; however, it recognizes that under current regulations, observer deployment and fishery monitoring efforts at these spatial scales is not possible. While the potential for spatial bias might occur, the 2018 SBRM data revealed that AA and OPEN NE small mesh mid-water trawl trips generally cooccurred within similar statistical areas. Exploration of the 2018 SBRM data using a combined fleet (AA and OPEN) for the NE small mesh mid-water trawl trips did not change the sea days that were filtered out among species groups in the analyses, revealing that the impact of the change would result in minimum pilot coverage for 1 fleet (44 sea days) rather than minimum pilot coverage in 2 fleets (43 sea days + 44 sea days in Rows 48 and 50, respectively, Wigley and Tholke 2018). This change represents roughly a 50% decrease in the required sea days for the NE small mesh mid-water trawl fleet when the 2 fleets were merged. Although this change represents a large proportional change, the expected observer coverage for the NE small mesh mid-water trawl trips remains low. In the 2019 SBRM analysis, the NE small mesh mid-water trawl fleet (Row 43) requires 42 sea days. If industry activity in the upcoming year remains at 570 days

(Table 3, Row 43), then the expected observer coverage in this fleet would be 7.4% (42 days / 570 days * 100). If observer coverage doubled (for example, 84 days), the expected observer coverage would still remain relatively low at 14.7%.

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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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)	*Salmo salar*
BLUEFISH (BLUE)	*Pomatomus saltatrix*
FLUKE - SCUP - BLACK SEA BASS (FSB)	
Black sea bass	*Centropristis striata*
Fluke	*Paralichthys dentatus*
Scup	*Stenotomus chrysops*
HERRING, ATLANTIC (HERR)	*Clupea harengus*
LARGE MESH GROUNDFISH (GFL)	
American plaice	*Hippoglossoides platessoides*
Atlantic cod	*Gadus morhua*
Atlantic halibut	*Hippoglossus hippoglossus*
Atlantic wolffish	*Anarhichas lupus*
Haddock	*Melanogrammus aeglefinus*
Ocean pout	*Zoarces americanus*
Pollock	*Pollachius virens*
Redfish	*Sebastes fasciatus*
White hake	*Urophycis tenuis*
Windowpane flounder	*Scophthalmus aquosus*
Winter flounder	*Pseudopleuronectes americanus*
Witch flounder	*Glyptocephalus cynoglossus*
Yellowtail flounder	*Limanda ferruginea*
MONKFISH (MONK)	*Lophius americanus*
RED DEEPSEA CRAB (RCRAB)	*Chaceon quinquedens*
SEA SCALLOP (SCAL)	*Placopecten magellanicus*
SKATE COMPLEX[16] (SKATE)	Rajidae
Barndoor skate	*Dipturus laevis*
Clearnose skate	*Raja eglanteria*
Little skate	*Leucoraja erinacea*
Rosette skate	*Leucoraja garmani*
Smooth skate	*Malacoraja senta*
Thorny skate	*Amblyraja radiata*
Winter skate	*Leucoraja ocellata*
SMALL MESH GROUNDFISH (GFS)	
Offshore hake	*Merluccius albidus*
Red hake	*Urophycis chuss*
Silver hake	*Merluccius bilinearis*
SPINY DOGFISH (DOG)	*Squalus acanthias*
SQUID[17] - BUTTERFISH - MACKEREL (SBM)	
Atlantic mackerel	*Scomber scombrus*
Butterfish	*Peprilus triacanthus*
Longfin inshore squid	*Doryteuthis (Amerigo) pealeii*
Northern shortfin squid	*Illex illecebrosus*
SURFCLAM - OCEAN QUAHOG (SCOQ)[18]	
Surfclam	*Spisula solidissima*
Ocean quahog	*Arctica islandica*
TILEFISH[19] (TILE)	
Blueline tilefish	*Caulolatilus microps*
Golden tilefish	*Lopholatilus chamaeleonticeps*

[16] Skate complex is composed of 7 species as well as skate, unknown, and little/winter mixed skate. Individual species are not summarized separately.
[17] 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.
[18] In this analysis, surfclams and ocean quahogs compose the species group and are not reported separately.
[19] 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 2017 through June 2018 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	2	1	3	**8**	31	22	21	45	**119**	
2	Longline, Bottom	OPEN	all	NE	all	24	7	10	3	**44**	572	177	42	141	**932**	
3	Hand Line	OPEN	all	MA	all	23	13	.	9	**45**	1,479	889	87	678	**3,133**	
4	Hand Line	OPEN	all	NE	all	37	12	4	5	**58**	1,665	583	19	494	**2,761**	
5	Otter Trawl	OPEN	all	MA	sm	207	147	89	107	**550**	1,145	1,142	482	894	**3,663**	
6	Otter Trawl	OPEN	all	MA	lg	95	51	66	45	**257**	745	564	577	836	**2,722**	
7	Otter Trawl	OPEN	all	NE	sm	304	155	45	120	**624**	1,588	1,055	416	1,035	**4,094**	
8	Otter Trawl	OPEN	all	NE	lg	103	110	160	90	**463**	1,184	1,106	920	1,450	**4,660**	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	.	.	.	3	**3**	.	.	.	10	**10**	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	.	.	.	.	**.**	2	.	4	72	**78**	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	1	.	.	.	**1**	29	14	.	27	**70**	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	3	1	3	2	**9**	20	6	14	22	**62**	
13	Otter Trawl, Twin	OPEN	all	MA	lg	3	.	4	2	**9**	15	22	29	21	**87**	
14	Otter Trawl, Twin	OPEN	all	NE	sm	.	1	1	.	**2**	.	1	4	1	**6**	P
15	Otter Trawl, Ruhle	OPEN	all	MA	sm	.	.	.	.	**.**	.	8	4	.	**12**	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	.	.	.	.	**.**	10	1	.	1	**12**	P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	1	2	.	.	**3**	6	17	3	2	**28**	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1	1	3	.	**5**	22	11	15	12	**60**	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	1	2	.	.	**3**	65	144	5	.	**214**	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	.	.	.	.	**.**	26	13	16	23	**78**	P
21	Otter Trawl, Other	OPEN	all	MA	sm	.	.	.	.	**.**	1	2	7	2	**12**	P
22	Otter Trawl, Other	OPEN	all	NE	sm	.	.	.	.	**.**	7	5	7	33	**52**	P
23+	Otter Trawl, Other	OPEN	all	NE	lg	.	.	.	.	**.**	.	.	.	8	**8**	P
24	Floating Trap	OPEN	all	MA	all	.	.	.	.	**.**	28	2	.	36	**66**	P
25	Floating Trap	OPEN	all	NE	all	.	.	.	.	**.**	73	69	31	4	**177**	P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	118	74	68	55	**315**	487	482	445	376	**1,790**	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	27	62	19	39	**147**	273	728	218	408	**1,627**	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	.	28	25	51	**104**	15	387	299	738	**1,439**	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	.	.	.	.	**.**	11	4	.	.	**15**	P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	112	29	19	51	**211**	1,327	346	85	525	**2,283**	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	121	74	26	25	**246**	1,325	777	144	823	**3,069**	
32	Purse Seine	OPEN	all	MA	all	.	.	.	.	**.**	83	.	.	145	**228**	P
33	Purse Seine	OPEN	all	NE	all	5	2	.	2	**9**	226	38	.	67	**331**	

See text for fleet abbreviations; "+" indicates new fleets in 2019.

Table 2, continued. Number of observed (OB) and Vessel Trip Report (VTR) trips, by fleet and calendar quarter (Q) based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	4	.	7	7	**18**	17	2	63	293	**375**	
35	Dredge, Scallop	AA	GEN	NE	all	.	.	.	30	**30**	.	.	.	748	**748**	
36	Dredge, Scallop	AA	LIM	MA	all	17	7	10	24	**58**	124	109	72	285	**590**	
37	Dredge, Scallop	AA	LIM	NE	all	36	38	8	75	**157**	235	200	71	679	**1,185**	
38	Dredge, Scallop	OPEN	GEN	MA	all	32	29	15	20	**96**	754	347	295	661	**2,057**	
39	Dredge, Scallop	OPEN	GEN	NE	all	15	20	18	10	**63**	467	617	1,136	1,039	**3,259**	
40	Dredge, Scallop	OPEN	LIM	MA	all	17	9	4	2	**32**	134	90	58	78	**360**	
41	Dredge, Scallop	OPEN	LIM	NE	all	31	13	19	26	**89**	313	147	194	257	**911**	
42	Danish Seine	OPEN	all	MA	all	.	.	.	.	**.**	8	.	.	13	**21**	P
43+	Trawl, Mid-water Paired&Single	all	all	NE	sm	8	4	3	.	**15**	31	79	47	3	**160**	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	.	.	3	.	**3**	19	5	19	.	**43**	P
45	Pots and Traps, Other	OPEN	all	MA	all	.	.	.	.	**.**	.	21	.	2	**23**	P
46	Pots and Traps, Other	OPEN	all	NE	all	.	.	.	.	**.**	59	6	15	67	**147**	P
47	Pots and Traps, Fish	OPEN	all	MA	all	2	2	3	3	**10**	323	266	34	200	**823**	
48	Pots and Traps, Fish	OPEN	all	NE	all	8	2	.	6	**16**	699	242	.	191	**1,132**	
49	Pots and Traps, Conch	OPEN	all	MA	all	.	6	1	3	**10**	65	499	14	220	**798**	
50	Pots and Traps, Conch	OPEN	all	NE	all	3	3	.	3	**9**	285	442	3	321	**1,051**	
51	Pots and Traps, Hagfish	OPEN	all	NE	all	.	.	.	.	**.**	3	4	7	7	**21**	P
52	Pots and Traps, Lobster	OPEN	all	MA	all	5	2	1	1	**9**	648	308	83	206	**1,245**	
53	Pots and Traps, Lobster	OPEN	all	NE	all	6	5	3	4	**18**	12,745	8,891	2,341	4,085	**28,062**	
54	Weir	OPEN	all	NE	all	.	.	.	.	**.**	6	.	.	.	**6**	P
55	Pots and Traps, Crab	OPEN	all	MA	all	.	1	.	2	**3**	48	21	6	40	**115**	P
56	Pots and Traps, Crab	OPEN	all	NE	all	3	4	3	1	**11**	15	13	25	16	**69**	
57	Beam Trawl	OPEN	all	MA	sm	.	.	.	.	**.**	29	1	3	.	**33**	P
58	Beam Trawl	OPEN	all	MA	lg	.	.	.	.	**.**	13	5	5	.	**23**	P
59	Beam Trawl	OPEN	all	NE	lg	.	.	.	.	**.**	21	5	3	5	**34**	P
60	Dredge, Other	OPEN	all	MA	all	.	.	.	.	**.**	1	101	150	104	**356**	P
61	Dredge, Urchin	OPEN	all	NE	all	.	.	.	.	**.**	.	5	9	.	**14**	P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	3	3	2	2	**10**	578	506	363	584	**2,031**	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	3	3	1	13	**20**	542	417	344	596	**1,899**	
					Total	1,381	924	644	844	**3,793**	30,642	21,964	9,254	19,629	**81,489**	

See text for fleet abbreviations; "+" indicates new fleets in 2019.

Table 3. Number of observed (OB) and Vessel Trip Report (VTR) sea days, by fleet and calendar quarter (Q) based on July 2017 through June 2018 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	19	24	12	22	**77**	270	231	192	335	**1,028**	
2	Longline, Bottom	OPEN	all	NE	all	24	7	19	3	**53**	573	180	61	157	**971**	
3	Hand Line	OPEN	all	MA	all	32	14	.	9	**55**	1,633	950	119	751	**3,453**	
4	Hand Line	OPEN	all	NE	all	46	14	4	7	**71**	1,874	605	20	530	**3,029**	
5	Otter Trawl	OPEN	all	MA	sm	364	361	420	244	**1,389**	2,040	2,203	2,055	1,819	**8,117**	
6	Otter Trawl	OPEN	all	MA	lg	136	169	256	89	**650**	1,118	1,564	2,218	1,678	**6,578**	
7	Otter Trawl	OPEN	all	NE	sm	707	418	237	308	**1,670**	3,551	2,398	1,864	2,443	**10,256**	
8	Otter Trawl	OPEN	all	NE	lg	238	343	515	179	**1,275**	3,141	3,496	3,094	3,618	**13,349**	
9	Otter Trawl, Scallop	AA	GEN	MA	sm	.	.	.	6	**6**	.	.	.	23	**23**	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	.	.	.	.	**.**	5	.	8	159	**172**	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	2	.	.	.	**2**	65	29	.	51	**145**	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	3	7	23	2	**35**	20	55	100	22	**197**	
13	Otter Trawl, Twin	OPEN	all	MA	lg	3	.	4	2	**9**	15	23	30	26	**94**	
14	Otter Trawl, Twin	OPEN	all	NE	sm	.	12	9	.	**21**	.	11	21	1	**33**	P
15	Otter Trawl, Ruhle	OPEN	all	MA	sm	.	.	.	.	**.**	.	49	27	.	**76**	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	.	.	.	.	**.**	12	2	.	7	**21**	P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	3	10	.	.	**13**	46	85	23	8	**162**	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	7	10	19	.	**36**	178	109	125	103	**515**	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	6	13	.	.	**19**	269	936	45	.	**1,250**	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	.	.	.	.	**.**	46	13	24	24	**107**	P
21	Otter Trawl, Other	OPEN	all	MA	sm	.	.	.	.	**.**	4	15	41	9	**69**	P
22	Otter Trawl, Other	OPEN	all	NE	sm	.	.	.	.	**.**	45	31	50	128	**254**	P
23+	Otter Trawl, Other	OPEN	all	NE	lg	.	.	.	.	**.**	.	.	.	15	**15**	P
24	Floating Trap	OPEN	all	MA	all	.	.	.	.	**.**	28	2	.	36	**66**	P
25	Floating Trap	OPEN	all	NE	all	.	.	.	.	**.**	73	70	31	4	**178**	P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	130	74	69	55	**328**	565	483	447	394	**1,889**	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	30	63	19	39	**151**	284	743	223	445	**1,695**	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	.	35	38	59	**132**	15	451	399	824	**1,689**	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	.	.	.	.	**.**	11	4	.	.	**15**	P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	134	43	42	57	**276**	1,624	530	223	697	**3,074**	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	163	100	63	45	**371**	1,658	1,000	380	1,465	**4,503**	
32	Purse Seine	OPEN	all	MA	all	.	.	.	.	**.**	83	.	.	151	**234**	P
33	Purse Seine	OPEN	all	NE	all	15	5	.	4	**24**	490	84	.	138	**712**	

See text for fleet abbreviations; "+" indicates new fleets in 2019.

Table 3, continued. Number of observed (OB) and Vessel Trip Report (VTR) sea days, by fleet and calendar quarter (Q) based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	9	.	16	10	**35**	33	5	139	489	**666**	
35	Dredge, Scallop	AA	GEN	NE	all	.	.	.	55	**55**	.	.	.	1,375	**1,375**	
36	Dredge, Scallop	AA	LIM	MA	all	130	49	61	176	**416**	897	708	432	1,985	**4,022**	
37	Dredge, Scallop	AA	LIM	NE	all	296	277	66	576	**1,215**	1,850	1,510	484	4,943	**8,787**	
38	Dredge, Scallop	OPEN	GEN	MA	all	54	55	29	34	**172**	1,231	648	537	1,003	**3,419**	
39	Dredge, Scallop	OPEN	GEN	NE	all	30	43	35	13	**121**	924	909	1,387	1,270	**4,490**	
40	Dredge, Scallop	OPEN	LIM	MA	all	148	64	31	26	**269**	1,225	740	351	744	**3,060**	
41	Dredge, Scallop	OPEN	LIM	NE	all	314	117	155	282	**868**	3,146	1,386	1,371	2,719	**8,622**	
42	Danish Seine	OPEN	all	MA	all	.	.	.	.	**.**	8	.	.	30	**38**	P
43+	Trawl, Mid-water Paired&Single	all	all	NE	sm	36	11	9	.	**56**	122	255	184	9	**570**	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	.	.	17	.	**17**	55	24	95	.	**174**	P
45	Pots and Traps, Other	OPEN	all	MA	all	.	.	.	.	**.**	.	21	.	2	**23**	P
46	Pots and Traps, Other	OPEN	all	NE	all	.	.	.	.	**.**	59	6	15	67	**147**	P
47	Pots and Traps, Fish	OPEN	all	MA	all	3	2	3	3	**11**	328	269	34	203	**834**	
48	Pots and Traps, Fish	OPEN	all	NE	all	8	2	.	6	**16**	708	242	.	191	**1,141**	
49	Pots and Traps, Conch	OPEN	all	MA	all	.	6	1	3	**10**	65	500	14	221	**800**	
50	Pots and Traps, Conch	OPEN	all	NE	all	3	3	.	3	**9**	285	442	3	321	**1,051**	
51	Pots and Traps, Hagfish	OPEN	all	NE	all	.	.	.	.	**.**	29	41	89	82	**241**	P
52	Pots and Traps, Lobster	OPEN	all	MA	all	6	2	6	1	**15**	833	438	164	330	**1,765**	
53	Pots and Traps, Lobster	OPEN	all	NE	all	6	5	3	4	**18**	15,101	11,217	4,089	5,903	**36,310**	
54	Weir	OPEN	all	NE	all	.	.	.	.	**.**	6	.	.	.	**6**	P
55	Pots and Traps, Crab	OPEN	all	MA	all	.	5	.	6	**11**	76	46	22	95	**239**	P
56	Pots and Traps, Crab	OPEN	all	NE	all	24	33	32	13	**102**	107	125	186	91	**509**	
57	Beam Trawl	OPEN	all	MA	sm	.	.	.	.	**.**	108	5	18	.	**131**	P
58	Beam Trawl	OPEN	all	MA	lg	.	.	.	.	**.**	26	20	20	.	**66**	P
59	Beam Trawl	OPEN	all	NE	lg	.	.	.	.	**.**	28	6	3	6	**43**	P
60	Dredge, Other	OPEN	all	MA	all	.	.	.	.	**.**	2	101	150	173	**426**	P
61	Dredge, Urchin	OPEN	all	NE	all	.	.	.	.	**.**	.	5	9	.	**14**	P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	9	8	5	4	**26**	1,092	1,014	718	1,196	**4,020**	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	9	6	3	35	**53**	777	631	552	793	**2,754**	
					Total	3,147	2,410	2,221	2,380	**10,158**	48,857	37,665	22,887	40,303	**149,712**	

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 2017 through June 2018 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	725	0.1	128	17.6
2	Longline, Bottom	OPEN	all	NE	all	1,957	0.3	1,892	96.7
3	Hand Line	OPEN	all	MA	all	209	<0.1	141	67.4
4	Hand Line	OPEN	all	NE	all	1,105	0.2	802	72.6
5	Otter Trawl	OPEN	all	MA	sm	19,067	3.2	17,982	94.3
6	Otter Trawl	OPEN	all	MA	lg	4,887	0.8	4,564	93.4
7	Otter Trawl	OPEN	all	NE	sm	28,209	4.8	27,646	98.0
8	Otter Trawl	OPEN	all	NE	lg	24,396	4.1	24,102	98.8
10	Otter Trawl, Scallop	AA	GEN	MA	lg	176	<0.1	0	0.0
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	114	<0.1	0	0.0
12	Otter Trawl, Twin	OPEN	all	MA	sm	541	0.1	353	65.1
13	Otter Trawl, Twin	OPEN	all	MA	lg	189	<0.1	99	52.2
14	Otter Trawl, Twin	OPEN	all	NE	sm	70	<0.1	0	0.0
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	8	<0.1	0	0.0
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	344	0.1	0	0.0
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	1,132	0.2	307	27.1
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	617	0.1	0	0.0
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	58	<0.1	0	0.0
22	Otter Trawl, Other	OPEN	all	NE	sm	371	0.1	0	0.0
25	Floating Trap	OPEN	all	NE	all	43	<0.1	0	0.0
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1,540	0.3	1,520	98.7
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	1,794	0.3	1,654	92.2
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2,616	0.4	2,449	93.6
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	26	<0.1	0	0.0
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	3,181	0.5	3,137	98.6
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	8,204	1.4	7,934	96.7
32	Purse Seine	OPEN	all	MA	all	13,906	2.4	0	0.0
33	Purse Seine	OPEN	all	NE	all	22,377	3.8	14,114	63.1
34	Dredge, Scallop	AA	GEN	MA	all	855	0.1	738	86.3
35	Dredge, Scallop	AA	GEN	NE	all	1,686	0.3	1,675	99.3
36	Dredge, Scallop	AA	LIM	MA	all	26,371	4.5	23,512	89.2
37	Dredge, Scallop	AA	LIM	NE	all	68,369	11.6	65,802	96.2
38	Dredge, Scallop	OPEN	GEN	MA	all	4,719	0.8	4,592	97.3
39	Dredge, Scallop	OPEN	GEN	NE	all	3,456	0.6	2,743	79.4
40	Dredge, Scallop	OPEN	LIM	MA	all	20,474	3.5	13,534	66.1
41	Dredge, Scallop	OPEN	LIM	NE	all	66,774	11.3	63,984	95.8
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	25,571	4.3	17,972	70.3
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	7,898	1.3	4,542	57.5
46	Pots and Traps, Other	OPEN	all	NE	all	11	<0.1	0	0.0

See text for fleet abbreviations.

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 2017 through June 2018 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
47	Pots and Traps, Fish	OPEN	all	MA	all	178	<0.1	37	20.7
48	Pots and Traps, Fish	OPEN	all	NE	all	134	<0.1	94	69.9
49	Pots and Traps, Conch	OPEN	all	MA	all	442	0.1	412	93.2
50	Pots and Traps, Conch	OPEN	all	NE	all	192	<0.1	162	84.3
52	Pots and Traps, Lobster	OPEN	all	MA	all	835	0.1	95	11.4
53	Pots and Traps, Lobster	OPEN	all	NE	all	15,762	2.7	1,713	10.9
55	Pots and Traps, Crab	OPEN	all	MA	all	133	<0.1	0	0.0
56	Pots and Traps, Crab	OPEN	all	NE	all	1,548	0.3	977	63.1
57	Beam Trawl	OPEN	all	MA	sm	519	0.1	0	0.0
60	Dredge, Other	OPEN	all	MA	all	119	<0.1	0	0.0
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	116,329	19.7	32,557	28.0
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	88,593	15.0	43,986	49.7
	Confidential fleets					2,047	0.3	0	0.0
	Other minor fleets					281	<0.1	5	1.6
					Total	**591,160**	**100.0**	**387,955**	**65.6**

See text for fleet abbreviations.

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 2017 through June 2018 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			
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			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

See text for fleet abbreviations.

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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	1,068	255	813	2.283	1,855	
2	Longline, Bottom	OPEN	all	NE	all	85	85	0			
3	Hand Line	OPEN	all	MA	all	78,493	78,321	172	1.277	220	
4	Hand Line	OPEN	all	NE	all	22,891	22,891	0			
5	Otter Trawl	OPEN	all	MA	sm	101,274	90,654	10,620	0.217	2,304	
6	Otter Trawl	OPEN	all	MA	lg	35,662	33,931	1,731	0.762	1,320	
7	Otter Trawl	OPEN	all	NE	sm	75,252	53,857	21,395	0.458	9,792	
8	Otter Trawl	OPEN	all	NE	lg	10,740	10,273	467	0.971	453	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	8	8	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	281	47	234	0.684	160	
13	Otter Trawl, Twin	OPEN	all	MA	lg	200	200	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	94	0	94	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,571	570	1,001	0.456	457	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	8	8	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	370	370				P
22	Otter Trawl, Other	OPEN	all	NE	sm	779	779				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	72,335	71,314	1,021	0.518	528	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	243,146	242,400	746	0.581	433	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	6,306	5,830	476	0.471	224	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	1,386	1,386				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	395,923	390,869	5,054	0.363	1,835	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	16,916	12,840	4,076	0.372	1,514	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	124	0	124	0.943	117	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	1,785	1,785	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	100	100	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	55	0	55	1.628	89	
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	67	67	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	84	84	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					13,236	13,236				
	Other minor fleets					18	18				
					TOTAL	1,080,255	1,032,178	48,077	0.221	10,633	

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 2017 through June 2018 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	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	32	0	32	0.966	31	
3	Hand Line	OPEN	all	MA	all	186,352	134,543	51,809	0.365	18,915	
4	Hand Line	OPEN	all	NE	all	41,525	41,525	0			
5	Otter Trawl	OPEN	all	MA	sm	8,709,200	6,211,084	2,498,116	0.176	440,316	
6	Otter Trawl	OPEN	all	MA	lg	6,936,011	5,957,407	978,604	0.181	177,016	
7	Otter Trawl	OPEN	all	NE	sm	8,699,120	4,331,560	4,367,560	0.169	737,151	
8	Otter Trawl	OPEN	all	NE	lg	2,847,450	1,622,206	1,225,244	0.198	242,361	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	86	86				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	5,073	5,073	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	67,896	9,575	58,321	0.953	55,608	
13	Otter Trawl, Twin	OPEN	all	MA	lg	21,699	19,481	2,218	0.686	1,521	
14	Otter Trawl, Twin	OPEN	all	NE	sm	1,477	1,203	274	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	7,902	7,902				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	482,004	76,183	405,821	0.130	52,889	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	2,518	2,518	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	3,479	3,479				P
22	Otter Trawl, Other	OPEN	all	NE	sm	12,979	12,979				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	504	255	249	0.331	82	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	5,330	4,937	393	0.314	124	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	19,296	9,608	9,688	0.334	3,231	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	170	170				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	122,175	102,655	19,520	0.231	4,507	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	71,843	20,147	51,696	0.245	12,682	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	2,539	644	1,895	0.410	777	
35	Dredge, Scallop	AA	GEN	NE	all	613	1	612	0.511	313	
36	Dredge, Scallop	AA	LIM	MA	all	66,108	1,933	64,175	0.222	14,245	
37	Dredge, Scallop	AA	LIM	NE	all	190,929	163	190,766	0.143	27,275	
38	Dredge, Scallop	OPEN	GEN	MA	all	61,841	16,593	45,248	0.184	8,343	
39	Dredge, Scallop	OPEN	GEN	NE	all	66,307	304	66,003	0.334	22,066	
40	Dredge, Scallop	OPEN	LIM	MA	all	115,147	6,805	108,342	0.410	44,408	
41	Dredge, Scallop	OPEN	LIM	NE	all	451,841	35	451,806	0.257	116,276	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	8,744	8,744				P
47	Pots and Traps, Fish	OPEN	all	MA	all	382,407	282,927	99,480	0.168	16,737	
48	Pots and Traps, Fish	OPEN	all	NE	all	462,941	282,009	180,932	0.408	73,905	
49	Pots and Traps, Conch	OPEN	all	MA	all	506	120	386	0.682	263	
50	Pots and Traps, Conch	OPEN	all	NE	all	2,415	1,402	1,013	0.647	655	
52	Pots and Traps, Lobster	OPEN	all	MA	all	133,365	107,515	25,850	2.268	58,620	
53	Pots and Traps, Lobster	OPEN	all	NE	all	334,566	46,475	288,091	2.581	743,495	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	144	144	0			
57	Beam Trawl	OPEN	all	MA	sm	2,930	2,930				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	7,558	0	7,558	1.769	13,368	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	16,733	0	16,733	0.579	9,687	
	Confidential fleets					111,752	111,752				
	Other minor fleets					7,558	7,558				
					TOTAL	30,671,067	19,452,630	11,218,437	0.106	1,188,704	

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 2017 through June 2018 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			
4	Hand Line	OPEN	all	NE	all	1,623	1,623	0			
5	Otter Trawl	OPEN	all	MA	sm	94,770	83,876	10,894	0.382	4,164	
6	Otter Trawl	OPEN	all	MA	lg	750	282	468	1.169	546	
7	Otter Trawl	OPEN	all	NE	sm	3,124,651	2,882,030	242,621	0.299	72,536	
8	Otter Trawl	OPEN	all	NE	lg	7,498	2,977	4,521	0.310	1,402	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	86,000	86,000	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	33,295	33,295				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	1,823	1,823				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	244	220	24	0.973	23	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	845	845	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2	2	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	25	0	25	0.677	17	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	48,831,362	48,831,285	77	0.623	48	

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 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	39	0	39	0.987	38	
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	7	0	7	1.963	14	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	27	0	27	0.639	17	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	43,939,056	43,938,367	689	0.515	355	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	5,061,710	5,061,700	10	0.089	1	P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	101,183,726	100,924,325	259,401	0.280	72,672	

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 2017 through June 2018 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 GROUNDFISH

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	514	75	439	0.707	310	
2	Longline, Bottom	OPEN	all	NE	all	204,906	192,058	12,848	0.426	5,478	
3	Hand Line	OPEN	all	MA	all	1,818	886	932	1.002	933	
4	Hand Line	OPEN	all	NE	all	504,563	312,885	191,678	0.272	52,065	
5	Otter Trawl	OPEN	all	MA	sm	235,467	4,060	231,407	0.164	37,998	
6	Otter Trawl	OPEN	all	MA	lg	287,839	89,738	198,101	0.154	30,459	
7	Otter Trawl	OPEN	all	NE	sm	730,030	10,225	719,805	0.197	141,497	
8	Otter Trawl	OPEN	all	NE	lg	32,885,219	31,328,689	1,556,530	0.091	142,073	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	312	0	312	0.531	165	
13	Otter Trawl, Twin	OPEN	all	MA	lg	3,551	2,694	857	0.459	393	
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	661	661				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	794	15	779	0.664	518	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	2,733,009	2,384,405	348,604	0.094	32,736	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	43,043	0	43,043	1.020	43,899	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	71	38	33	0.507	17	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	909	84	825	0.215	177	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	581	150	431	0.596	257	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	1,298,950	1,239,013	59,937	0.220	13,201	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	184,636	91,692	92,944	0.248	23,026	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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 GROUNDFISH

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	1,129	0	1,129	0.754	851	
35	Dredge, Scallop	AA	GEN	NE	all	8,031	2	8,029	0.250	2,003	
36	Dredge, Scallop	AA	LIM	MA	all	10,669	20	10,649	0.333	3,543	
37	Dredge, Scallop	AA	LIM	NE	all	387,390	397	386,993	0.156	60,338	
38	Dredge, Scallop	OPEN	GEN	MA	all	9,093	22	9,071	0.201	1,821	
39	Dredge, Scallop	OPEN	GEN	NE	all	61,251	29	61,222	0.149	9,138	
40	Dredge, Scallop	OPEN	LIM	MA	all	19,653	56	19,597	0.249	4,874	
41	Dredge, Scallop	OPEN	LIM	NE	all	340,467	460	340,007	0.236	80,307	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	2,110	2,110	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	570	570	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	80	80	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	452	280	172	0.688	119	
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	1,504	19	1,485	4.212	6,256	
53	Pots and Traps, Lobster	OPEN	all	NE	all	31,363	253	31,110	1.611	50,127	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	37	0	37	0.821	31	
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	1,305	0	1,305	0.551	720	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	17,827	20	17,807	0.486	8,650	
	Confidential fleets					11,107	11,107				
	Other minor fleets					0	0				
					TOTAL	40,020,911	35,672,793	4,348,118	0.057	248,733	

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 2017 through June 2018 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	429	199	230	0.707	163	
2	Longline, Bottom	OPEN	all	NE	all	1,806	1,806	0			
3	Hand Line	OPEN	all	MA	all	196	196	0			
4	Hand Line	OPEN	all	NE	all	337	111	226	0.438	99	
5	Otter Trawl	OPEN	all	MA	sm	324,748	120,228	204,519	0.327	66,861	
6	Otter Trawl	OPEN	all	MA	lg	625,166	253,323	371,843	0.252	93,604	
7	Otter Trawl	OPEN	all	NE	sm	288,650	185,606	103,044	0.213	21,903	
8	Otter Trawl	OPEN	all	NE	lg	12,064,968	11,053,903	1,011,065	0.134	135,411	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	260	260				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	655	567	88	0.000	0	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	27,107	3,176	23,931	0.930	22,266	
13	Otter Trawl, Twin	OPEN	all	MA	lg	5,634	5,069	565	0.401	227	
14	Otter Trawl, Twin	OPEN	all	NE	sm	410	262	147	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	40	40				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	2,012	2,012	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	96,715	95,929	786	0.345	271	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	67,122	0	67,122	0.251	16,869	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	8,446	8,446				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	378	324	54	0.854	46	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	6,602	6,485	116	0.554	64	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2,850,529	2,787,992	62,537	0.201	12,583	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	203,865	198,381	5,485	0.254	1,395	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	5,580,206	5,225,023	355,183	0.209	74,372	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	16,815	5,681	11,134	0.281	3,128	
35	Dredge, Scallop	AA	GEN	NE	all	85,100	4,354	80,745	0.297	24,001	
36	Dredge, Scallop	AA	LIM	MA	all	678,902	33,280	645,621	0.154	99,608	
37	Dredge, Scallop	AA	LIM	NE	all	4,058,890	282,726	3,776,164	0.123	466,265	
38	Dredge, Scallop	OPEN	GEN	MA	all	225,354	83,979	141,375	0.130	18,315	
39	Dredge, Scallop	OPEN	GEN	NE	all	250,218	48,018	202,199	0.274	55,341	
40	Dredge, Scallop	OPEN	LIM	MA	all	795,099	57,502	737,597	0.186	137,511	
41	Dredge, Scallop	OPEN	LIM	NE	all	5,851,989	249,827	5,602,162	0.145	813,469	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	139	139	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	698	7	691	2.871	1,985	
53	Pots and Traps, Lobster	OPEN	all	NE	all	2,230	2,230	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	445,845	13,791	432,054	0.287	123,993	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	573,549	5,320	568,229	0.357	202,642	
	Confidential fleets					2,649	2,649				
	Other minor fleets					4,177	4,177				
					TOTAL	35,147,934	20,743,019	14,404,915	0.070	1,003,450	

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 2017 through June 2018 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 quinquedens)

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	20	0	20	0.707	14	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	6,563	0	6,563	1.597	10,483	
6	Otter Trawl	OPEN	all	MA	lg	38,556	0	38,556	0.891	34,360	
7	Otter Trawl	OPEN	all	NE	sm	9	0	9	0.860	8	
8	Otter Trawl	OPEN	all	NE	lg	14,378	0	14,378	0.451	6,488	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	176,574	0	176,574	1.355	239,288	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	6	0	6	0.965	5	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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 quinquedens)

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	18	0	18	0.974	17	
36	Dredge, Scallop	AA	LIM	MA	all	106	82	24	1.008	24	
37	Dredge, Scallop	AA	LIM	NE	all	54	3	51	0.612	31	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	98,337	120	98,217	0.585	57,504	
53	Pots and Traps, Lobster	OPEN	all	NE	all	53	53	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	394,144	241,029	153,115	0.126	19,246	P
56	Pots and Traps, Crab	OPEN	all	NE	all	4,337,143	3,209,398	1,127,745	0.315	354,707	
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	5,065,961	3,450,685	1,615,276	0.268	433,688	

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 2017 through June 2018 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	2	0	2	0.812	1	
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	55,197	3,292	51,905	0.486	25,227	
6	Otter Trawl	OPEN	all	MA	lg	764,651	605,925	158,726	0.482	76,579	
7	Otter Trawl	OPEN	all	NE	sm	70,926	40,367	30,559	0.450	13,748	
8	Otter Trawl	OPEN	all	NE	lg	79,435	38,070	41,365	0.306	12,654	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	386,654	386,654				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	230,841	230,841	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	379,875	375,491	4,384	0.726	3,182	
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	344	50	294	0.417	123	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	282	0	282	0.835	235	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	778	0	778	0.509	396	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	1,941,075	1,878,065	63,010	0.454	28,582	
35	Dredge, Scallop	AA	GEN	NE	all	3,808,307	3,713,400	94,906	0.344	32,601	
36	Dredge, Scallop	AA	LIM	MA	all	60,026,974	58,102,507	1,924,467	0.163	313,352	
37	Dredge, Scallop	AA	LIM	NE	all	157,337,283	150,436,618	6,900,665	0.136	936,125	
38	Dredge, Scallop	OPEN	GEN	MA	all	10,851,931	10,255,346	596,584	0.208	124,060	
39	Dredge, Scallop	OPEN	GEN	NE	all	7,856,015	7,563,262	292,753	0.249	72,781	
40	Dredge, Scallop	OPEN	LIM	MA	all	45,866,117	45,070,398	795,719	0.307	244,596	
41	Dredge, Scallop	OPEN	LIM	NE	all	155,694,669	146,954,853	8,739,816	0.312	2,727,934	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	2,499	2,499	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	3,032	3,032				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	1,051,845	566,648	485,197	0.374	181,670	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	1,597,407	976,109	621,298	0.409	254,369	
	Confidential fleets					44,965	44,965				
	Other minor fleets					218,829	218,829				
					TOTAL	448,269,932	427,467,223	20,802,709	0.141	2,933,105	

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 2017 through June 2018 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	18,110	1,227	16,883	0.475	8,012	
2	Longline, Bottom	OPEN	all	NE	all	103,618	10,938	92,679	0.661	61,292	
3	Hand Line	OPEN	all	MA	all	1,567	562	1,005	0.750	754	
4	Hand Line	OPEN	all	NE	all	113	113	0			
5	Otter Trawl	OPEN	all	MA	sm	5,007,310	774,463	4,232,848	0.202	853,865	
6	Otter Trawl	OPEN	all	MA	lg	9,957,215	2,871,309	7,085,906	0.098	691,745	
7	Otter Trawl	OPEN	all	NE	sm	1,940,196	432,806	1,507,391	0.171	258,279	
8	Otter Trawl	OPEN	all	NE	lg	22,007,882	7,828,288	14,179,594	0.167	2,360,930	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	31,202	15,081	16,121	0.000	0	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	11,788	1,737	10,052	0.959	9,638	
13	Otter Trawl, Twin	OPEN	all	MA	lg	117,332	10,969	106,364	0.326	34,669	
14	Otter Trawl, Twin	OPEN	all	NE	sm	291	0	291	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	8,211	8,211				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	22,687	386	22,301	0.453	10,096	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	166,196	11,807	154,389	0.121	18,751	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	25,717	0	25,717	1.889	48,569	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	9,057	9,057				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	5,681	4,582	1,099	0.311	342	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	87,164	53,349	33,815	0.197	6,678	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	3,637,173	2,798,892	838,281	0.294	246,412	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	50	50				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	552,939	314,640	238,299	0.311	74,156	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	13,962,003	11,523,483	2,438,520	0.127	309,997	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	55,641	0	55,641	0.309	17,198	
35	Dredge, Scallop	AA	GEN	NE	all	91,745	0	91,745	0.298	27,327	
36	Dredge, Scallop	AA	LIM	MA	all	1,185,683	2	1,185,681	0.118	140,322	
37	Dredge, Scallop	AA	LIM	NE	all	6,907,793	6,266	6,901,527	0.100	693,338	
38	Dredge, Scallop	OPEN	GEN	MA	all	1,407,605	29,801	1,377,805	0.077	106,104	
39	Dredge, Scallop	OPEN	GEN	NE	all	792,833	120	792,713	0.235	186,295	
40	Dredge, Scallop	OPEN	LIM	MA	all	2,538,115	1,674	2,536,441	0.208	526,792	
41	Dredge, Scallop	OPEN	LIM	NE	all	9,496,912	6,623	9,490,290	0.108	1,020,938	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	38	0	38	0.636	24	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	61	0	61	0.645	40	
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	2,157	2,157	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	170	170				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	549,992	0	549,992	0.592	325,847	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	2,301,534	0	2,301,534	0.299	688,387	
	Confidential fleets					2,472	2,472				
	Other minor fleets					0	0				
					TOTAL	83,006,256	26,721,234	56,285,022	0.055	3,076,666	

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 2017 through June 2018 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 GROUNDFISH

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	988	620	368	0.707	260	
2	Longline, Bottom	OPEN	all	NE	all	433	27	406	0.999	406	
3	Hand Line	OPEN	all	MA	all	1,468	1,468	0			
4	Hand Line	OPEN	all	NE	all	494	494	0			
5	Otter Trawl	OPEN	all	MA	sm	2,735,853	2,116,795	619,058	0.257	159,139	
6	Otter Trawl	OPEN	all	MA	lg	122,009	57,047	64,962	0.646	41,989	
7	Otter Trawl	OPEN	all	NE	sm	10,526,281	8,998,821	1,527,460	0.194	296,278	
8	Otter Trawl	OPEN	all	NE	lg	879,233	408,008	471,225	0.267	125,973	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	17,277	135	17,142	0.727	12,463	
13	Otter Trawl, Twin	OPEN	all	MA	lg	354	10	344	1.018	351	
14	Otter Trawl, Twin	OPEN	all	NE	sm	8,980	5,375	3,605	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	5	5				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	4,508	1,622	2,886	0.457	1,319	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	4,505	0	4,505	0.311	1,401	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	77,890	0	77,890	0.755	58,816	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	11,940	11,940				P
22	Otter Trawl, Other	OPEN	all	NE	sm	405,061	405,061				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	232	232	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	66	20	46	0.539	25	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	38,341	31,479	6,862	0.251	1,724	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	16,252	13,466	2,786	0.539	1,501	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	23	0	23	1.082	25	

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 2017 through June 2018 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 GROUNDFISH

Fleet Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	104	0	104	0.661	69	
35	Dredge, Scallop	AA	GEN	NE	all	3,577	0	3,577	0.257	919	
36	Dredge, Scallop	AA	LIM	MA	all	20,415	0	20,415	0.356	7,266	
37	Dredge, Scallop	AA	LIM	NE	all	201,966	10	201,956	0.133	26,779	
38	Dredge, Scallop	OPEN	GEN	MA	all	3,989	30	3,959	0.248	981	
39	Dredge, Scallop	OPEN	GEN	NE	all	9,342	0	9,342	0.411	3,840	
40	Dredge, Scallop	OPEN	LIM	MA	all	5,847	0	5,847	0.316	1,845	
41	Dredge, Scallop	OPEN	LIM	NE	all	186,651	0	186,651	0.199	37,143	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	2	0	2	0.679	1	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	555	555	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	10,223	10,223	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	44,328	13,383	30,945	2.419	74,862	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	156	0	156	0.781	122	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	3,116	0	3,116	0.583	1,817	
	Confidential fleets					16,479	16,479				
	Other minor fleets					60	60				
					TOTAL	15,359,004	12,093,365	3,265,639	0.115	377,013	

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 2017 through June 2018 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	155,415	155,415	0			
2	Longline, Bottom	OPEN	all	NE	all	4,483,830	4,099,246	384,584	0.260	100,008	
3	Hand Line	OPEN	all	MA	all	10,023	9,664	359	0.729	262	
4	Hand Line	OPEN	all	NE	all	137,822	124,086	13,736	0.593	8,145	
5	Otter Trawl	OPEN	all	MA	sm	2,240,906	299,970	1,940,936	0.202	391,738	
6	Otter Trawl	OPEN	all	MA	lg	1,149,251	249,605	899,646	0.168	151,204	
7	Otter Trawl	OPEN	all	NE	sm	1,630,764	70,372	1,560,392	0.186	290,688	
8	Otter Trawl	OPEN	all	NE	lg	2,388,997	54,265	2,334,732	0.331	772,336	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	54,088	0	54,088	0.358	19,353	
13	Otter Trawl, Twin	OPEN	all	MA	lg	298	5	293	0.478	140	
14	Otter Trawl, Twin	OPEN	all	NE	sm	9,225	0	9,225	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	23,509	0	23,509	0.320	7,518	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	9,636	0	9,636	0.186	1,793	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	1,260	1,260				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1,495,841	1,197,446	298,395	0.174	52,054	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	2,712,947	2,642,248	70,699	0.257	18,138	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	152,640	91,389	61,251	0.141	8,648	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	750	750				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	5,666,954	4,567,705	1,099,249	0.236	259,026	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	1,297,584	1,167,613	129,971	0.150	19,514	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	233	0	233	0.622	145	
35	Dredge, Scallop	AA	GEN	NE	all	577	0	577	0.841	486	
36	Dredge, Scallop	AA	LIM	MA	all	41,752	0	41,752	0.374	15,613	
37	Dredge, Scallop	AA	LIM	NE	all	73,620	0	73,620	0.304	22,373	
38	Dredge, Scallop	OPEN	GEN	MA	all	3,872	0	3,872	0.287	1,110	
39	Dredge, Scallop	OPEN	GEN	NE	all	1,189	0	1,189	0.687	817	
40	Dredge, Scallop	OPEN	LIM	MA	all	8,035	0	8,035	0.339	2,723	
41	Dredge, Scallop	OPEN	LIM	NE	all	59,277	0	59,277	0.267	15,809	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	10,023	0	10,023	0.676	6,778	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	78,597	550	78,047	0.587	45,790	P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	214	0	214	0.585	125	
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	37,127	0	37,127	1.710	63,496	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	57,598	0	57,598	0.554	31,901	
	Confidential fleets					10	10				
	Other minor fleets					0	0				
					TOTAL	23,993,865	14,731,599	9,262,266	0.105	972,939	

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 2017 through June 2018 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	5,168	5,120	48	0.839	41	
3	Hand Line	OPEN	all	MA	all	782	782	0			
4	Hand Line	OPEN	all	NE	all	1,802,872	1,802,257	615	2.387	1,468	
5	Otter Trawl	OPEN	all	MA	sm	33,076,175	31,628,942	1,447,233	0.230	333,421	
6	Otter Trawl	OPEN	all	MA	lg	366,281	334,853	31,428	0.239	7,505	
7	Otter Trawl	OPEN	all	NE	sm	47,948,836	44,934,978	3,013,858	0.178	535,972	
8	Otter Trawl	OPEN	all	NE	lg	505,015	419,628	85,387	0.209	17,812	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	36	36	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	1,396,789	1,174,516	222,273	0.516	114,704	
13	Otter Trawl, Twin	OPEN	all	MA	lg	207	207	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	188,343	145,855	42,488	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	15	15				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	586,960	584,496	2,464	0.348	856	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	13,708	0	13,708	0.189	2,589	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	485,918	481	485,437	1.068	518,223	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	71,351	71,351				P
22	Otter Trawl, Other	OPEN	all	NE	sm	377,766	377,766				P
25	Floating Trap	OPEN	all	NE	all	11,558	11,558				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	8,937	8,833	104	0.268	28	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	2,130	1,930	200	0.594	119	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	1,800	1,278	522	0.425	222	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	30	30				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	4,913	2,241	2,672	0.227	605	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	696	132	564	0.462	261	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	131	80	51	0.762	39	

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 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	53	0	53	0.520	27	
35	Dredge, Scallop	AA	GEN	NE	all	64	0	64	0.746	48	
36	Dredge, Scallop	AA	LIM	MA	all	2,293	20	2,273	0.210	476	
37	Dredge, Scallop	AA	LIM	NE	all	4,709	0	4,709	0.293	1,382	
38	Dredge, Scallop	OPEN	GEN	MA	all	567	29	538	0.447	240	
39	Dredge, Scallop	OPEN	GEN	NE	all	192	25	167	0.630	105	
40	Dredge, Scallop	OPEN	LIM	MA	all	2,108	15	2,093	0.240	503	
41	Dredge, Scallop	OPEN	LIM	NE	all	9,562	0	9,562	0.329	3,143	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	12,204,234	12,203,934	300	0.518	155	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	11,035,996	11,035,895	101	0.462	47	P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	15	15	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	612	612	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	1,095,440	1,095,440				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	14	0	14	0.871	12	
	Confidential fleets					457,548	457,548				
	Other minor fleets					1,240	1,240				
					TOTAL	111,671,064	106,302,138	5,368,926	0.154	824,951	

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 2017 through June 2018 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			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	1,114	0	1,114	0.467	520	
6	Otter Trawl	OPEN	all	MA	lg	15,775	0	15,775	0.624	9,836	
7	Otter Trawl	OPEN	all	NE	sm	296	0	296	0.428	127	
8	Otter Trawl	OPEN	all	NE	lg	1,747	0	1,747	0.343	600	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	257	0	257	0.798	205	
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	16	0	16	0.905	15	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	125	0	125	0.534	67	
36	Dredge, Scallop	AA	LIM	MA	all	408	0	408	0.454	186	
37	Dredge, Scallop	AA	LIM	NE	all	5,679	0	5,679	0.427	2,426	
38	Dredge, Scallop	OPEN	GEN	MA	all	413	0	413	0.506	209	
39	Dredge, Scallop	OPEN	GEN	NE	all	2,347	0	2,347	0.508	1,192	
40	Dredge, Scallop	OPEN	LIM	MA	all	2,476	0	2,476	0.635	1,572	
41	Dredge, Scallop	OPEN	LIM	NE	all	6,355	0	6,355	0.410	2,603	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	256,821,858	255,845,356	976,503	1.080	1,055,106	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	194,885,809	194,260,253	625,556	0.547	341,977	
	Confidential fleets					0	0				
	Other minor fleets					185,246	185,246				
					TOTAL	451,929,921	450,290,855	1,639,066	0.677	1,109,194	

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 2017 through June 2018 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	1,419,008	1,418,385	623	0.707	440	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	35,536	35,536	0			
4	Hand Line	OPEN	all	NE	all	320	320	0			
5	Otter Trawl	OPEN	all	MA	sm	19,733	17,710	2,023	0.500	1,011	
6	Otter Trawl	OPEN	all	MA	lg	1,312	889	423	0.818	346	
7	Otter Trawl	OPEN	all	NE	sm	36,948	32,926	4,022	0.267	1,073	
8	Otter Trawl	OPEN	all	NE	lg	2,081	2,081	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	195	40	155	1.146	178	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	122	103	19	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	314	314	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	256	256				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	1,722	932	790	0.513	406	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5A, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 14 fish and invertebrate species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	50	50	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	146	0	146	3.078	450	
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	90	90	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	87	87	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					147	147				
	Other minor fleets					0	0				
					TOTAL	1,518,068	1,509,866	8,202	0.207	1,699	

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 2017 through June 2018 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	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	103,941	71,402	32,539	0.540	17,565	
4	Hand Line	OPEN	all	NE	all	24,584	24,584	0			
5	Otter Trawl	OPEN	all	MA	sm	1,819,174	1,382,913	436,261	0.206	90,021	
6	Otter Trawl	OPEN	all	MA	lg	1,044,531	895,269	149,262	0.217	32,336	
7	Otter Trawl	OPEN	all	NE	sm	826,460	104,139	722,321	0.200	144,291	
8	Otter Trawl	OPEN	all	NE	lg	161,293	49,390	111,903	0.242	27,059	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	6	6				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	54	54	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	5,367	294	5,073	0.980	4,972	
13	Otter Trawl, Twin	OPEN	all	MA	lg	820	278	542	0.420	228	
14	Otter Trawl, Twin	OPEN	all	NE	sm	585	500	85	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	17	17				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	85,930	1,545	84,385	0.066	5,570	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	530	530				P
22	Otter Trawl, Other	OPEN	all	NE	sm	426	426				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	112	105	7	0.787	6	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	2,156	2,117	39	0.734	28	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	1,459	1,319	140	0.898	126	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	50	50				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	21,707	9,478	12,229	0.302	3,695	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	1,646	1,386	260	0.568	148	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	50	0	50	0.578	29	
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	2,270	10	2,260	0.224	506	
37	Dredge, Scallop	AA	LIM	NE	all	5,393	0	5,393	0.323	1,743	
38	Dredge, Scallop	OPEN	GEN	MA	all	2,314	160	2,154	0.237	510	
39	Dredge, Scallop	OPEN	GEN	NE	all	608	12	596	0.465	277	
40	Dredge, Scallop	OPEN	LIM	MA	all	1,553	86	1,467	0.694	1,018	
41	Dredge, Scallop	OPEN	LIM	NE	all	7,371	0	7,371	0.339	2,498	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	7,014	7,014				P
47	Pots and Traps, Fish	OPEN	all	MA	all	375,259	277,756	97,503	0.161	15,663	
48	Pots and Traps, Fish	OPEN	all	NE	all	289,892	139,807	150,085	0.513	77,023	
49	Pots and Traps, Conch	OPEN	all	MA	all	506	120	386	0.682	263	
50	Pots and Traps, Conch	OPEN	all	NE	all	2,378	1,392	986	0.671	662	
52	Pots and Traps, Lobster	OPEN	all	MA	all	132,242	106,851	25,391	2.286	58,037	
53	Pots and Traps, Lobster	OPEN	all	NE	all	308,686	39,415	269,271	2.581	694,925	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	139	139	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	189	0	189	0.575	109	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	41	0	41	0.881	36	
	Confidential fleets					58,199	58,199				
	Other minor fleets					2,546	2,546				
					TOTAL	5,297,502	3,179,309	2,118,193	0.342	723,573	

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 2017 through June 2018 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	0	0	0			
2	Longline, Bottom	OPEN	all	NE	all	32	0	32	0.966	31	
3	Hand Line	OPEN	all	MA	all	51,331	33,757	17,574	0.521	9,149	
4	Hand Line	OPEN	all	NE	all	12,050	12,050	0			
5	Otter Trawl	OPEN	all	MA	sm	721,294	411,294	310,000	0.178	55,105	
6	Otter Trawl	OPEN	all	MA	lg	4,127,731	3,924,597	203,134	0.144	29,204	
7	Otter Trawl	OPEN	all	NE	sm	803,828	341,070	462,758	0.177	81,793	
8	Otter Trawl	OPEN	all	NE	lg	930,531	418,015	512,516	0.186	95,266	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	60	60				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	4,998	4,998	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	27,329	3,145	24,184	0.779	18,830	
13	Otter Trawl, Twin	OPEN	all	MA	lg	17,922	16,521	1,401	0.770	1,078	
14	Otter Trawl, Twin	OPEN	all	NE	sm	592	403	189	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	7,180	7,180				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	5,075	417	4,658	0.456	2,123	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	168	168	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	793	793				P
22	Otter Trawl, Other	OPEN	all	NE	sm	9,198	9,198				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	260	19	241	0.341	82	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	1,860	1,583	277	0.331	92	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	17,724	8,176	9,548	0.328	3,129	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	18,472	12,814	5,658	0.286	1,621	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	66,563	15,126	51,437	0.246	12,672	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	2,485	644	1,841	0.420	774	
35	Dredge, Scallop	AA	GEN	NE	all	613	1	612	0.511	313	
36	Dredge, Scallop	AA	LIM	MA	all	63,768	1,923	61,845	0.230	14,196	
37	Dredge, Scallop	AA	LIM	NE	all	185,267	163	185,104	0.146	26,945	
38	Dredge, Scallop	OPEN	GEN	MA	all	59,228	16,421	42,807	0.189	8,077	
39	Dredge, Scallop	OPEN	GEN	NE	all	65,554	169	65,385	0.334	21,866	
40	Dredge, Scallop	OPEN	LIM	MA	all	113,533	6,719	106,814	0.408	43,608	
41	Dredge, Scallop	OPEN	LIM	NE	all	442,296	35	442,261	0.257	113,795	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	34	34				P
47	Pots and Traps, Fish	OPEN	all	MA	all	781	178	603	0.645	389	
48	Pots and Traps, Fish	OPEN	all	NE	all	960	960	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	422	35	387	1.514	587	
53	Pots and Traps, Lobster	OPEN	all	NE	all	117	117	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	2,930	2,930				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	7,269	0	7,269	1.812	13,173	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	16,692	0	16,692	0.580	9,681	
	Confidential fleets					40,926	40,926				
	Other minor fleets					31	31				
					TOTAL	7,827,897	5,292,670	2,535,227	0.076	191,996	

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 2017 through June 2018 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	31,080	29,384	1,696	0.657	1,114	
4	Hand Line	OPEN	all	NE	all	4,891	4,891	0			
5	Otter Trawl	OPEN	all	MA	sm	6,168,732	4,416,877	1,751,855	0.207	363,062	
6	Otter Trawl	OPEN	all	MA	lg	1,763,749	1,137,541	626,208	0.261	163,625	
7	Otter Trawl	OPEN	all	NE	sm	7,068,832	3,886,351	3,182,481	0.177	563,193	
8	Otter Trawl	OPEN	all	NE	lg	1,755,627	1,154,801	600,826	0.251	151,072	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	20	20				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	21	21	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	35,200	6,136	29,064	1.722	50,054	
13	Otter Trawl, Twin	OPEN	all	MA	lg	2,956	2,682	274	0.945	259	
14	Otter Trawl, Twin	OPEN	all	NE	sm	300	300	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	705	705				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	391,000	74,221	316,779	0.175	55,426	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	2,350	2,350	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	2,156	2,156				P
22	Otter Trawl, Other	OPEN	all	NE	sm	3,355	3,355				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	132	131	1	0.902	1	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	1,315	1,237	78	0.729	57	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	113	113	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	120	120				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	81,996	80,363	1,633	0.323	528	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	3,635	3,635	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	3	0	3	1.028	3	
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	70	0	70	0.638	45	
37	Dredge, Scallop	AA	LIM	NE	all	268	0	268	0.388	104	
38	Dredge, Scallop	OPEN	GEN	MA	all	299	12	287	0.340	98	
39	Dredge, Scallop	OPEN	GEN	NE	all	144	123	21	0.605	13	
40	Dredge, Scallop	OPEN	LIM	MA	all	61	0	61	0.734	44	
41	Dredge, Scallop	OPEN	LIM	NE	all	2,173	0	2,173	0.412	895	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	1,696	1,696				P
47	Pots and Traps, Fish	OPEN	all	MA	all	6,367	4,993	1,374	0.645	886	
48	Pots and Traps, Fish	OPEN	all	NE	all	172,089	141,242	30,847	0.623	19,212	
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	37	10	27	0.852	23	
52	Pots and Traps, Lobster	OPEN	all	MA	all	700	629	71	0.585	42	
53	Pots and Traps, Lobster	OPEN	all	NE	all	25,763	6,943	18,820	2.581	48,570	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	5	5	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	100	0	100	2.949	294	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					12,627	12,627				
	Other minor fleets					4,981	4,981				
					TOTAL	17,545,669	10,980,651	6,565,018	0.108	711,973	

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 2017 through June 2018 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	2	2	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	811	697	114	0.795	91	
6	Otter Trawl	OPEN	all	MA	lg	2,337	2,157	180	0.911	164	
7	Otter Trawl	OPEN	all	NE	sm	13,640	200	13,440	0.241	3,244	
8	Otter Trawl	OPEN	all	NE	lg	2,341,178	2,172,851	168,327	0.140	23,598	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	24,586	21,743	2,843	0.346	984	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	15,953	15,085	868	0.369	320	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	3,767	2,778	989	0.787	778	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	568	0	568	0.283	161	
36	Dredge, Scallop	AA	LIM	MA	all	860	0	860	0.954	820	
37	Dredge, Scallop	AA	LIM	NE	all	38,640	0	38,640	0.257	9,918	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	3,933	0	3,933	0.742	2,918	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	11,441	0	11,441	0.575	6,576	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					3,820	3,820				
	Other minor fleets					0	0				
					TOTAL	2,461,536	2,219,333	242,203	0.111	26,831	

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 2017 through June 2018 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	22,408	20,628	1,780	0.760	1,352	
3	Hand Line	OPEN	all	MA	all	815	727	88	0.781	69	
4	Hand Line	OPEN	all	NE	all	83,122	68,396	14,726	0.313	4,611	
5	Otter Trawl	OPEN	all	MA	sm	789	65	724	0.635	460	
6	Otter Trawl	OPEN	all	MA	lg	1,873	1,545	328	0.808	265	
7	Otter Trawl	OPEN	all	NE	sm	14,018	4,900	9,118	0.422	3,852	
8	Otter Trawl	OPEN	all	NE	lg	939,681	897,233	42,448	0.281	11,946	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	78	78	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	59,468	52,091	7,377	0.195	1,439	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	60	60	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	177	34	143	1.106	158	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	242,877	225,285	17,592	0.541	9,518	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	59,730	34,069	25,661	0.332	8,521	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	164	0	164	0.429	70	
36	Dredge, Scallop	AA	LIM	MA	all	518	0	518	0.708	367	
37	Dredge, Scallop	AA	LIM	NE	all	3,583	120	3,463	0.261	905	
38	Dredge, Scallop	OPEN	GEN	MA	all	7	7	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	402	0	402	0.675	272	
40	Dredge, Scallop	OPEN	LIM	MA	all	436	56	380	0.700	266	
41	Dredge, Scallop	OPEN	LIM	NE	all	7,965	200	7,765	0.284	2,206	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	75	75	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	275	275	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	19	19	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	22,427	82	22,345	1.988	44,412	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					3,180	3,180				
	Other minor fleets					0	0				
					TOTAL	1,464,147	1,309,125	155,022	0.311	48,214	

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 2017 through June 2018 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	3,132	2,762	370	0.593	219	
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	4,520	480	4,040	0.428	1,728	
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	3,469	42	3,427	0.393	1,345	
8	Otter Trawl	OPEN	all	NE	lg	71,456	27,584	43,872	0.209	9,158	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	4,505	1,645	2,860	0.548	1,567	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	215	92	123	1.117	138	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	6,032	2,508	3,524	0.628	2,213	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	61,867	10,517	51,350	0.332	17,046	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	276	0	276	0.983	271	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	809	0	809	0.578	468	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	156	156	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	156,436	45,786	110,650	0.178	19,671	

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 2017 through June 2018 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	961	0	961	0.614	590	
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	2,038	0	2,038	0.750	1,529	
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	584	0	584	0.371	216	
8	Otter Trawl	OPEN	all	NE	lg	33,806	0	33,806	0.287	9,703	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	2,442	0	2,442	0.320	782	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	663	0	663	0.917	608	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	396	0	396	0.762	302	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	471	0	471	1.968	926	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	151	0	151	1.037	156	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	41,512	0	41,512	0.239	9,942	

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 2017 through June 2018 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	177,729	168,053	9,676	0.389	3,760	
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	128,560	91,687	36,873	0.309	11,380	
5	Otter Trawl	OPEN	all	MA	sm	8,227	0	8,227	0.600	4,935	
6	Otter Trawl	OPEN	all	MA	lg	3,618	3,618	0			
7	Otter Trawl	OPEN	all	NE	sm	338,206	700	337,506	0.287	96,954	
8	Otter Trawl	OPEN	all	NE	lg	8,879,188	8,399,431	479,757	0.216	103,716	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	658	658				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	2,446,590	2,114,222	332,368	0.095	31,625	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	34,870	28,808	6,062	0.337	2,045	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	9,382	5,589	3,793	0.870	3,300	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	661	0	661	0.492	325	
36	Dredge, Scallop	AA	LIM	MA	all	356	0	356	0.625	222	
37	Dredge, Scallop	AA	LIM	NE	all	15,832	0	15,832	0.215	3,398	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	391	0	391	0.868	339	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	5,464	0	5,464	0.562	3,069	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	2,110	2,110	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	570	570	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	7,403	0	7,403	0.614	4,543	
	Confidential fleets					960	960				
	Other minor fleets					0	0				
					TOTAL	12,060,776	10,816,406	1,244,370	0.118	146,226	

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 2017 through June 2018 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	18	0	18	0.602	11	
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	6,792	0	6,792	0.348	2,362	
6	Otter Trawl	OPEN	all	MA	lg	7,033	0	7,033	0.642	4,514	
7	Otter Trawl	OPEN	all	NE	sm	16,963	0	16,963	0.332	5,638	
8	Otter Trawl	OPEN	all	NE	lg	33,338	0	33,338	0.345	11,492	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	27	0	27	0.628	17	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	24	0	24	1.189	28	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	437	0	437	0.360	157	
36	Dredge, Scallop	AA	LIM	MA	all	346	0	346	0.721	250	
37	Dredge, Scallop	AA	LIM	NE	all	4,240	0	4,240	0.199	846	
38	Dredge, Scallop	OPEN	GEN	MA	all	41	0	41	0.959	39	
39	Dredge, Scallop	OPEN	GEN	NE	all	81	0	81	1.342	108	
40	Dredge, Scallop	OPEN	LIM	MA	all	33	0	33	0.205	7	
41	Dredge, Scallop	OPEN	LIM	NE	all	1,736	0	1,736	0.392	681	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	743	0	743	4.212	3,128	
53	Pots and Traps, Lobster	OPEN	all	NE	all	5,791	0	5,791	2.581	14,945	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	3,783	0	3,783	0.744	2,814	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	81,425	0	81,425	0.255	20,788	

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 2017 through June 2018 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	434	434	0			
3	Hand Line	OPEN	all	MA	all	113	113	0			
4	Hand Line	OPEN	all	NE	all	285,265	151,368	133,897	0.307	41,062	
5	Otter Trawl	OPEN	all	MA	sm	35	0	35	1.124	39	
6	Otter Trawl	OPEN	all	MA	lg	666	500	166	1.185	197	
7	Otter Trawl	OPEN	all	NE	sm	5,398	220	5,178	0.386	1,999	
8	Otter Trawl	OPEN	all	NE	lg	4,554,417	4,484,757	69,660	0.935	65,144	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	72,898	71,279	1,619	0.189	306	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	38	38	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	4	4	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	56	17	39	1.109	43	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	705,167	687,116	18,051	0.218	3,932	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	31,764	23,925	7,839	0.241	1,892	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	8	0	8	0.974	8	
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	783	0	783	0.565	443	
38	Dredge, Scallop	OPEN	GEN	MA	all	15	15	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	6	0	6	1.038	6	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					15	15				
	Other minor fleets					0	0				
					TOTAL	5,657,081	5,419,801	237,280	0.325	77,157	

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 2017 through June 2018 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	5	0	5	0.707	4	
2	Longline, Bottom	OPEN	all	NE	all	116	73	43	1.194	52	
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	948	844	104	0.457	47	
5	Otter Trawl	OPEN	all	MA	sm	1,192	800	392	0.811	318	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0			
7	Otter Trawl	OPEN	all	NE	sm	3,335	206	3,129	0.465	1,454	
8	Otter Trawl	OPEN	all	NE	lg	9,458,450	9,395,909	62,541	0.390	24,399	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	17	0	17	1.043	17	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	96,754	96,496	258	0.454	117	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	22,604	21,537	1,067	0.357	381	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	614	230	384	1.018	392	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	6	0	6	0.942	6	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	7	0	7	0.984	7	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	1,770	0	1,770	3.424	6,061	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					64	64				
	Other minor fleets					0	0				
					TOTAL	9,585,882	9,516,159	69,723	0.361	25,191	

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 2017 through June 2018 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	509	75	434	0.707	307	
2	Longline, Bottom	OPEN	all	NE	all	103	103	0			
3	Hand Line	OPEN	all	MA	all	39	39	0			
4	Hand Line	OPEN	all	NE	all	106	106	0			
5	Otter Trawl	OPEN	all	MA	sm	2,602	284	2,318	0.893	2,071	
6	Otter Trawl	OPEN	all	MA	lg	1,554	59	1,495	0.891	1,332	
7	Otter Trawl	OPEN	all	NE	sm	15,438	340	15,098	0.426	6,426	
8	Otter Trawl	OPEN	all	NE	lg	2,892,949	2,885,601	7,348	0.255	1,876	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	15	15	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	8,229	8,229	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	5	5	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	183,009	178,371	4,638	0.354	1,641	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	11,555	10,445	1,110	0.555	616	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	12	0	12	0.979	11	
36	Dredge, Scallop	AA	LIM	MA	all	416	0	416	1.018	423	
37	Dredge, Scallop	AA	LIM	NE	all	859	7	852	0.269	229	
38	Dredge, Scallop	OPEN	GEN	MA	all	136	0	136	0.793	108	
39	Dredge, Scallop	OPEN	GEN	NE	all	137	0	137	1.779	243	
40	Dredge, Scallop	OPEN	LIM	MA	all	72	0	72	0.573	41	
41	Dredge, Scallop	OPEN	LIM	NE	all	1,668	0	1,668	0.446	744	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	5	5	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	36	0	36	0.851	31	
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	3,119,454	3,083,684	35,770	0.207	7,409	

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 2017 through June 2018 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	848	5	843	1.112	937	
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	121,783	91	121,692	0.154	18,732	
6	Otter Trawl	OPEN	all	MA	lg	135,253	240	135,013	0.149	20,177	
7	Otter Trawl	OPEN	all	NE	sm	134,440	0	134,440	0.211	28,406	
8	Otter Trawl	OPEN	all	NE	lg	401,722	80	401,642	0.171	68,814	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	61	0	61	1.499	91	
13	Otter Trawl, Twin	OPEN	all	MA	lg	857	0	857	0.459	393	
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	667	0	667	0.635	424	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	721	0	721	0.441	318	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	31	0	31	0.533	17	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	734	0	734	0.190	139	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	119	0	119	0.980	117	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	3,680	0	3,680	0.188	691	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	115	0	115	0.433	50	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	1,120	0	1,120	0.759	851	
35	Dredge, Scallop	AA	GEN	NE	all	3,218	0	3,218	0.477	1,534	
36	Dredge, Scallop	AA	LIM	MA	all	6,059	0	6,059	0.257	1,560	
37	Dredge, Scallop	AA	LIM	NE	all	217,284	0	217,284	0.232	50,371	
38	Dredge, Scallop	OPEN	GEN	MA	all	6,909	0	6,909	0.233	1,607	
39	Dredge, Scallop	OPEN	GEN	NE	all	17,234	0	17,234	0.200	3,447	
40	Dredge, Scallop	OPEN	LIM	MA	all	16,548	0	16,548	0.271	4,490	
41	Dredge, Scallop	OPEN	LIM	NE	all	76,107	0	76,107	0.348	26,462	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	1,305	0	1,305	0.551	720	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	4,443	0	4,443	0.594	2,641	
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	1,151,259	416	1,150,843	0.085	97,914	

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 2017 through June 2018 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	3	3	0			
3	Hand Line	OPEN	all	MA	all	2	2	0			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	68,403	2,052	66,351	0.223	14,784	
6	Otter Trawl	OPEN	all	MA	lg	95,973	53,072	42,901	0.353	15,165	
7	Otter Trawl	OPEN	all	NE	sm	139,214	2,945	136,269	0.198	26,990	
8	Otter Trawl	OPEN	all	NE	lg	1,673,331	1,609,712	63,619	0.186	11,802	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	179	0	179	0.616	110	
13	Otter Trawl, Twin	OPEN	all	MA	lg	1,416	1,416	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	112	0	112	0.855	96	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	10,759	10,759	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	111	20	91	0.746	68	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	21,846	21,317	529	0.305	161	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	3,576	2,550	1,026	0.928	952	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	952	2	950	0.284	270	
36	Dredge, Scallop	AA	LIM	MA	all	290	20	270	0.482	130	
37	Dredge, Scallop	AA	LIM	NE	all	27,946	260	27,686	0.242	6,695	
38	Dredge, Scallop	OPEN	GEN	MA	all	1,188	0	1,188	0.412	489	
39	Dredge, Scallop	OPEN	GEN	NE	all	18,307	29	18,278	0.169	3,093	
40	Dredge, Scallop	OPEN	LIM	MA	all	1,886	0	1,886	0.347	654	
41	Dredge, Scallop	OPEN	LIM	NE	all	163,742	255	163,487	0.312	50,951	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	177	5	172	0.688	119	
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	743	0	743	4.212	3,128	
53	Pots and Traps, Lobster	OPEN	all	NE	all	1,219	15	1,204	0.815	981	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	2,164	20	2,144	0.492	1,056	
	Confidential fleets					849	849				
	Other minor fleets					0	0				
					TOTAL	2,234,386	1,705,303	529,083	0.119	63,089	

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 2017 through June 2018 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			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	22,936	0	22,936	0.704	16,146	
6	Otter Trawl	OPEN	all	MA	lg	13,513	3,050	10,463	0.298	3,122	
7	Otter Trawl	OPEN	all	NE	sm	19,799	200	19,599	0.238	4,656	
8	Otter Trawl	OPEN	all	NE	lg	1,104,168	1,009,417	94,751	0.151	14,273	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	55	0	55	0.731	40	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	8,317	7,796	521	0.202	105	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	43,043	0	43,043	1.020	43,899	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	6	0	6	1.118	7	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	4,017	3,900	117	0.354	42	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	807	807	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	9	0	9	0.978	8	
35	Dredge, Scallop	AA	GEN	NE	all	187	0	187	0.639	120	
36	Dredge, Scallop	AA	LIM	MA	all	1,753	0	1,753	0.681	1,193	
37	Dredge, Scallop	AA	LIM	NE	all	20,664	10	20,654	0.243	5,022	
38	Dredge, Scallop	OPEN	GEN	MA	all	664	0	664	0.312	207	
39	Dredge, Scallop	OPEN	GEN	NE	all	778	0	778	1.073	834	
40	Dredge, Scallop	OPEN	LIM	MA	all	207	0	207	0.332	69	
41	Dredge, Scallop	OPEN	LIM	NE	all	36,894	5	36,889	0.283	10,432	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	1	0	1	1.136	1	
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	34	0	34	0.881	30	
	Confidential fleets					1,245	1,245				
	Other minor fleets					0	0				
					TOTAL	1,279,096	1,026,430	252,666	0.200	50,589	

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 2017 through June 2018 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			
4	Hand Line	OPEN	all	NE	all	4	4	0			
5	Otter Trawl	OPEN	all	MA	sm	1,897	71	1,826	0.482	879	
6	Otter Trawl	OPEN	all	MA	lg	26,019	25,497	522	0.816	426	
7	Otter Trawl	OPEN	all	NE	sm	25,526	472	25,054	0.273	6,849	
8	Otter Trawl	OPEN	all	NE	lg	501,535	446,114	55,421	0.218	12,094	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	1,200	1,200	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	3	3				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	154	145	9	0.628	6	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	2	0	2	0.745	1	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	2	2	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	56,429	55,086	1,343	0.357	479	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	796	782	14	0.922	13	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	1,826	0	1,826	0.200	365	
36	Dredge, Scallop	AA	LIM	MA	all	71	0	71	0.578	41	
37	Dredge, Scallop	AA	LIM	NE	all	57,157	0	57,157	0.368	21,031	
38	Dredge, Scallop	OPEN	GEN	MA	all	134	0	134	0.472	63	
39	Dredge, Scallop	OPEN	GEN	NE	all	19,242	0	19,242	0.241	4,639	
40	Dredge, Scallop	OPEN	LIM	MA	all	472	0	472	0.264	125	
41	Dredge, Scallop	OPEN	LIM	NE	all	34,477	0	34,477	0.502	17,303	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					974	974				
	Other minor fleets					0	0				
					TOTAL	727,920	530,350	197,570	0.157	30,947	

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 2017 through June 2018 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	18	0	18	0.707	13	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	0	0	0			
4	Hand Line	OPEN	all	NE	all	12	12	0			
5	Otter Trawl	OPEN	all	MA	sm	3,255	517	2,738	1.224	3,352	
6	Otter Trawl	OPEN	all	MA	lg	2,402	506	1,896	0.887	1,681	
7	Otter Trawl	OPEN	all	NE	sm	2,620	0	2,620	0.254	665	
8	Otter Trawl	OPEN	all	NE	lg	60	60	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	19	0	19	1.001	19	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	77,890	0	77,890	0.755	58,816	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	0	0				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					0	0				
	Other minor fleets					0	0				
					TOTAL	86,277	1,095	85,182	0.692	58,940	

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 2017 through June 2018 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	135	135	0			
2	Longline, Bottom	OPEN	all	NE	all	433	27	406	0.999	406	
3	Hand Line	OPEN	all	MA	all	1,466	1,466	0			
4	Hand Line	OPEN	all	NE	all	15	15	0			
5	Otter Trawl	OPEN	all	MA	sm	591,200	249,663	341,537	0.297	101,593	
6	Otter Trawl	OPEN	all	MA	lg	25,157	19,462	5,695	0.258	1,471	
7	Otter Trawl	OPEN	all	NE	sm	1,311,855	498,701	813,154	0.211	171,449	
8	Otter Trawl	OPEN	all	NE	lg	205,027	28,083	176,944	0.551	97,475	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	100	100	0			
13	Otter Trawl, Twin	OPEN	all	MA	lg	219	0	219	1.018	223	
14	Otter Trawl, Twin	OPEN	all	NE	sm	13	0	13	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	5	5				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	3,988	0	3,988	0.324	1,293	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	2,075	2,075				P
22	Otter Trawl, Other	OPEN	all	NE	sm	1,265	1,265				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	71	71	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	7	7	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	929	135	794	0.264	210	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	84	20	64	0.872	56	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	23	0	23	1.082	25	

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 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	2	0	2	1.242	3	
35	Dredge, Scallop	AA	GEN	NE	all	3,064	0	3,064	0.303	928	
36	Dredge, Scallop	AA	LIM	MA	all	17,299	0	17,299	0.364	6,301	
37	Dredge, Scallop	AA	LIM	NE	all	181,067	0	181,067	0.139	25,095	
38	Dredge, Scallop	OPEN	GEN	MA	all	3,267	30	3,237	0.289	936	
39	Dredge, Scallop	OPEN	GEN	NE	all	6,276	0	6,276	0.431	2,705	
40	Dredge, Scallop	OPEN	LIM	MA	all	4,697	0	4,697	0.311	1,459	
41	Dredge, Scallop	OPEN	LIM	NE	all	175,252	0	175,252	0.207	36,321	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	555	555	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	10,223	10,223	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	44,328	13,383	30,945	2.419	74,862	
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	156	0	156	0.781	122	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	2,749	0	2,749	0.619	1,701	
	Confidential fleets					1,046	1,046				
	Other minor fleets					50	50				
					TOTAL	2,594,099	826,517	1,767,582	0.135	238,387	

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 2017 through June 2018 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	835	485	350	0.707	247	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	2	2	0			
4	Hand Line	OPEN	all	NE	all	467	467	0			
5	Otter Trawl	OPEN	all	MA	sm	2,141,398	1,866,615	274,783	0.283	77,780	
6	Otter Trawl	OPEN	all	MA	lg	94,450	37,079	57,371	0.731	41,960	
7	Otter Trawl	OPEN	all	NE	sm	9,211,806	8,500,120	711,686	0.230	163,332	
8	Otter Trawl	OPEN	all	NE	lg	674,146	379,865	294,281	0.134	39,361	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	17,158	35	17,123	0.728	12,473	
13	Otter Trawl, Twin	OPEN	all	MA	lg	135	10	125	1.018	127	
14	Otter Trawl, Twin	OPEN	all	NE	sm	8,967	5,375	3,592	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	4,508	1,622	2,886	0.457	1,319	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	517	0	517	0.214	111	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	9,865	9,865				P
22	Otter Trawl, Other	OPEN	all	NE	sm	403,796	403,796				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	161	161	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	59	13	46	0.539	25	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	37,412	31,344	6,068	0.270	1,640	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	16,168	13,446	2,722	0.551	1,500	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	102	0	102	0.676	69	
35	Dredge, Scallop	AA	GEN	NE	all	513	0	513	0.332	170	
36	Dredge, Scallop	AA	LIM	MA	all	3,116	0	3,116	0.374	1,166	
37	Dredge, Scallop	AA	LIM	NE	all	20,899	10	20,889	0.186	3,887	
38	Dredge, Scallop	OPEN	GEN	MA	all	722	0	722	0.253	183	
39	Dredge, Scallop	OPEN	GEN	NE	all	3,067	0	3,067	0.529	1,624	
40	Dredge, Scallop	OPEN	LIM	MA	all	1,150	0	1,150	0.469	540	
41	Dredge, Scallop	OPEN	LIM	NE	all	11,398	0	11,398	0.265	3,019	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	2	0	2	0.679	1	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	367	0	367	0.559	206	
	Confidential fleets					15,433	15,433				
	Other minor fleets					10	10				
					TOTAL	12,678,628	11,265,753	1,412,875	0.135	190,337	

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 2017 through June 2018 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	5,168	5,120	48	0.839	41	
3	Hand Line	OPEN	all	MA	all	761	761	0			
4	Hand Line	OPEN	all	NE	all	1,790,714	1,790,115	599	2.450	1,469	
5	Otter Trawl	OPEN	all	MA	sm	397,725	273,270	124,455	0.573	71,333	
6	Otter Trawl	OPEN	all	MA	lg	14,658	11,023	3,635	0.577	2,096	
7	Otter Trawl	OPEN	all	NE	sm	4,482,804	4,261,670	221,134	0.344	75,971	
8	Otter Trawl	OPEN	all	NE	lg	22,287	15,797	6,490	0.490	3,180	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	28,029	3,907	24,122	1.146	27,644	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	0	0	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	28	0	28	0.729	20	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	1,933	1,933				P
25	Floating Trap	OPEN	all	NE	all	11,558	11,558				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	357	306	51	0.432	22	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	1,046	862	184	0.617	114	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	1,800	1,278	522	0.425	222	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	4,719	2,075	2,644	0.229	605	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	689	132	557	0.464	259	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	131	80	51	0.762	39	

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 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	10	0	10	0.979	10	
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	114	0	114	0.396	45	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	25	25	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	85	0	85	0.388	33	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	12,204,162	12,203,934	228	0.674	153	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	6,750,996	6,750,895	101	0.462	47	P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	15	15	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	500	500	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					28,997	28,997				
	Other minor fleets					297	297				
					TOTAL	25,749,609	25,364,550	385,059	0.280	107,895	

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 2017 through June 2018 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	9	9	0			
4	Hand Line	OPEN	all	NE	all	2	2	0			
5	Otter Trawl	OPEN	all	MA	sm	1,464,811	703,380	761,431	0.348	264,850	
6	Otter Trawl	OPEN	all	MA	lg	44,986	32,037	12,949	0.414	5,365	
7	Otter Trawl	OPEN	all	NE	sm	3,833,660	2,336,775	1,496,885	0.176	263,438	
8	Otter Trawl	OPEN	all	NE	lg	69,419	57,370	12,049	0.377	4,543	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	36,351	674	35,677	1.093	39,000	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	5,241	800	4,441	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	9,033	6,625	2,408	0.346	834	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	136	136	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	1,082	1,082				P
22	Otter Trawl, Other	OPEN	all	NE	sm	16,490	16,490				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	8,579	8,527	52	0.318	17	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	578	566	12	0.586	7	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	30	30				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	183	166	17	1.094	19	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	6	0	6	0.877	6	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	21	0	21	0.737	15	
37	Dredge, Scallop	AA	LIM	NE	all	11	0	11	0.578	6	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	25	0	25	0.458	11	
40	Dredge, Scallop	OPEN	LIM	MA	all	83	0	83	1.036	86	
41	Dredge, Scallop	OPEN	LIM	NE	all	107	0	107	0.382	41	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	9	0	9	0.679	6	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					4,683	4,683				
	Other minor fleets					900	900				
					TOTAL	5,496,434	3,170,252	2,326,182	0.161	375,654	

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 2017 through June 2018 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	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	12	12	0			
4	Hand Line	OPEN	all	NE	all	12,055	12,055	0			
5	Otter Trawl	OPEN	all	MA	sm	6,725,663	6,525,348	200,315	0.416	83,416	
6	Otter Trawl	OPEN	all	MA	lg	159,476	147,705	11,771	0.286	3,369	
7	Otter Trawl	OPEN	all	NE	sm	12,783,522	12,647,449	136,073	0.217	29,484	
8	Otter Trawl	OPEN	all	NE	lg	348,327	345,180	3,147	0.800	2,516	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	36	36	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	1,183,591	1,153,360	30,231	0.953	28,803	
13	Otter Trawl, Twin	OPEN	all	MA	lg	207	207	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	137,613	137,613	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	15	15				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	206,214	206,214	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	4,190	345	3,845	1.888	7,260	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	70,269	70,269				P
22	Otter Trawl, Other	OPEN	all	NE	sm	359,133	359,133				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	506	502	4	0.728	3	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	23	0	23	0.628	14	
35	Dredge, Scallop	AA	GEN	NE	all	55	0	55	0.871	48	
36	Dredge, Scallop	AA	LIM	MA	all	1,448	18	1,430	0.296	423	
37	Dredge, Scallop	AA	LIM	NE	all	1,700	0	1,700	0.257	436	
38	Dredge, Scallop	OPEN	GEN	MA	all	500	29	471	0.505	238	
39	Dredge, Scallop	OPEN	GEN	NE	all	38	0	38	0.723	28	
40	Dredge, Scallop	OPEN	LIM	MA	all	861	15	846	0.499	422	
41	Dredge, Scallop	OPEN	LIM	NE	all	1,193	0	1,193	0.344	411	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	112	112	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	44,440	44,440				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	14	0	14	0.871	12	
	Confidential fleets					405,969	405,969				
	Other minor fleets					43	43				
					TOTAL	22,447,223	22,056,069	391,154	0.239	93,425	

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 2017 through June 2018 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	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			
4	Hand Line	OPEN	all	NE	all	101	85	16	0.833	13	
5	Otter Trawl	OPEN	all	MA	sm	24,465,057	24,126,944	338,113	0.293	98,996	
6	Otter Trawl	OPEN	all	MA	lg	147,162	144,088	3,074	0.689	2,117	
7	Otter Trawl	OPEN	all	NE	sm	26,848,740	25,689,084	1,159,656	0.287	332,774	
8	Otter Trawl	OPEN	all	NE	lg	64,844	1,281	63,563	0.263	16,716	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	148,818	16,575	132,243	0.211	27,890	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	45,489	7,442	38,047	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	371,713	371,657	56	0.855	48	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	13,680	0	13,680	0.189	2,588	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	481,001	0	481,001	1.085	522,076	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	210	210				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	8	0	8	0.762	6	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	30	0	30	0.871	26	
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	807	2	805	0.317	255	
37	Dredge, Scallop	AA	LIM	NE	all	2,884	0	2,884	0.458	1,321	
38	Dredge, Scallop	OPEN	GEN	MA	all	66	0	66	0.494	33	
39	Dredge, Scallop	OPEN	GEN	NE	all	104	0	104	0.991	103	
40	Dredge, Scallop	OPEN	LIM	MA	all	1,144	0	1,144	0.309	354	
41	Dredge, Scallop	OPEN	LIM	NE	all	8,177	0	8,177	0.383	3,133	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	63	0	63	0.414	26	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	4,285,000	4,285,000	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	1,051,000	1,051,000				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					17,899	17,899				
	Other minor fleets					0	0				
					TOTAL	57,953,996	55,711,267	2,242,729	0.280	627,840	

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 2017 through June 2018 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	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	3,395	3,395	0			
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	22,027	22,027	0			
4	Hand Line	OPEN	all	NE	all	0	0	0			
5	Otter Trawl	OPEN	all	MA	sm	1,251	779	472	0.985	465	
6	Otter Trawl	OPEN	all	MA	lg	287	287	0			
7	Otter Trawl	OPEN	all	NE	sm	3,401	2,153	1,248	0.294	367	
8	Otter Trawl	OPEN	all	NE	lg	10	10	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	151	15	136	1.146	156	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	0	0	0			P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	30	30	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	10	10				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	6	6	0			
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	146	0	146	3.078	450	
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	35	35	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	16	16	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					92	92				
	Other minor fleets					0	0				
					TOTAL	30,857	28,855	2,002	0.380	760	

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 2017 through June 2018 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	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
1	Longline, Bottom	OPEN	all	MA	all	1,415,613	1,414,990	623	0.707	440	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0			
3	Hand Line	OPEN	all	MA	all	13,509	13,509	0			
4	Hand Line	OPEN	all	NE	all	320	320	0			
5	Otter Trawl	OPEN	all	MA	sm	18,482	16,931	1,551	0.535	830	
6	Otter Trawl	OPEN	all	MA	lg	1,025	602	423	0.818	346	
7	Otter Trawl	OPEN	all	NE	sm	33,312	30,537	2,775	0.328	909	
8	Otter Trawl	OPEN	all	NE	lg	2,071	2,071	0			
10	Otter Trawl, Scallop	AA	GEN	MA	lg	0	0				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	0	0	0			P
12	Otter Trawl, Twin	OPEN	all	MA	sm	44	25	19	1.146	22	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0			
14	Otter Trawl, Twin	OPEN	all	NE	sm	122	103	19	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	0	0				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	284	284	0			P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	0	0	0			P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	0	0	0			P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	0	0				P
22	Otter Trawl, Other	OPEN	all	NE	sm	246	246				P
25	Floating Trap	OPEN	all	NE	all	0	0				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0			
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0			
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0			
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	0	0				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0			
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	1,716	926	790	0.513	406	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	0	0	0			

Table 5B, continued. Total catch (live lb), Vessel Trip Report landings (kept; live lb), estimated discards (live lb), associated coefficient of variation (CV), and standard error of the estimated discards (SE; live lb) for 25 individual species that compose the 14 species groups, by fleet, based on July 2017 through June 2018 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	Gear Type	Access Area	Trip Category	Region	Mesh Group	Total	Kept	Discarded	CV	SE	Pilot
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0			
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0			
36	Dredge, Scallop	AA	LIM	MA	all	50	50	0			
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0			
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0			
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0			
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0			
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0			
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0			
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	0	0	0			P
46	Pots and Traps, Other	OPEN	all	NE	all	0	0				P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0			
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0			
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0			
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0			
52	Pots and Traps, Lobster	OPEN	all	MA	all	55	55	0			
53	Pots and Traps, Lobster	OPEN	all	NE	all	71	71	0			
55	Pots and Traps, Crab	OPEN	all	MA	all	0	0	0			P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0			
57	Beam Trawl	OPEN	all	MA	sm	0	0				P
60	Dredge, Other	OPEN	all	MA	all	0	0				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0			
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0			
	Confidential fleets					55	55				
	Other minor fleets					0	0				
					TOTAL	1,486,975	1,480,775	6,200	0.228	1,412	

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 2017 through June 2018 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 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	1,595,552	1,576,176	19,376	0.426	8,247	
2	Longline, Bottom	OPEN	all	NE	all	4,799,880	4,309,280	490,600	0.239	117,425	
3	Hand Line	OPEN	all	MA	all	316,236	261,958	54,278	0.349	18,956	
4	Hand Line	OPEN	all	NE	all	2,512,561	2,306,305	206,256	0.256	52,719	
5	Otter Trawl	OPEN	all	MA	sm	52,608,309	41,351,074	11,257,235	0.098	1,104,356	
6	Otter Trawl	OPEN	all	MA	lg	20,300,478	10,454,308	9,846,170	0.075	742,537	
7	Otter Trawl	OPEN	all	NE	sm	75,071,960	61,973,548	13,098,412	0.080	1,046,754	
8	Otter Trawl	OPEN	all	NE	lg	73,694,645	52,768,389	20,926,256	0.120	2,506,820	
10	Otter Trawl, Scallop	AA	GEN	MA	lg	387,000	387,000				P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	267,814	251,606	16,209	0.000	0	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	1,575,733	1,189,225	386,508	0.341	131,787	
13	Otter Trawl, Twin	OPEN	all	MA	lg	529,408	414,126	115,282	0.302	34,853	
14	Otter Trawl, Twin	OPEN	all	NE	sm	208,941	152,798	56,142	0.000	0	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	16,834	16,834				P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	1,210,358	751,598	458,761	0.119	54,394	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	3,023,769	2,492,141	531,628	0.071	37,884	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	878,790	3,007	875,783	0.660	577,793	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	120,435	120,435				P
22	Otter Trawl, Other	OPEN	all	NE	sm	815,604	815,604				P
25	Floating Trap	OPEN	all	NE	all	13,381	13,381				P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	1,583,990	1,283,012	300,978	0.173	52,058	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	3,059,321	2,952,510	106,811	0.181	19,335	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	6,668,738	5,695,211	973,527	0.254	246,906	
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	2,386	2,386				P
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	8,284,374	6,846,983	1,437,391	0.188	269,809	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	21,132,635	18,055,328	3,077,307	0.104	320,477	
32	Purse Seine	OPEN	all	MA	all	0	0				P
33	Purse Seine	OPEN	all	NE	all	48,831,516	48,831,365	151	0.441	66	

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 2017 through June 2018 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 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
34	Dredge, Scallop	AA	GEN	MA	all	2,017,588	1,884,391	133,198	0.252	33,524	
35	Dredge, Scallop	AA	GEN	NE	all	3,998,196	3,717,758	280,438	0.174	48,896	
36	Dredge, Scallop	AA	LIM	MA	all	62,033,358	58,137,895	3,895,464	0.092	358,209	
37	Dredge, Scallop	AA	LIM	NE	all	169,168,438	150,726,183	18,442,255	0.068	1,257,005	
38	Dredge, Scallop	OPEN	GEN	MA	all	12,564,665	10,385,800	2,178,865	0.075	164,498	
39	Dredge, Scallop	OPEN	GEN	NE	all	9,039,701	7,611,759	1,427,942	0.146	208,932	
40	Dredge, Scallop	OPEN	LIM	MA	all	49,352,598	45,136,451	4,216,148	0.142	598,544	
41	Dredge, Scallop	OPEN	LIM	NE	all	172,097,751	147,211,797	24,885,953	0.122	3,027,753	
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	56,155,463	56,144,411	11,052	0.614	6,790	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	16,176,872	16,098,715	78,157	0.586	45,790	P
46	Pots and Traps, Other	OPEN	all	NE	all	8,744	8,744				P
47	Pots and Traps, Fish	OPEN	all	MA	all	385,190	285,501	99,688	0.168	16,743	
48	Pots and Traps, Fish	OPEN	all	NE	all	463,494	282,389	181,105	0.408	73,906	
49	Pots and Traps, Conch	OPEN	all	MA	all	561	120	441	0.631	278	
50	Pots and Traps, Conch	OPEN	all	NE	all	2,415	1,402	1,013	0.647	655	
52	Pots and Traps, Lobster	OPEN	all	MA	all	244,498	118,041	126,457	0.651	82,378	
53	Pots and Traps, Lobster	OPEN	all	NE	all	417,979	67,833	350,146	2.139	748,934	
55	Pots and Traps, Crab	OPEN	all	MA	all	394,144	241,029	153,115	0.126	19,246	P
56	Pots and Traps, Crab	OPEN	all	NE	all	4,337,324	3,209,542	1,127,782	0.315	354,707	
57	Beam Trawl	OPEN	all	MA	sm	1,101,402	1,101,402				P
60	Dredge, Other	OPEN	all	MA	all	170	170				P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	258,915,686	256,425,795	2,489,891	0.453	1,127,836	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	199,453,587	195,241,703	4,211,884	0.198	835,334	
	Confidential fleets					660,365	660,365				
	Other minor fleets					417,127	417,127				
					TOTAL	1,348,917,964	1,220,391,910	128,526,054	0.038	4,872,768	

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 (2019 Trips Needed) for fish and invertebrate species groups based on July 2017 through June 2018 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	2019 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	**33**	0	0	0	21	12	33	
3	Hand Line	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64	**12**	12	
4	Hand Line	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	**12**	12	
5	Otter Trawl	OPEN	all	MA	sm	0	0	0	0	0	0	**633**	0	420	270	274	214	0	0	73	12	633	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	**187**	0	0	30	87	100	0	0	54	12	187	
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	244	0	**296**	284	227	265	220	0	0	82	12	296	
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	0	0	0	99	47	373	152	**555**	210	0	0	93	12	555	
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	lg	9	9	9	9	9	9	9	9	9	9	9	9	9	9	**9**	9	9	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	**12**	12	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	**12**	12	
14	Otter Trawl, Twin	OPEN	all	NE	sm	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
15	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
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
17	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
18	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
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	9	9	9	9	9	9	9	9	9	9	9	9	9	9	**9**	9	9	P
20	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
21	Otter Trawl, Other	OPEN	all	MA	sm	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
22	Otter Trawl, Other	OPEN	all	NE	sm	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
23	Otter Trawl, Other	OPEN	all	NE	lg	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
24	Floating Trap	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
25	Floating Trap	OPEN	all	NE	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	**118**	0	0	0	36	12	118	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	**12**	12	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0	0	0	0	0	0	0	**124**	0	0	0	0	31	12	124	
29	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
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	**135**	0	0	0	47	12	135	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0	0	0	0	**123**	0	0	47	66	0	0	0	62	12	123	
32	Purse Seine	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
33	Purse Seine	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	**9**	9	
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	**9**	9	
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	**3**	3	
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0	0	0	0	**16**	0	0	10	0	0	0	0	15	12	16	
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0	0	36	0	30	**47**	34	20	0	0	0	0	25	12	47	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0	0	0	0	0	0	0	7	0	0	0	0	41	**12**	12	
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	**12**	12	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0	0	0	0	9	0	0	11	0	0	0	0	12	**12**	12	
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0	0	**96**	0	23	57	41	13	0	67	0	0	18	12	96	

See text for fleet abbreviations.

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 (2019 Trips Needed) for fish and invertebrate species groups based on July 2017 through June 2018 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	2019 Trips Needed	Pilot
42	Danish Seine	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	**12**	12	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	9	9	9	9	9	9	9	9	9	9	9	9	9	9	**9**	9	9	P
45	Pots and Traps, Other	OPEN	all	MA	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
46	Pots and Traps, Other	OPEN	all	NE	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	**12**	12	
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	**9**	9	
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	**12**	12	
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	**12**	12	
51	Pots and Traps, Hagfish	OPEN	all	NE	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0	9	0	0	0	0	0	0	0	0	0	0	26	**12**	12	
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329	**12**	12	
54	Weir	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
55	Pots and Traps, Crab	OPEN	all	MA	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0	11	0	0	0	0	0	0	0	0	0	0	12	**12**	12	
57	Beam Trawl	OPEN	all	MA	sm	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
58	Beam Trawl	OPEN	all	MA	lg	9	9	9	9	9	9	9	9	9	9	9	9	9	9	**9**	9	9	P
59	Beam Trawl	OPEN	all	NE	lg	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
60	Dredge, Other	OPEN	all	MA	all	9	9	9	9	9	9	9	9	9	9	9	9	9	9	**9**	9	9	P
61	Dredge, Urchin	OPEN	all	NE	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0	0	0	0	4	0	0	0	0	0	0	0	41	**12**	12	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0	0	0	0	**24**	0	0	17	0	0	0	0	38	12	24	
					Totals	**216**	**216**	**216**	**236**	**348**	**460**	**1,364**	**663**	**1,368**	**1,144**	**1,749**	**1,027**	**216**	**216**	**1,666**	**609**	**2,840**	

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 (2019 Sea Days Needed) for fish and invertebrate species groups based on July 2017 through June 2018 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	2019 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	107	**107**	107	
2	Longline, Bottom	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	**35**	0	0	0	23	14	35	
3	Hand Line	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	**14**	14	
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	0	0	0	**1,403**	0	930	599	608	474	0	0	162	30	1,403	
6	Otter Trawl	OPEN	all	MA	lg	0	0	0	0	0	0	**451**	0	0	71	209	242	0	0	132	30	451	
7	Otter Trawl	OPEN	all	NE	sm	0	0	0	0	0	611	0	**740**	713	568	664	550	0	0	205	34	740	
8	Otter Trawl	OPEN	all	NE	lg	0	0	0	0	0	0	284	134	1,068	435	**1,590**	602	0	0	267	35	1,590	
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	13	13	13	13	13	13	13	13	13	13	13	13	13	13	**13**	13	13	P
11	Otter Trawl, Scallop	OPEN	GEN	MA	lg	19	19	19	19	19	19	19	19	19	19	19	19	19	19	**19**	19	19	P
12	Otter Trawl, Twin	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	**55**	55	
13	Otter Trawl, Twin	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	**13**	13	
14	Otter Trawl, Twin	OPEN	all	NE	sm	16	16	16	16	16	16	16	16	16	16	16	16	16	16	**16**	16	16	P
15	Otter Trawl, Ruhle	OPEN	all	MA	sm	39	39	39	39	39	39	39	39	39	39	39	39	39	39	**39**	39	39	P
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	4	4	4	4	4	4	4	4	4	4	4	4	4	4	**4**	4	4	P
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	61	61	61	61	61	61	61	61	61	61	61	61	61	61	**61**	61	61	P
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	105	105	105	105	105	105	105	105	105	105	105	105	105	105	**105**	105	105	P
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	59	59	59	59	59	59	59	59	59	59	59	59	59	59	**59**	59	59	P
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	16	16	16	16	16	16	16	16	16	16	16	16	16	16	**16**	16	16	P
21	Otter Trawl, Other	OPEN	all	MA	sm	18	18	18	18	18	18	18	18	18	18	18	18	18	18	**18**	18	18	P
22	Otter Trawl, Other	OPEN	all	NE	sm	71	71	71	71	71	71	71	71	71	71	71	71	71	71	**71**	71	71	P
23	Otter Trawl, Other	OPEN	all	NE	lg	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
24	Floating Trap	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
25	Floating Trap	OPEN	all	NE	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	0	0	0	0	0	0	0	0	0	0	**125**	0	0	0	38	13	125	
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	**13**	13	
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	0	0	0	0	0	0	0	0	0	**145**	0	0	0	0	36	14	145	
29	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
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	0	0	0	0	0	0	0	0	0	0	**181**	0	0	0	65	20	181	
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	0	0	0	0	0	0	**180**	0	0	69	96	0	0	0	90	21	180	
32	Purse Seine	OPEN	all	MA	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
33	Purse Seine	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	**19**	19	
34	Dredge, Scallop	AA	GEN	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	**17**	17	
35	Dredge, Scallop	AA	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	**6**	6	
36	Dredge, Scallop	AA	LIM	MA	all	0	0	0	0	0	0	**112**	0	0	68	0	0	0	0	99	80	112	
37	Dredge, Scallop	AA	LIM	NE	all	0	0	0	0	268	0	222	**352**	252	149	0	0	0	0	187	89	352	
38	Dredge, Scallop	OPEN	GEN	MA	all	0	0	0	0	0	0	0	0	0	11	0	0	0	0	68	**21**	21	
39	Dredge, Scallop	OPEN	GEN	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	**18**	18	
40	Dredge, Scallop	OPEN	LIM	MA	all	0	0	0	0	0	0	79	0	0	97	0	0	0	0	99	**99**	99	
41	Dredge, Scallop	OPEN	LIM	NE	all	0	0	0	0	**904**	0	214	543	393	118	0	635	0	0	173	111	904	

See text for fleet abbreviations.

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 (2019 Sea Days Needed) for fish and invertebrate species groups based on July 2017 through June 2018 data. Bold red font indicates basis for fleet sea days. "P" indicates fleets with "pilot" designation. Species group abbreviations are given in Table 1.

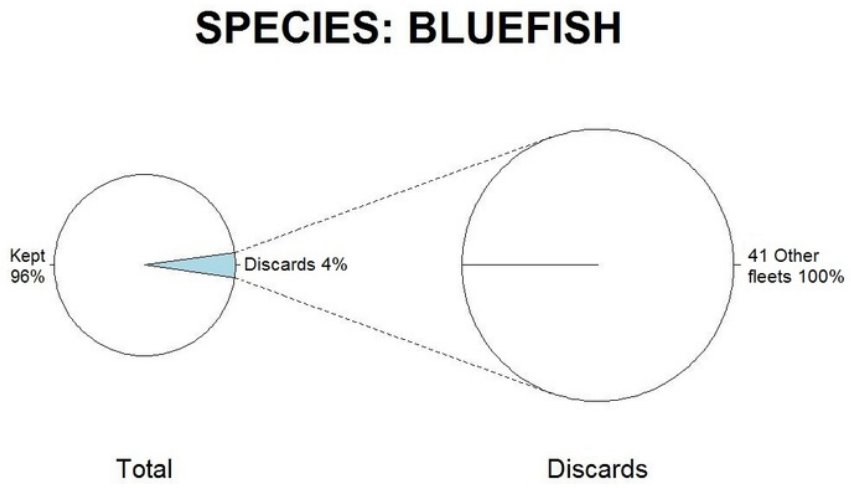
Row	Fleet Gear Type	Access Area	Trip	Region	Mesh Size	BLUE	HERR	SAL	RCRAB	SCAL	SBM	MONK	GFL	GFS	SKATE	DOG	FSB	SCOQ	TILE	Pilot Days	Min Pilot Days	2019 Sea Days Needed	Pilot
42	Danish Seine	OPEN	all	MA	all	10	10	10	10	10	10	10	10	10	10	10	10	10	10	**10**	10	10	P
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	**42**	42	
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	38	38	38	38	38	38	38	38	38	38	38	38	38	38	**38**	38	38	P
45	Pots and Traps, Other	OPEN	all	MA	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
46	Pots and Traps, Other	OPEN	all	NE	all	12	12	12	12	12	12	12	12	12	12	12	12	12	12	**12**	12	12	P
47	Pots and Traps, Fish	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	**12**	12	
48	Pots and Traps, Fish	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	**9**	9	
49	Pots and Traps, Conch	OPEN	all	MA	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	**12**	12	
50	Pots and Traps, Conch	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	**12**	12	
51	Pots and Traps, Hagfish	OPEN	all	NE	all	133	133	133	133	133	133	133	133	133	133	133	133	133	133	**133**	133	133	P
52	Pots and Traps, Lobster	OPEN	all	MA	all	0	0	0	13	0	0	0	0	0	0	0	0	0	0	38	**19**	19	
53	Pots and Traps, Lobster	OPEN	all	NE	all	0	0	0	0	0	0	0	0	0	0	0	0	0	0	444	**17**	17	
54	Weir	OPEN	all	NE	all	3	3	3	3	3	3	3	3	3	3	3	3	3	3	**3**	3	3	P
55	Pots and Traps, Crab	OPEN	all	MA	all	29	29	29	29	29	29	29	29	29	29	29	29	29	29	**29**	29	29	P
56	Pots and Traps, Crab	OPEN	all	NE	all	0	0	0	80	0	0	0	0	0	0	0	0	0	0	90	**90**	90	
57	Beam Trawl	OPEN	all	MA	sm	29	29	29	29	29	29	29	29	29	29	29	29	29	29	**29**	29	29	P
58	Beam Trawl	OPEN	all	MA	lg	30	30	30	30	30	30	30	30	30	30	30	30	30	30	**30**	30	30	P
59	Beam Trawl	OPEN	all	NE	lg	14	14	14	14	14	14	14	14	14	14	14	14	14	14	**14**	14	14	P
60	Dredge, Other	OPEN	all	MA	all	11	11	11	11	11	11	11	11	11	11	11	11	11	11	**11**	11	11	P
61	Dredge, Urchin	OPEN	all	NE	all	6	6	6	6	6	6	6	6	6	6	6	6	6	6	**6**	6	6	P
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	0	0	0	0	0	0	8	0	0	0	0	0	0	0	80	**24**	24	
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	0	0	0	0	0	0	**35**	0	0	25	0	0	0	0	55	18	35	
					Totals	**775**	**775**	**775**	**868**	**1,947**	**1,386**	**3,763**	**2,544**	**4,131**	**3,130**	**4,283**	**3,278**	**775**	**775**	**3,767**	**1,923**	**7,667**	

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 2017 through June 2018 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	35	33	4
5	Otter Trawl	OPEN	all	MA	sm	MONK	1,403	633	17
						GFS	930	420	12
						DOG	608	274	8
						SKATE	599	270	7
						FSB	474	214	6
6	Otter Trawl	OPEN	all	MA	lg	MONK	451	187	7
						FSB	242	100	4
						DOG	209	87	3
						SKATE	71	30	1
7	Otter Trawl	OPEN	all	NE	sm	GFL	740	296	7
						GFS	713	284	7
						DOG	664	265	7
						SBM	611	244	6
						SKATE	568	227	6
						FSB	550	220	5
8	Otter Trawl	OPEN	all	NE	lg	DOG	1,590	555	12
						GFS	1,068	373	8
						FSB	602	210	5
						SKATE	435	152	3
						MONK	284	99	2
						GFL	134	47	1
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	DOG	125	118	7
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	SKATE	145	124	9
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	DOG	181	135	6
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	MONK	180	123	4
						DOG	96	66	2
						SKATE	69	47	2
36	Dredge, Scallop	AA	LIM	MA	all	MONK	112	16	3
						SKATE	68	10	2
37	Dredge, Scallop	AA	LIM	NE	all	GFL	352	47	4
						SCAL	268	36	3
						GFS	252	34	3
						MONK	222	30	3
						SKATE	149	20	2
38	Dredge, Scallop	OPEN	GEN	MA	all	MPC	21	12	1
						SKATE	11	7	<1
40	Dredge, Scallop	OPEN	LIM	MA	all	MPC	99	12	3
						SKATE	97	11	3
						MONK	79	9	3

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 2017 through June 2018 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
41	Dredge, Scallop	OPEN	LIM	NE	all	SCAL	904	96	11
						FSB	635	67	7
						GFL	543	57	6
						GFS	393	41	5
						MONK	214	23	3
						SKATE	118	13	1
52	Pots and Traps, Lobster	OPEN	all	MA	all	MPC	19	12	1
						RCRAB	13	9	1
56	Pots and Traps, Crab	OPEN	all	NE	all	MPC	90	12	17
						RCRAB	80	11	16
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	MPC	24	12	1
						MONK	8	4	<1
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	MONK	35	24	1
						SKATE	25	17	1



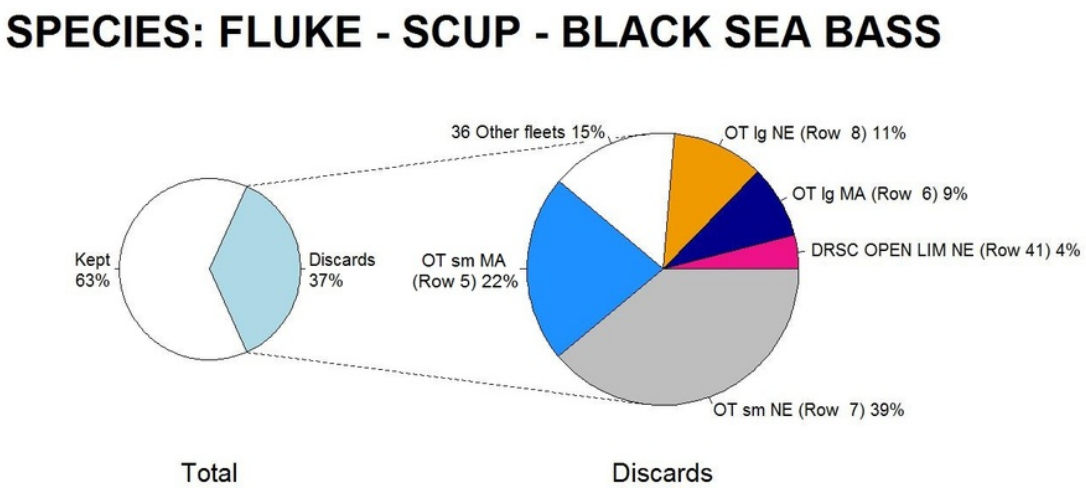
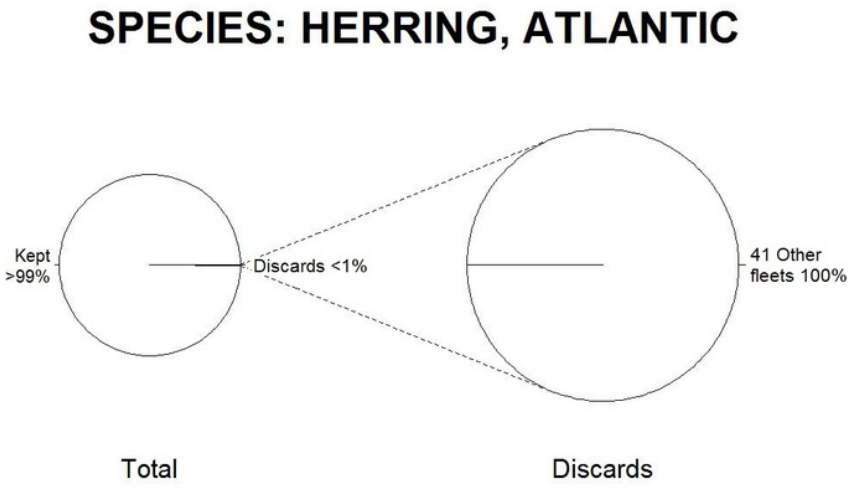


Figure 1A. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar*]), based on July 2017 through June 2018 data. Because percentages 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).*



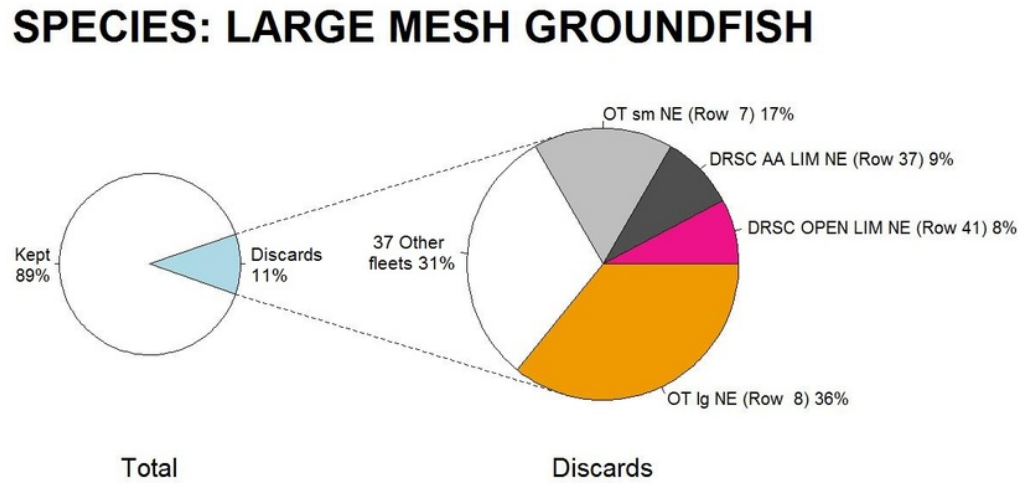
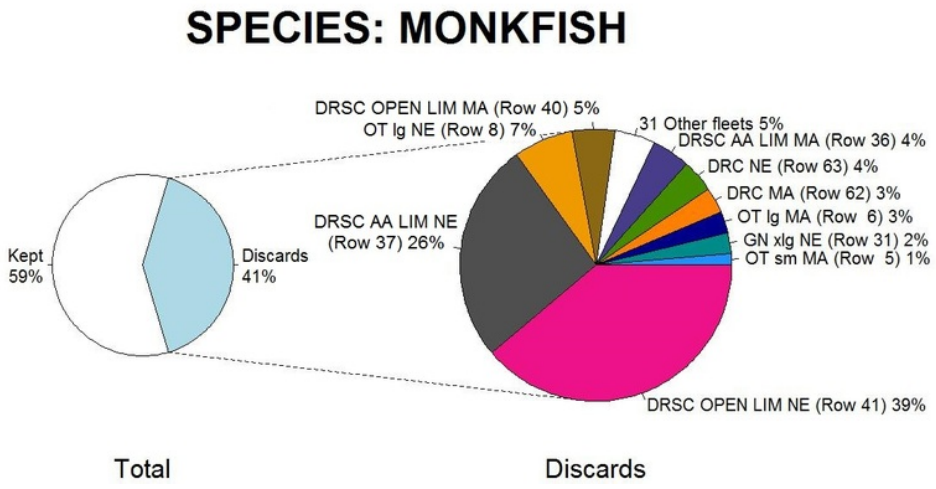


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar]*), based on July 2017 through June 2018 data. 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.



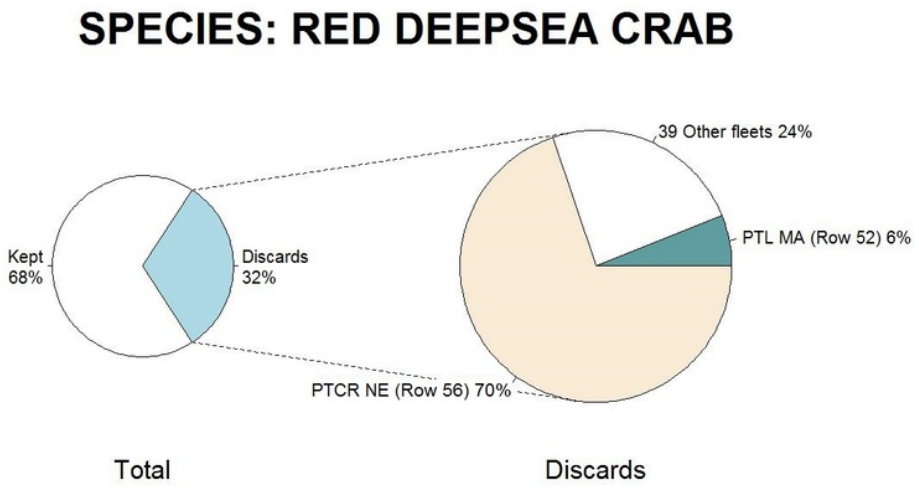
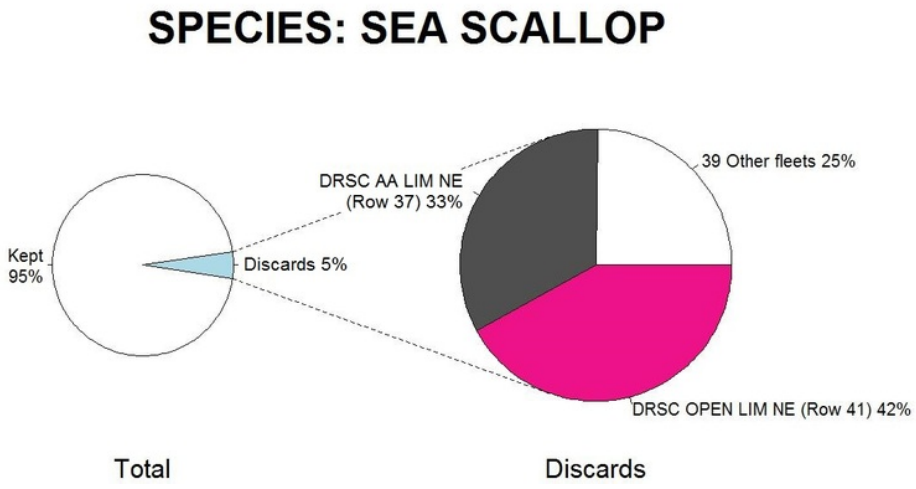


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar]*), based on July 2017 through June 2018 data. 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 quinquedens*).



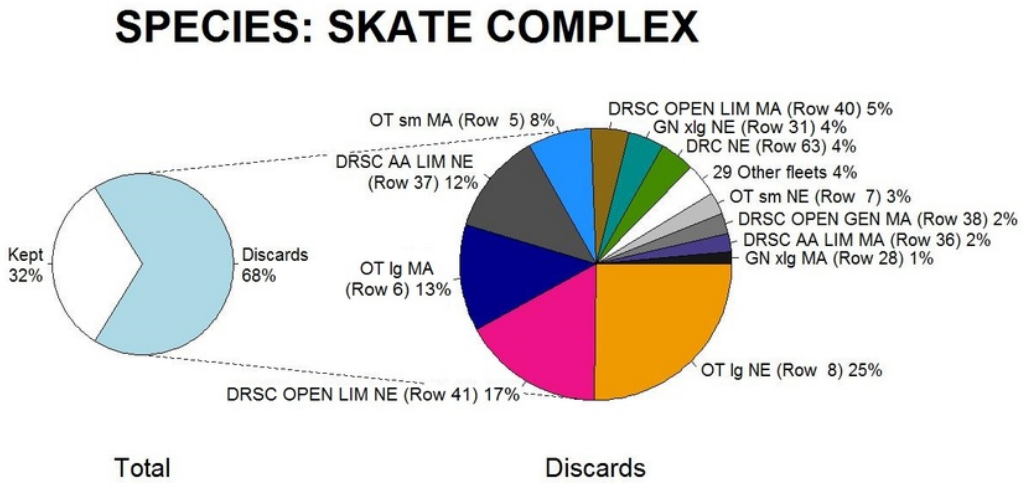
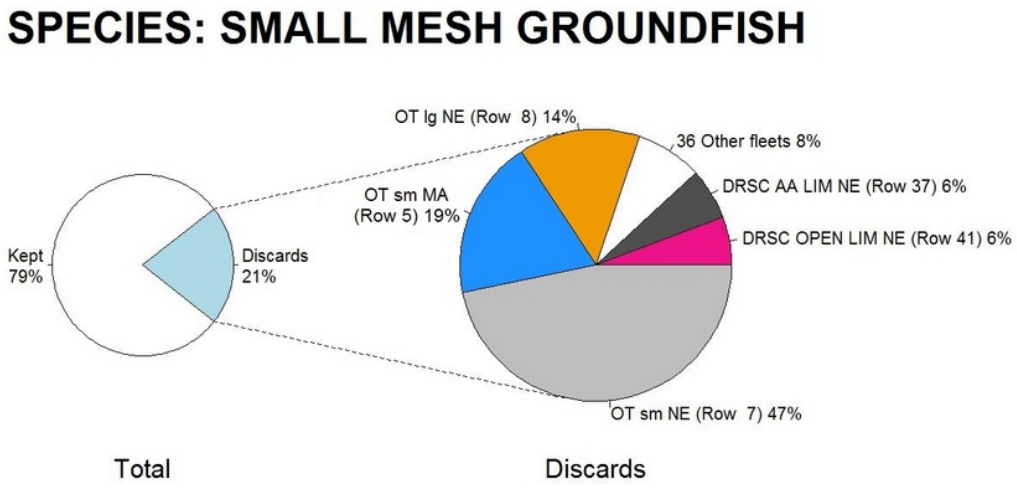


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar]*), based on July 2017 through June 2018 data. 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).



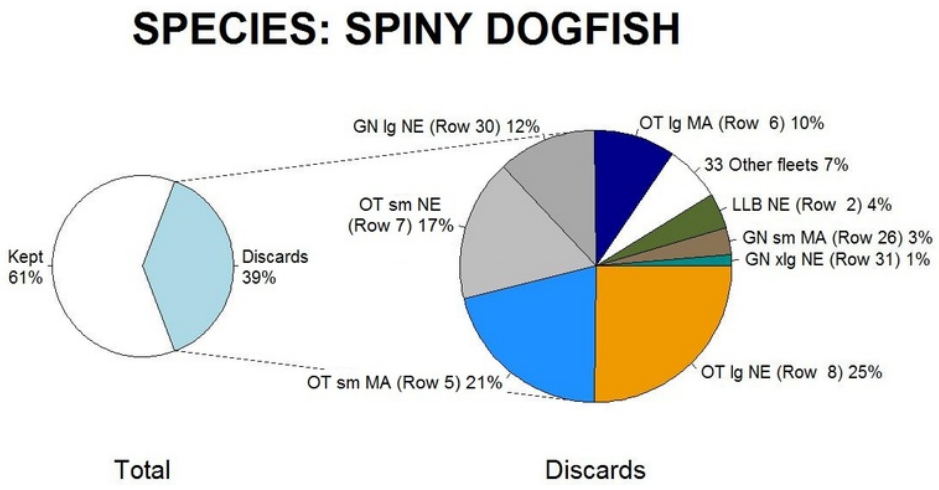
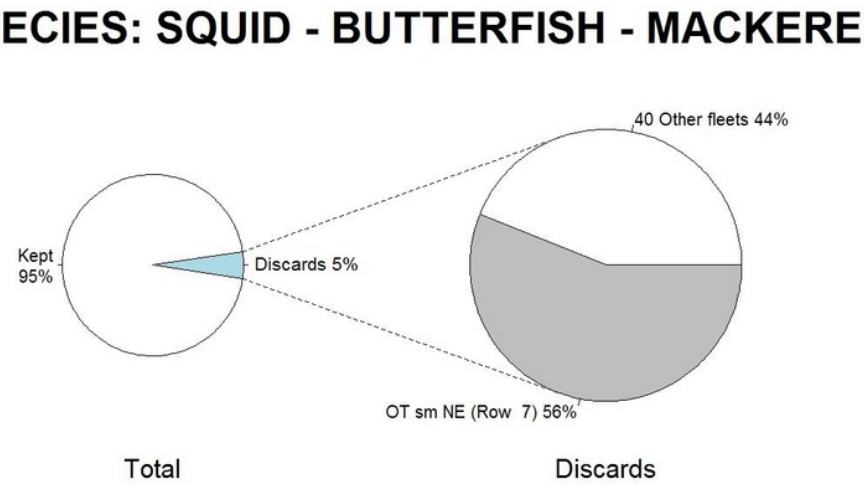


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar]*), based on July 2017 through June 2018 data. 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*).



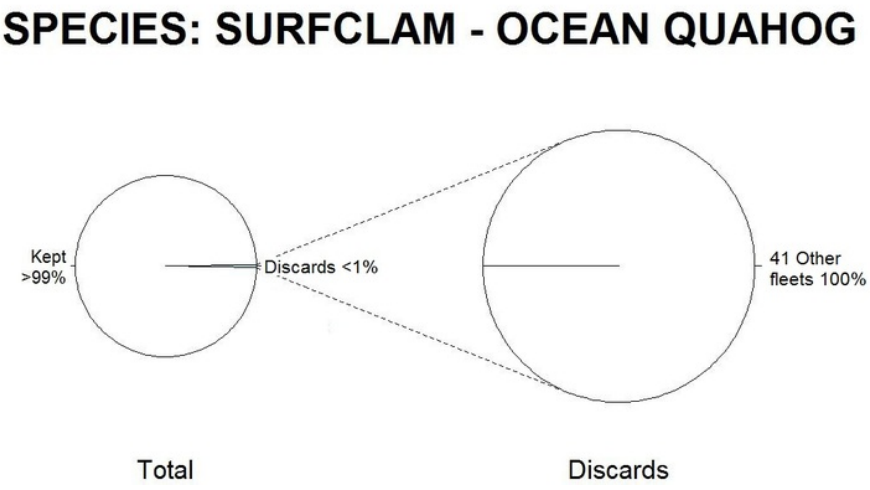


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar]*), based on July 2017 through June 2018 data. 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*).

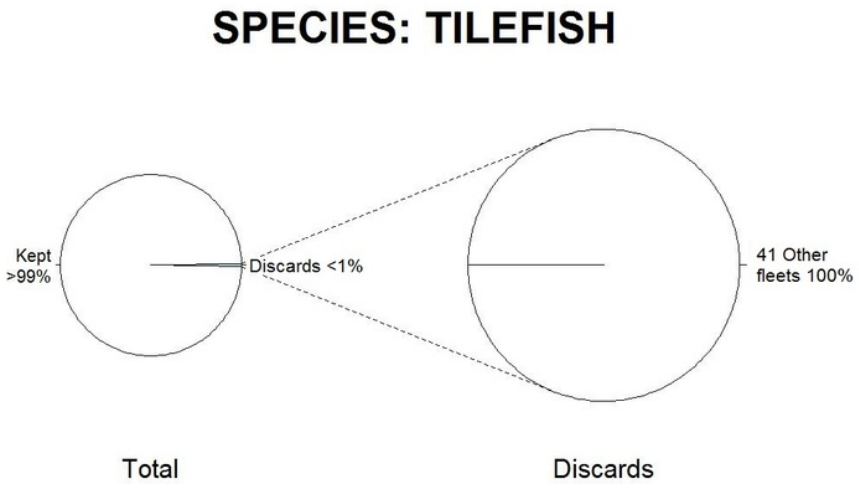
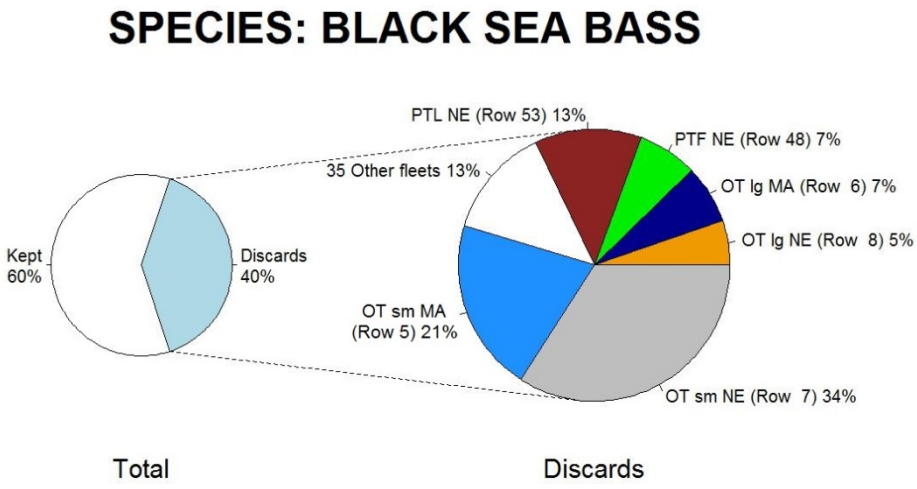


Figure 1A, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for each of the 14 species groups (except Atlantic salmon [*Salmo salar]*), based on July 2017 through June 2018 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.
Top: tilefish.



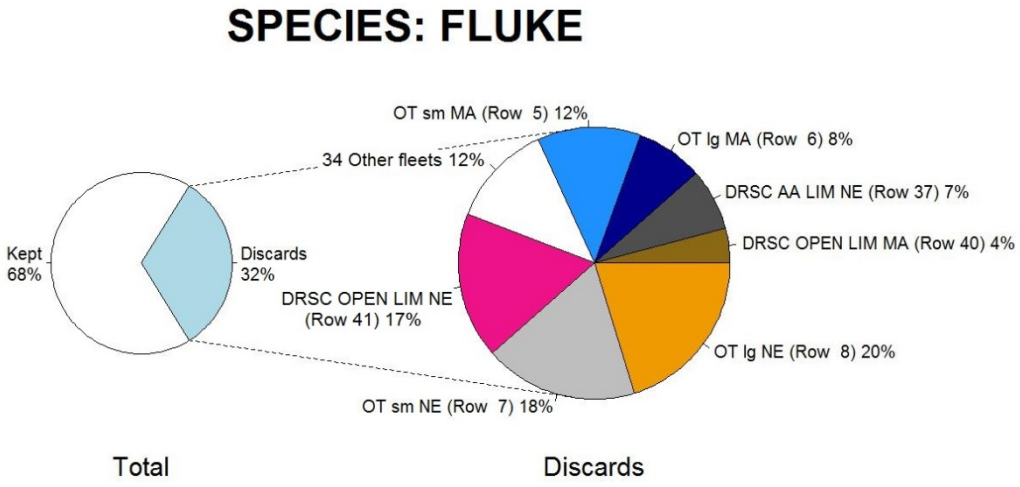
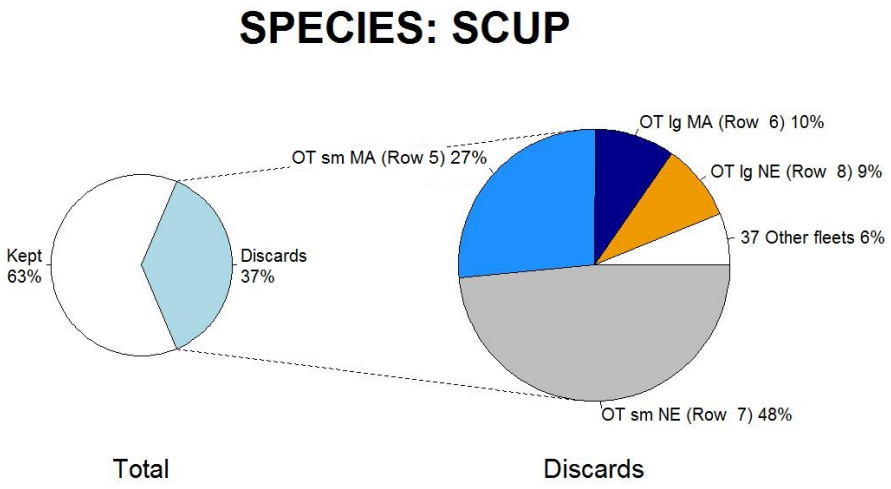
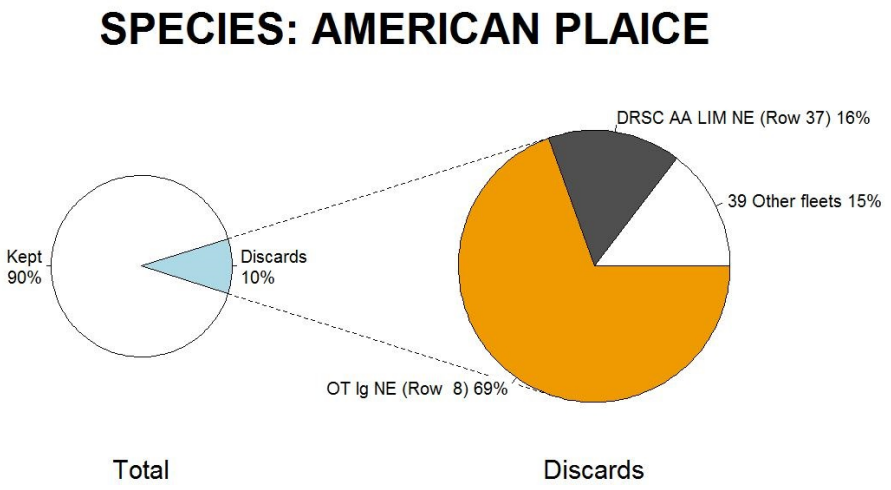


Figure 1B. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2017 through June 2018 data. Because percentages 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*).





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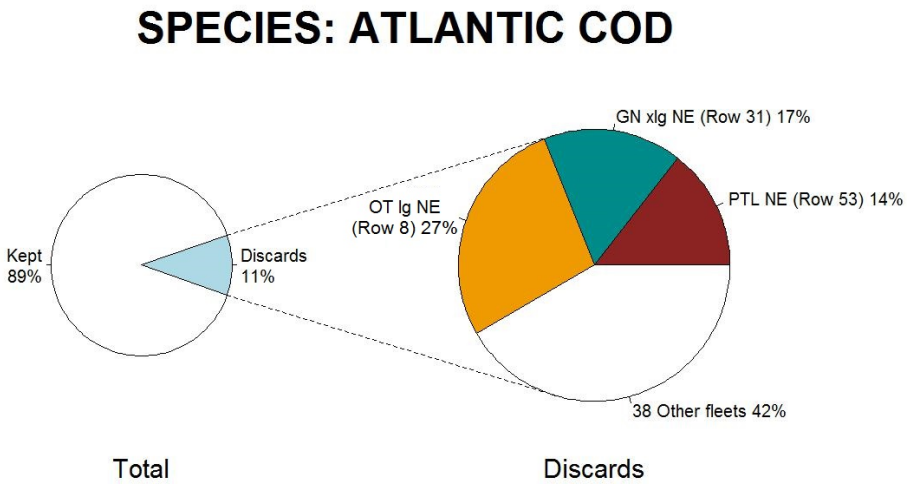
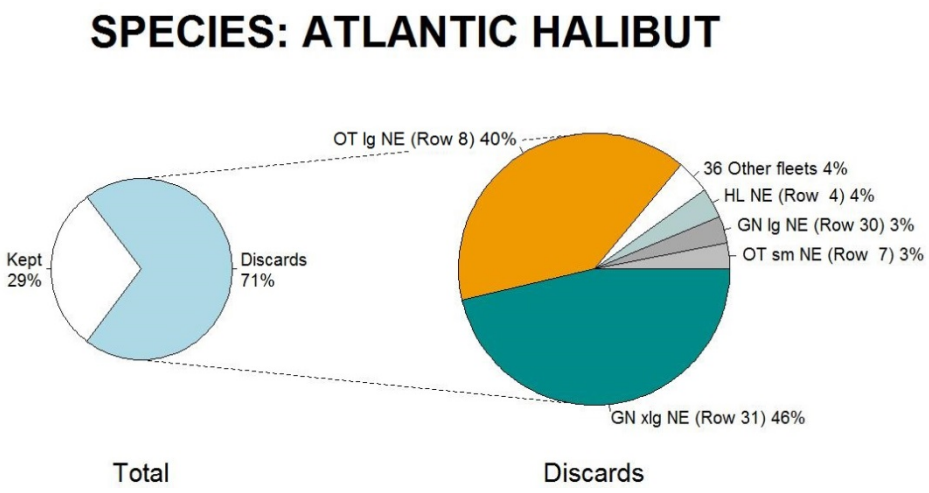
Top: scup (*Stenotomus chrysops*); bottom: American plaice (*Hippoglossoides platessoides*).





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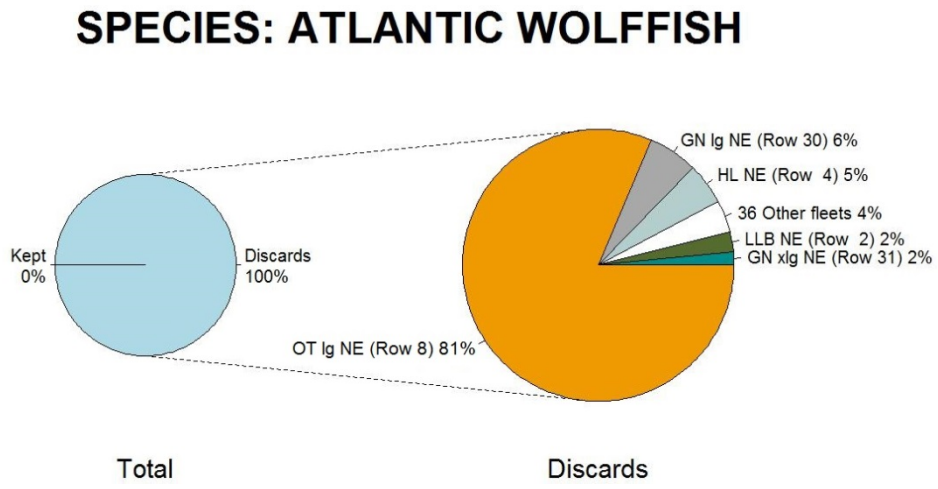
Top: Atlantic cod (*Gadus morhua*); bottom: Atlantic halibut (*Hippoglossus hippoglossus*).



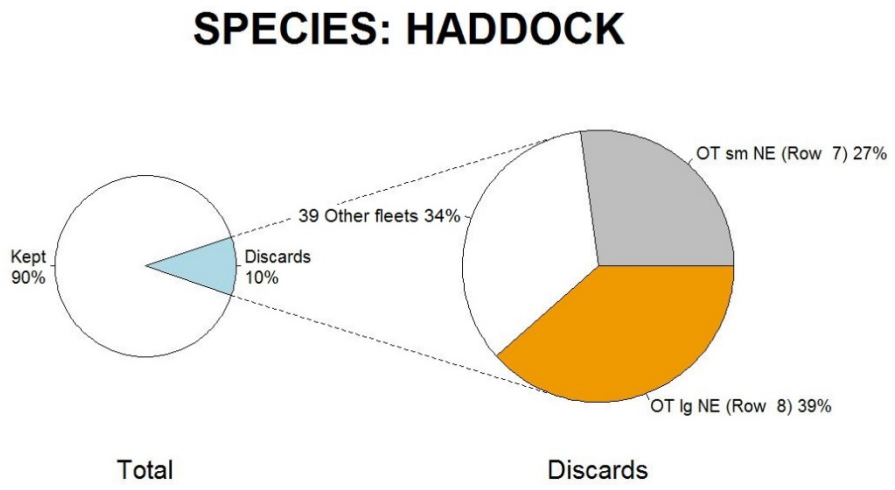
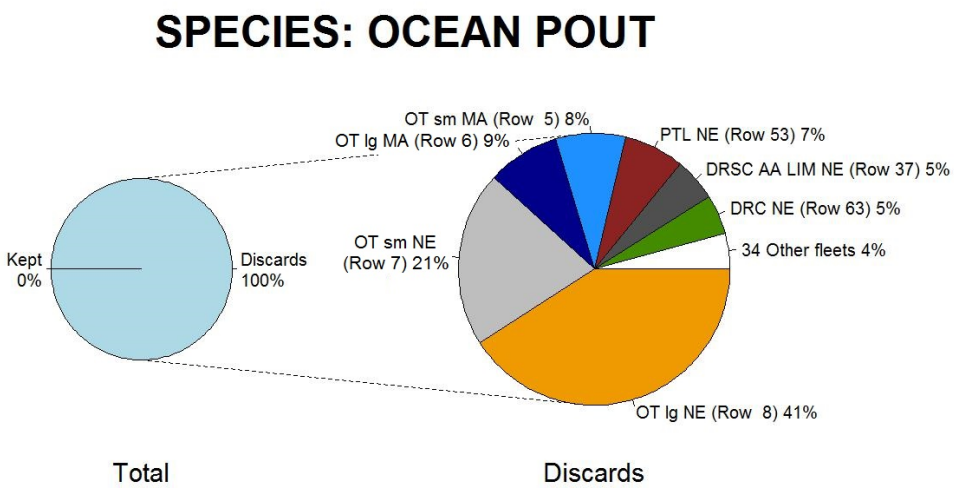
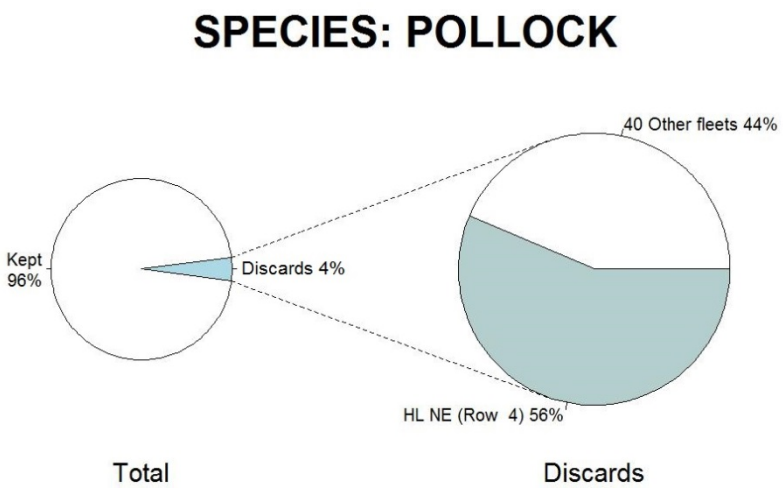


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2017 through June 2018 data. Because 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*).





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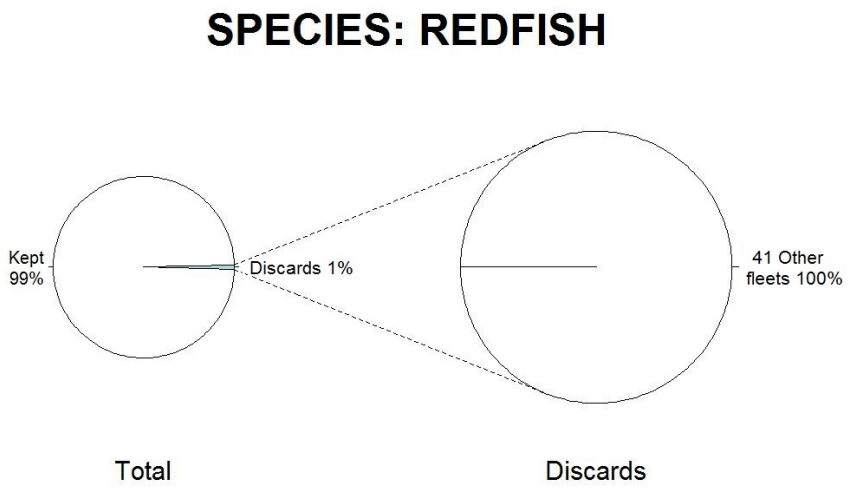
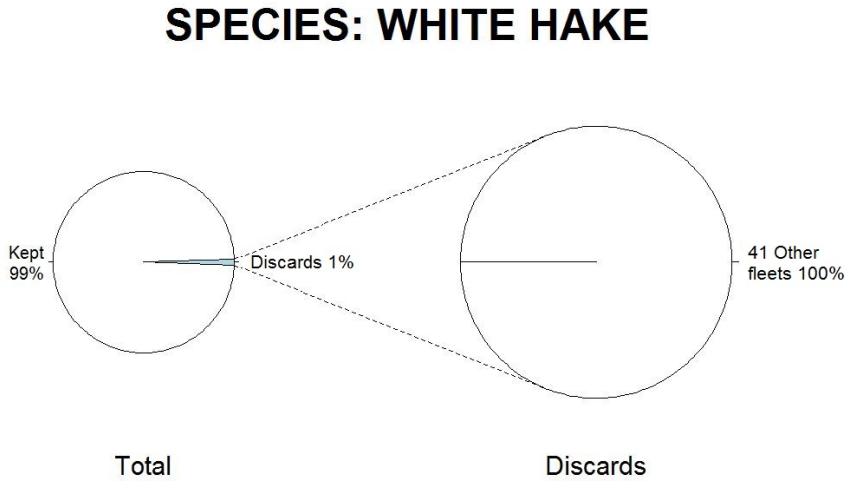
Top: ocean pout (*Zoarces americanus*); bottom: pollock (*Pollachius virens*).





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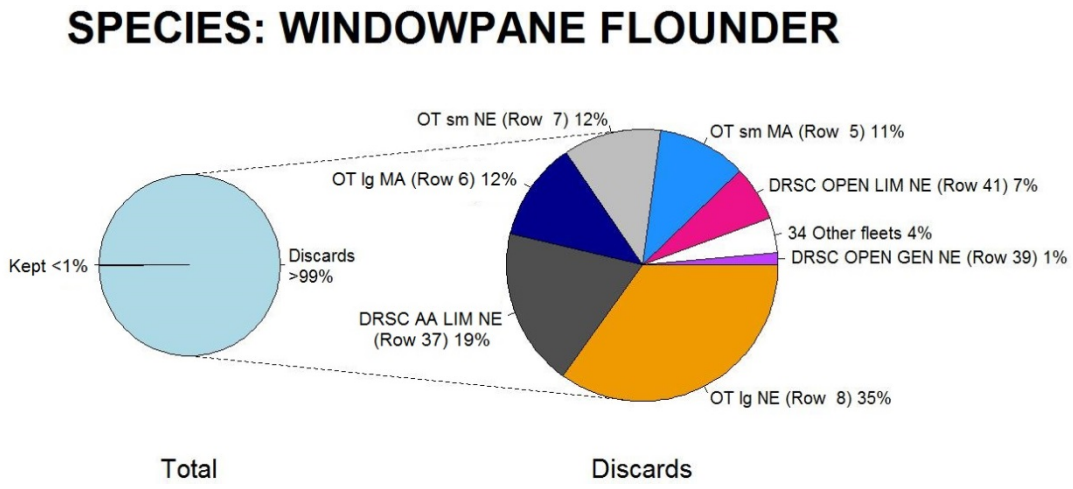
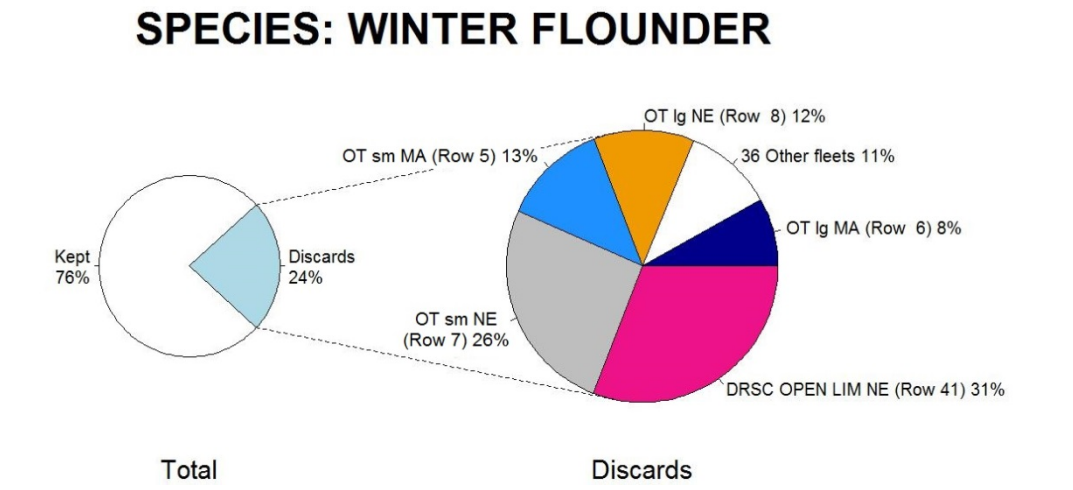
Top: redfish (*Sebastes fasciatus*); bottom: white hake (*Urophycis tenuis*).





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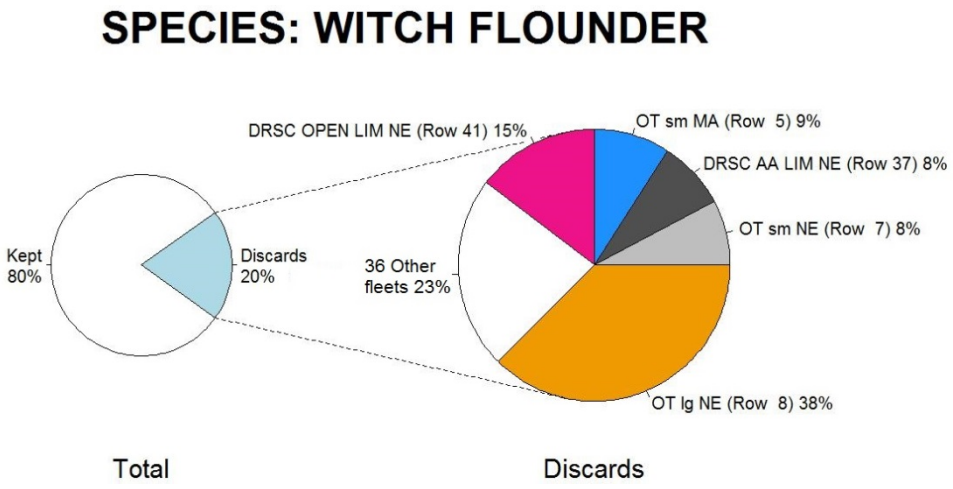
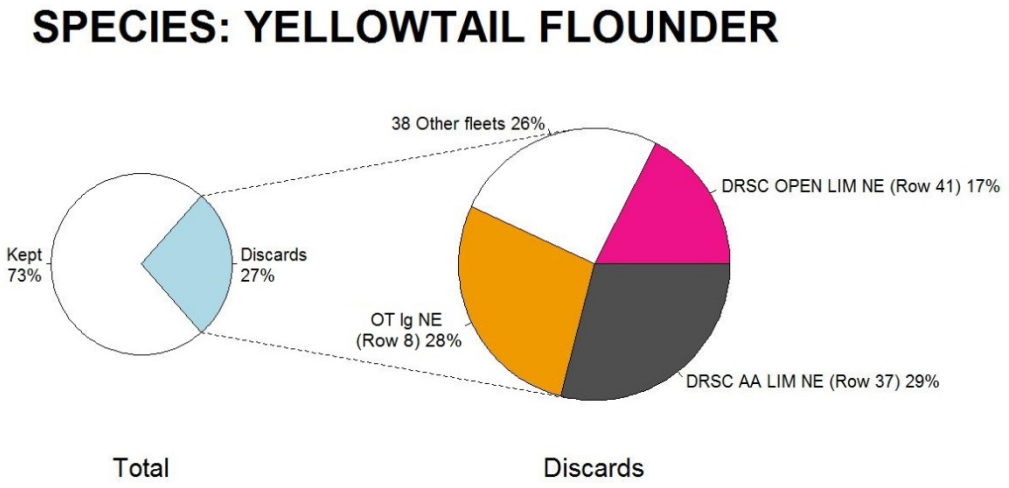
Top: windowpane flounder (*Scophthalmus aquosus*); bottom: winter flounder (*Pseudopleuronectes americanus*).





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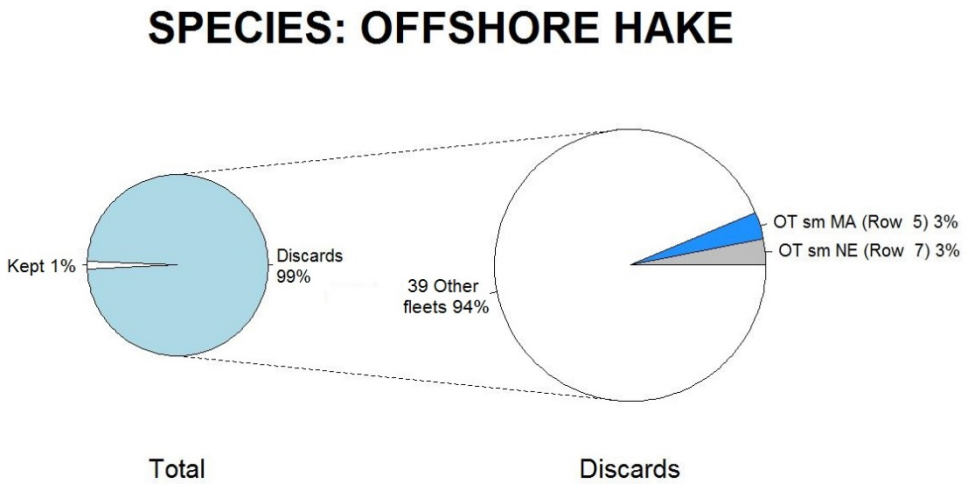
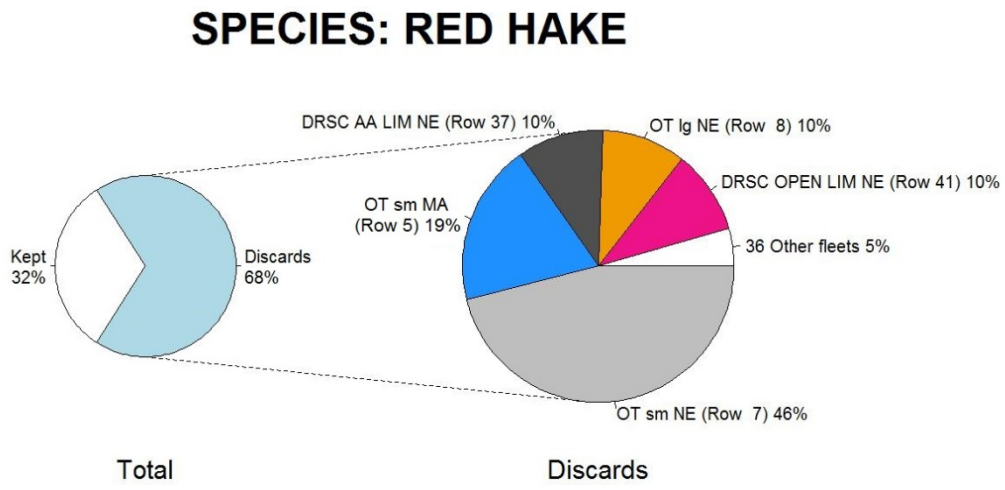
Top: witch flounder (*Glyptocephalus cynoglossus*); bottom: yellowtail flounder (*Limanda ferruginea*).





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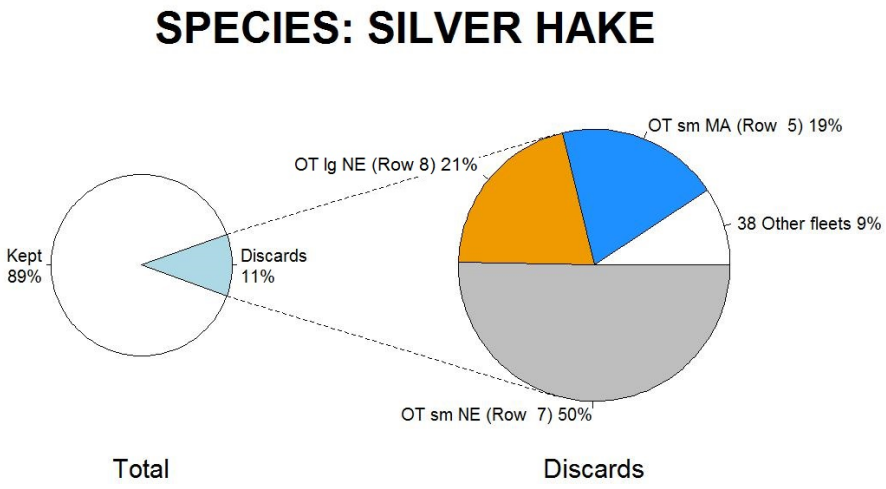
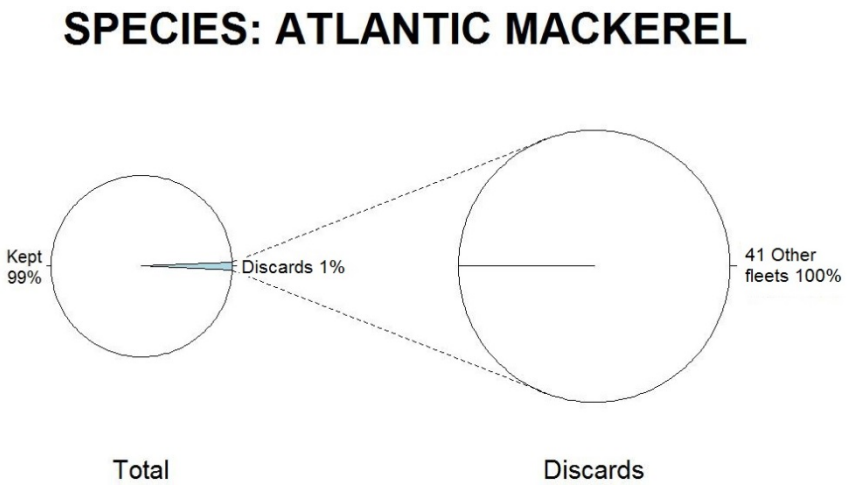
Top: offshore hake (*Merluccius albidus*); bottom: red hake (*Urophycis chuss*).





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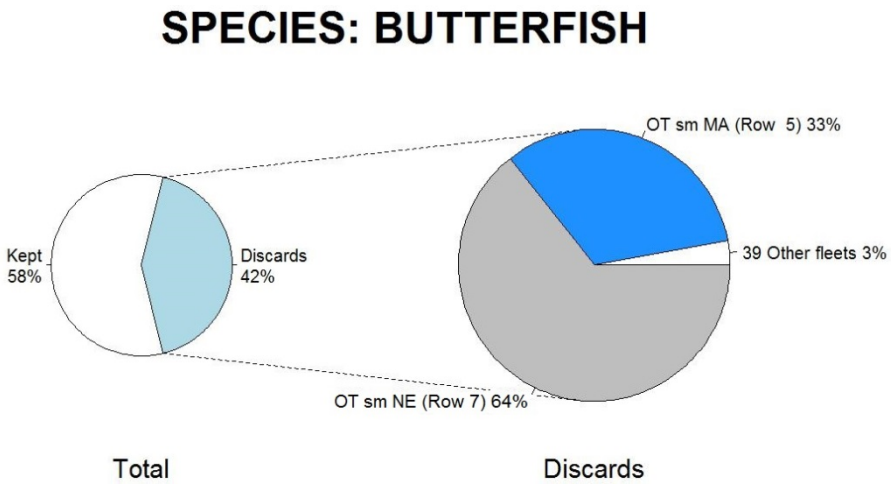
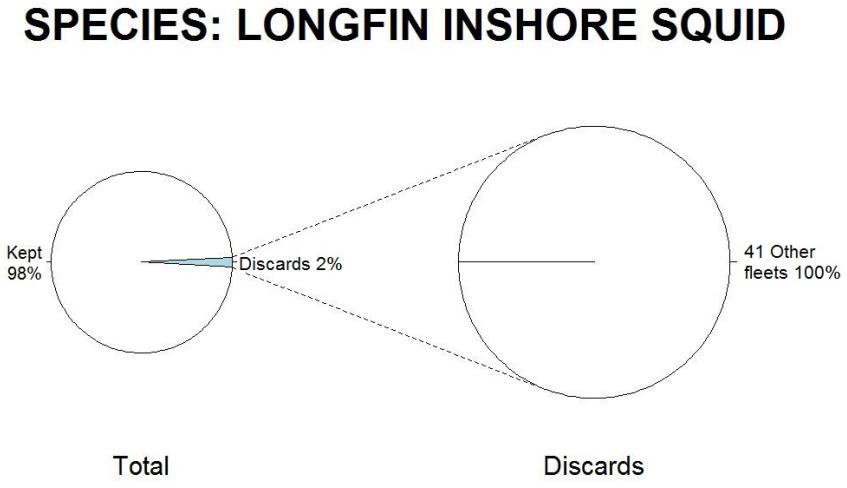
Top: silver hake (*Merluccius bilinearis*); bottom: Atlantic mackerel (*Scomber scombrus*).





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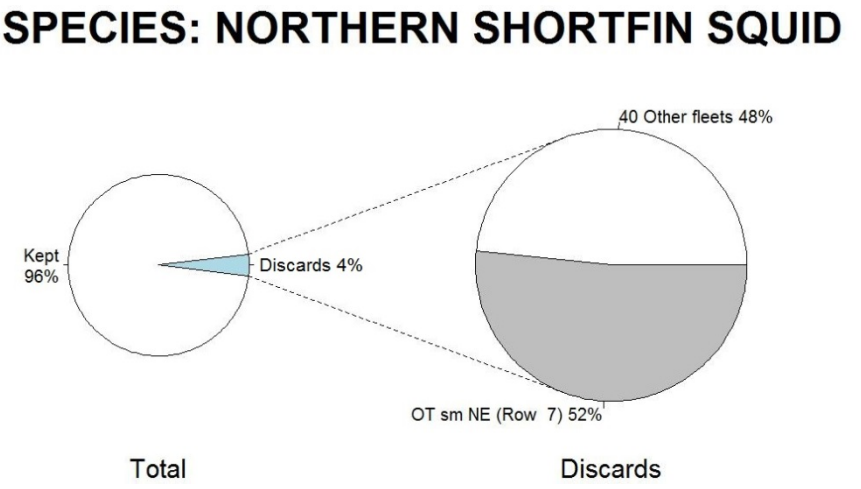
Top: butterfish (*Peprilus triacanthus*); bottom: longfin inshore squid (*Doryteuthis [Amerigo] pealeii*).



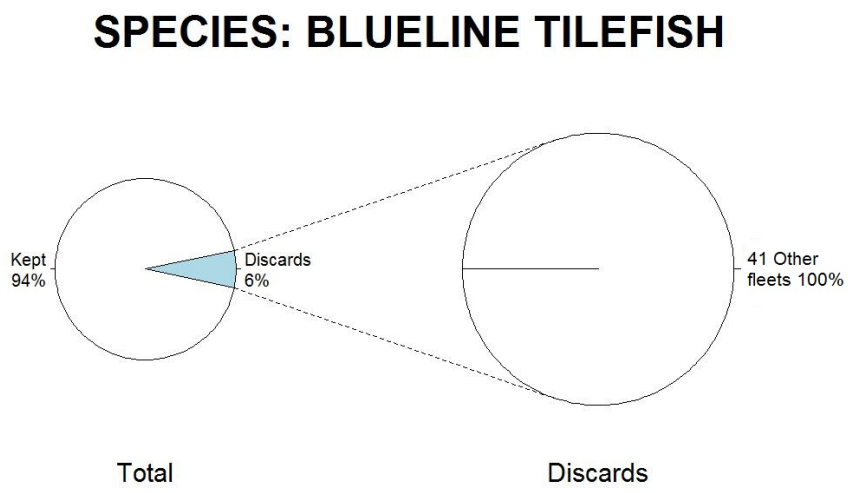
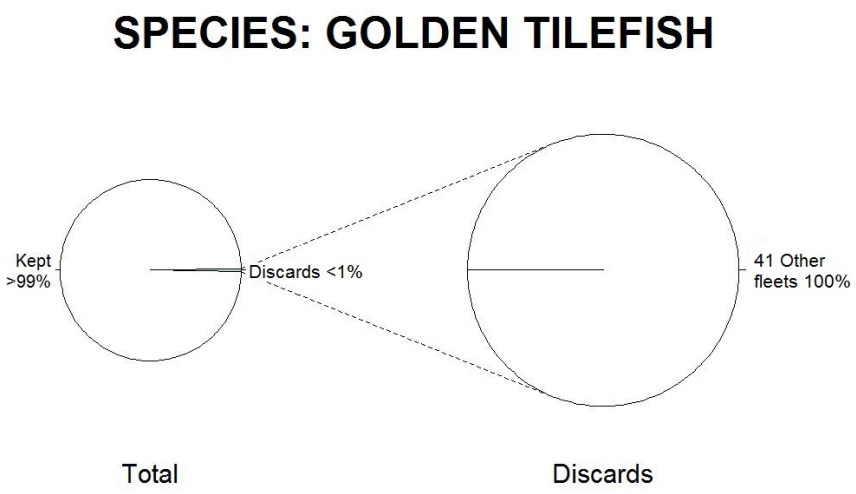


Figure 1B, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by fleet (Discards, right pie) for the 25 individual species that compose the 14 species groups, based on July 2017 through June 2018 data. Because percentages have been rounded, they may not always sum to 100%. See Appendix Table 4 for fleet abbreviations.
Top: northern shortfin squid (*Illex illecebrosus*); bottom: blueline tilefish (*Caulolatilus microps*).



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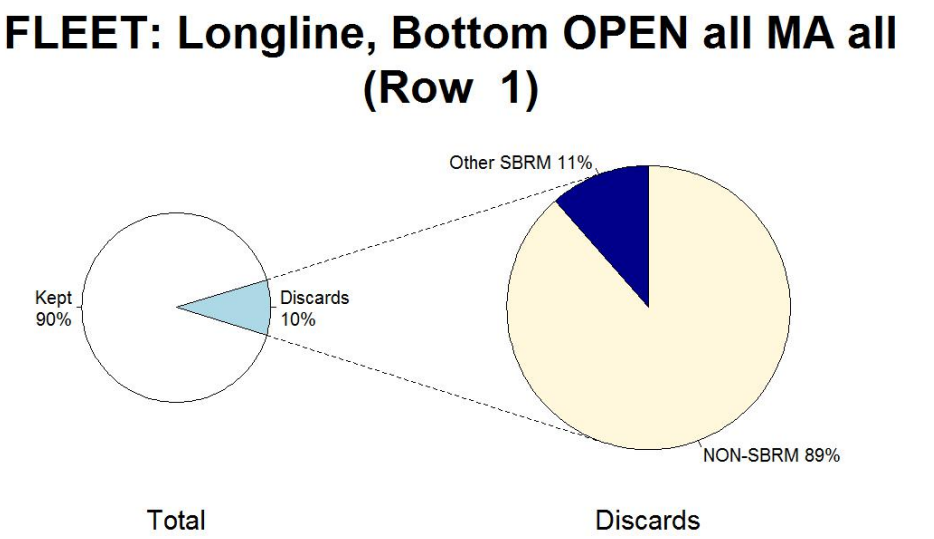
Top: golden tilefish (*Lopholatilus chamaeleonticeps*)



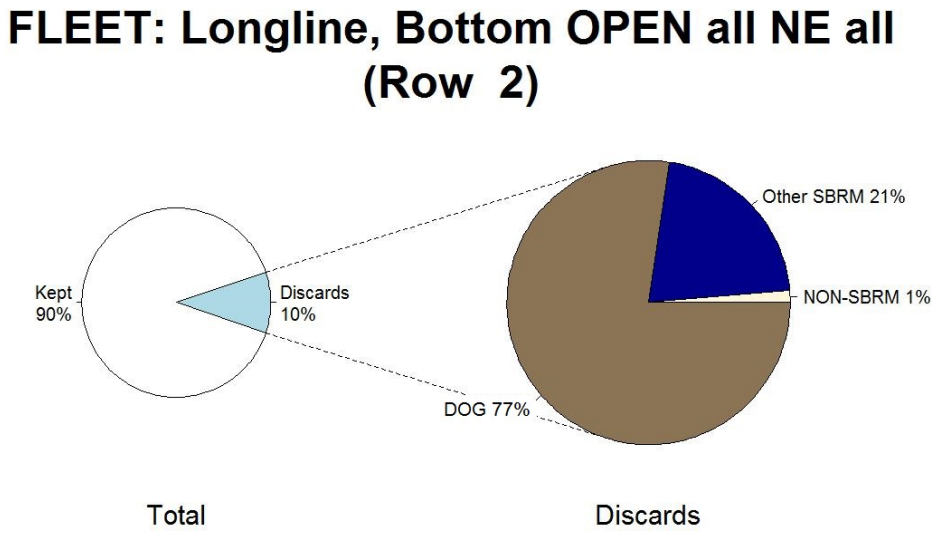
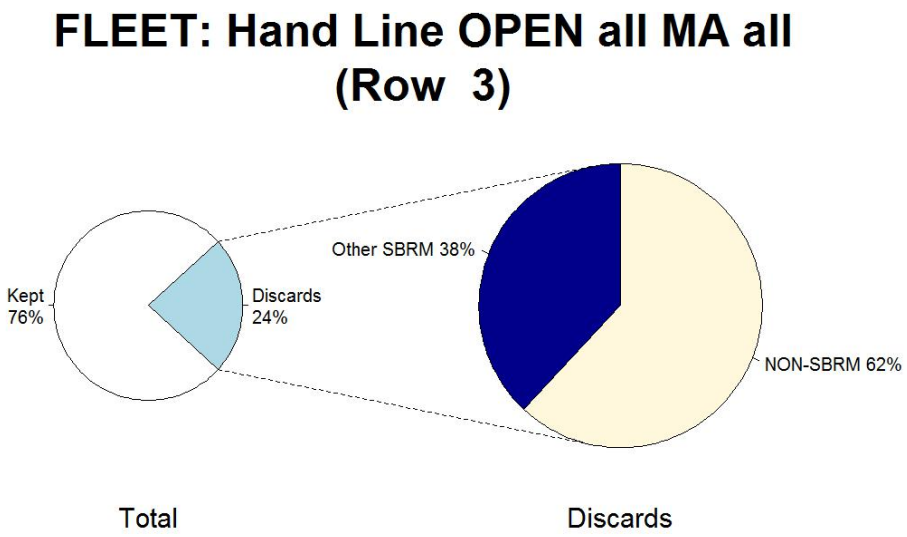


Figure 2. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2017 through June 2018 data. Because percentages have been rounded, they may not always 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."



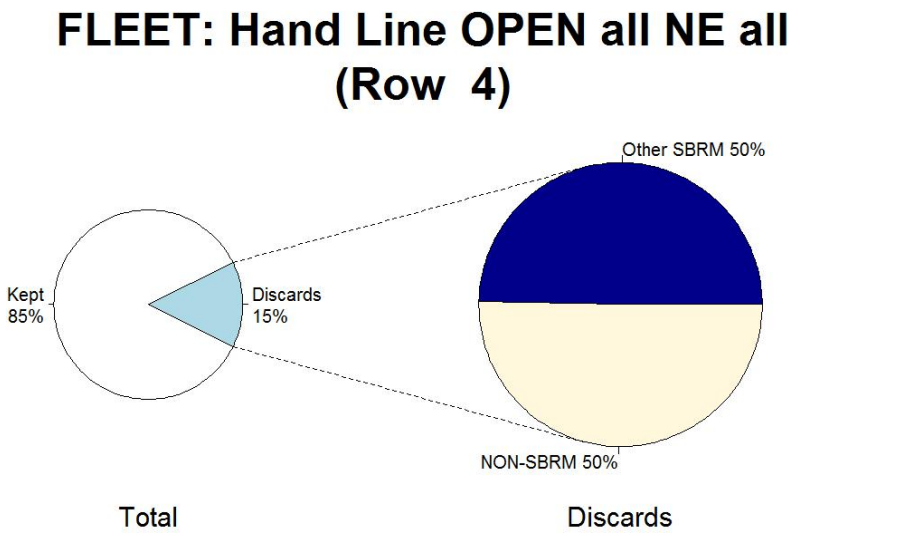
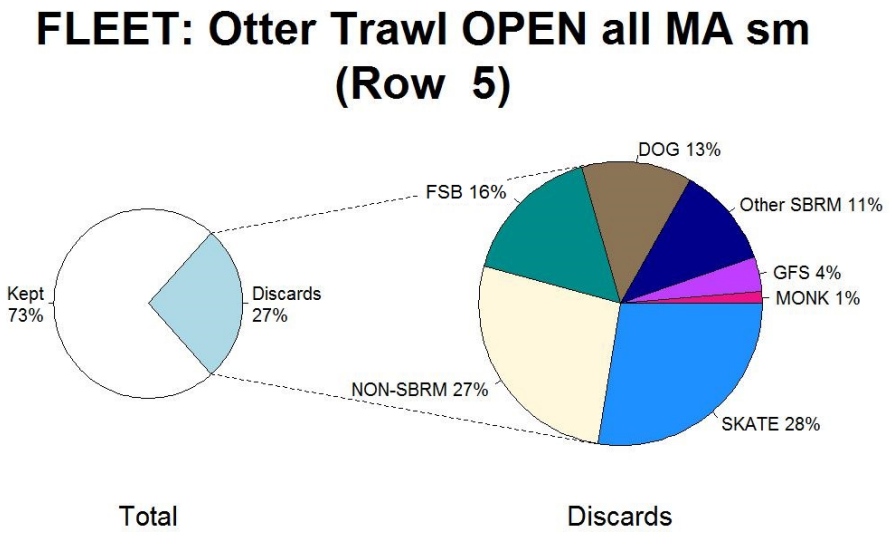
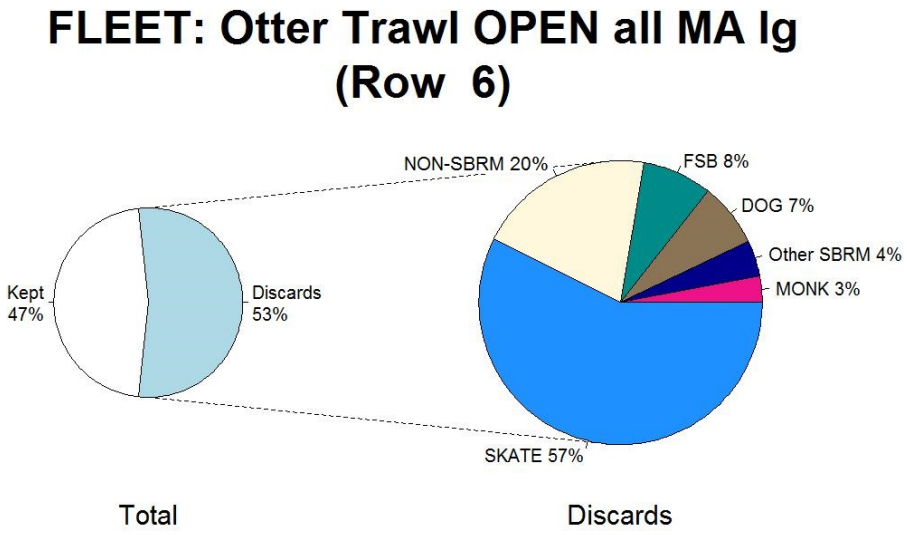


Figure 2, continued. Percentage of Vessel Trip Report landings (kept) and estimated discards (Total, left pie) and the percentage of estimated discards by species groups (Discards, right pie) for 34 nonpilot fleets, based on July 2017 through June 2018 data. Because percentages have been rounded, they 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."





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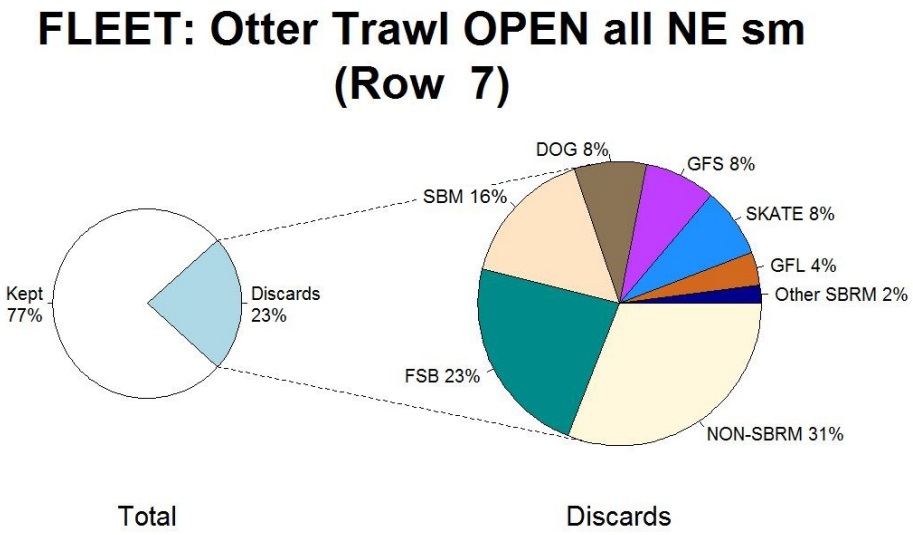

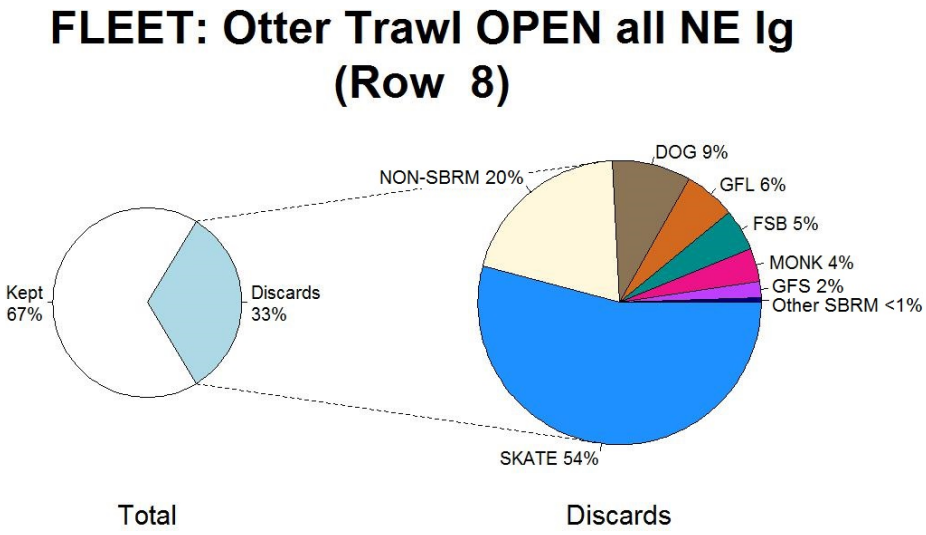

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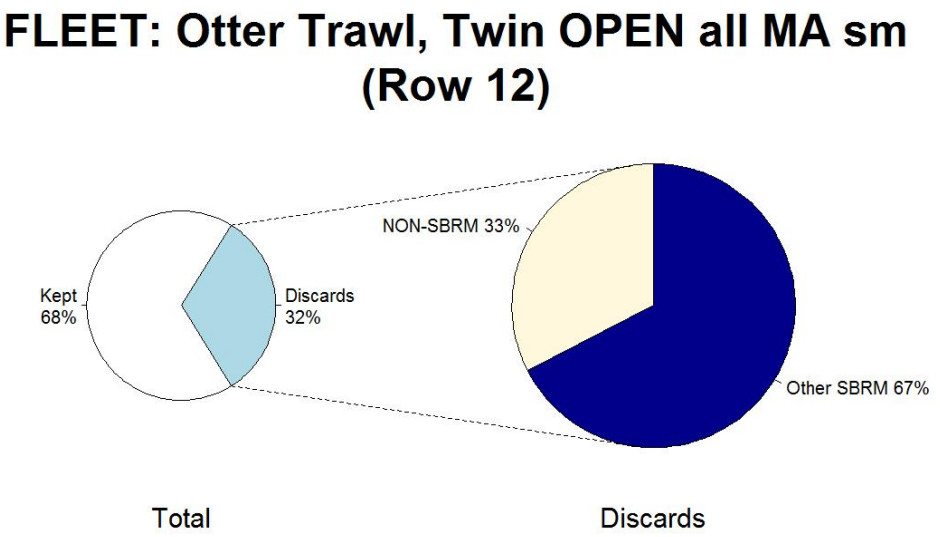

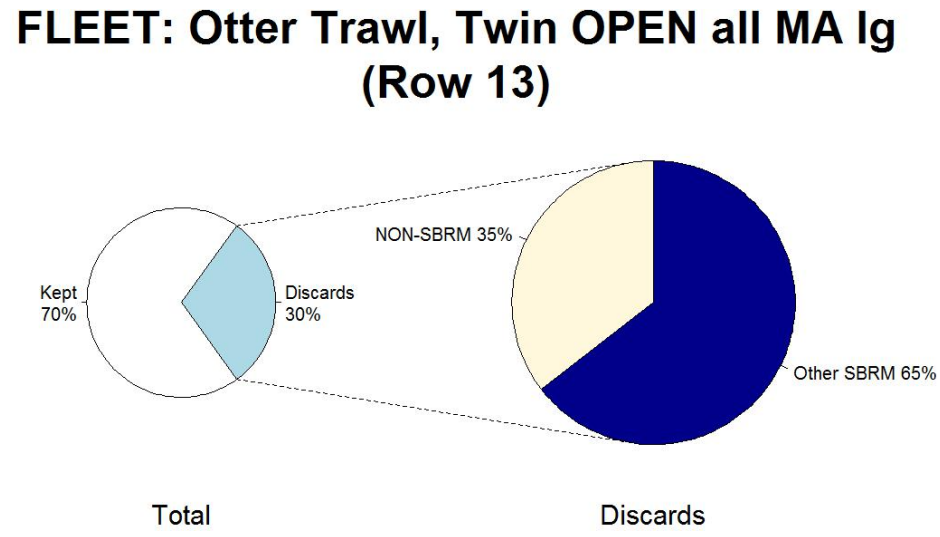

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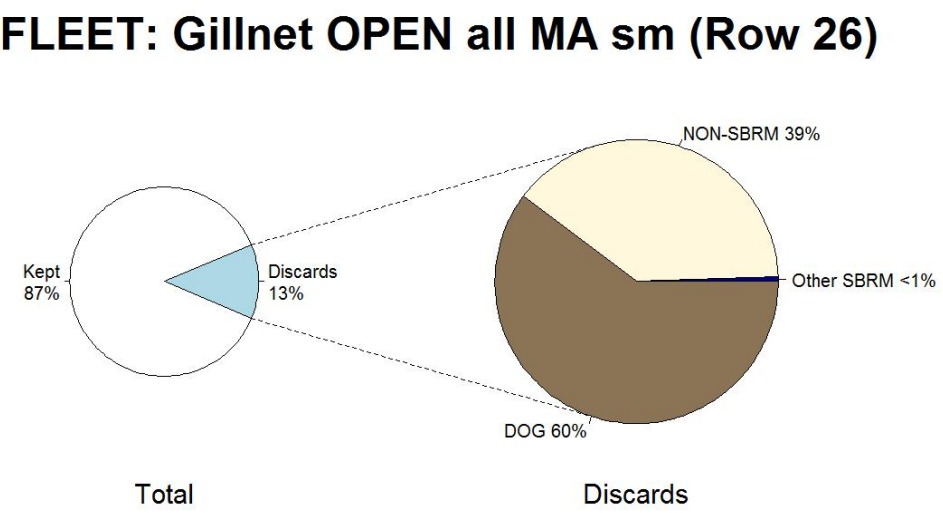

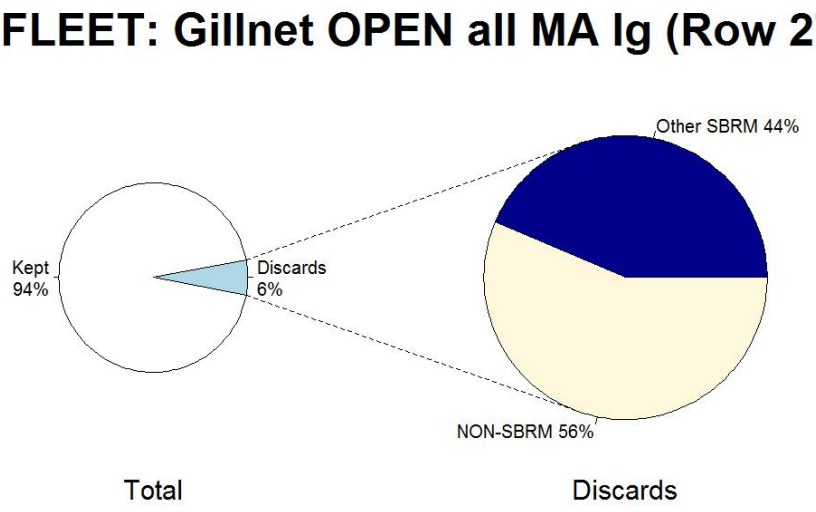

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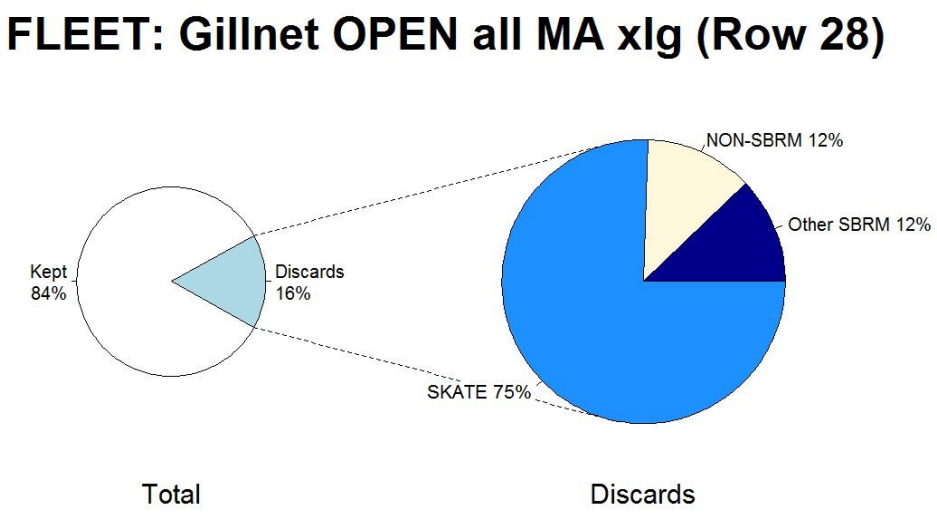

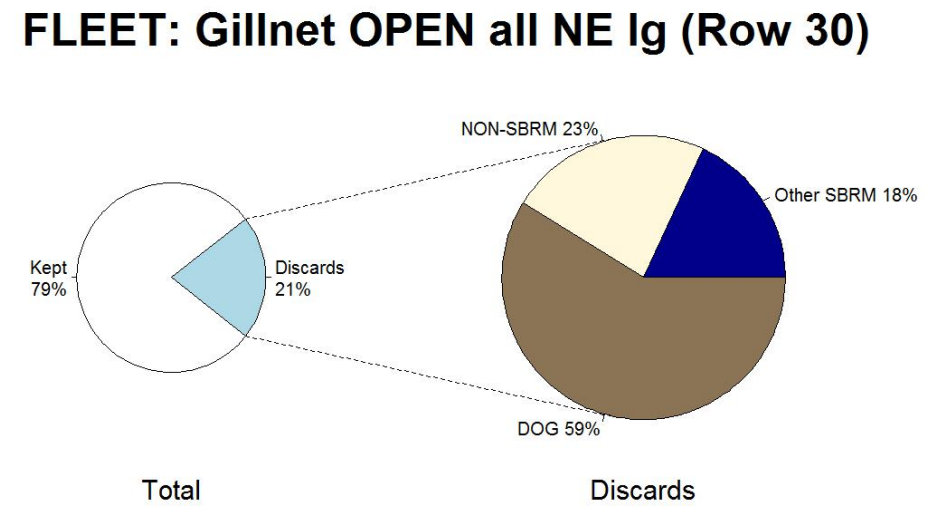

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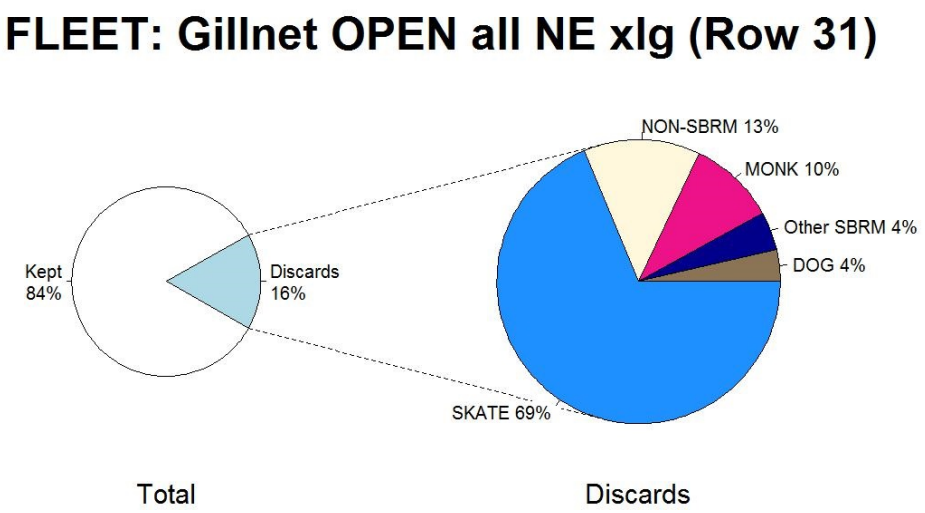

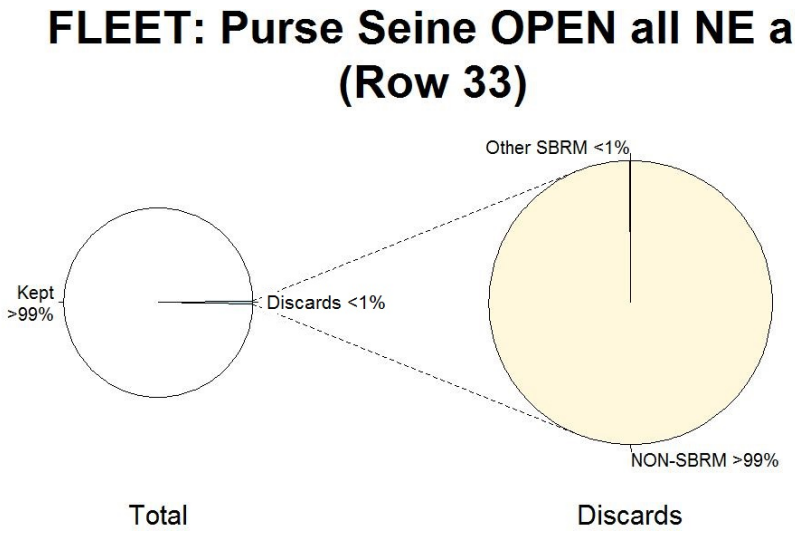

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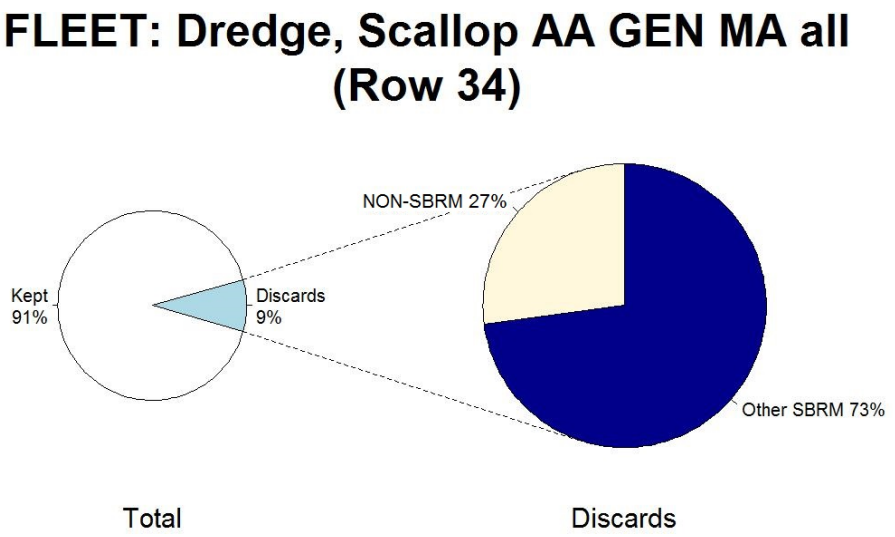

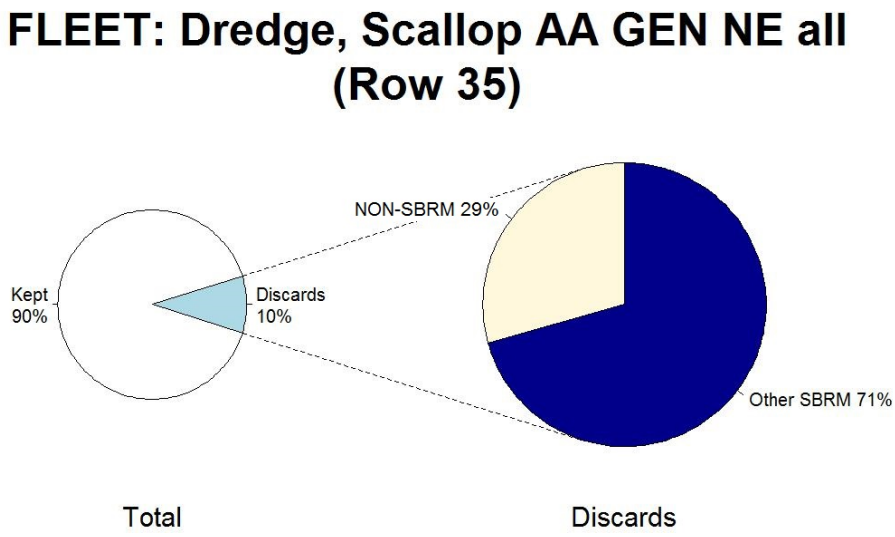

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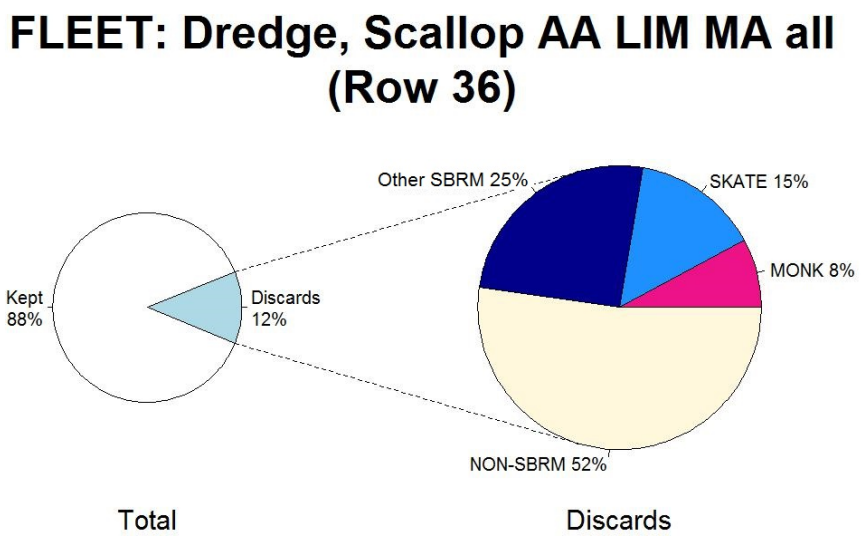

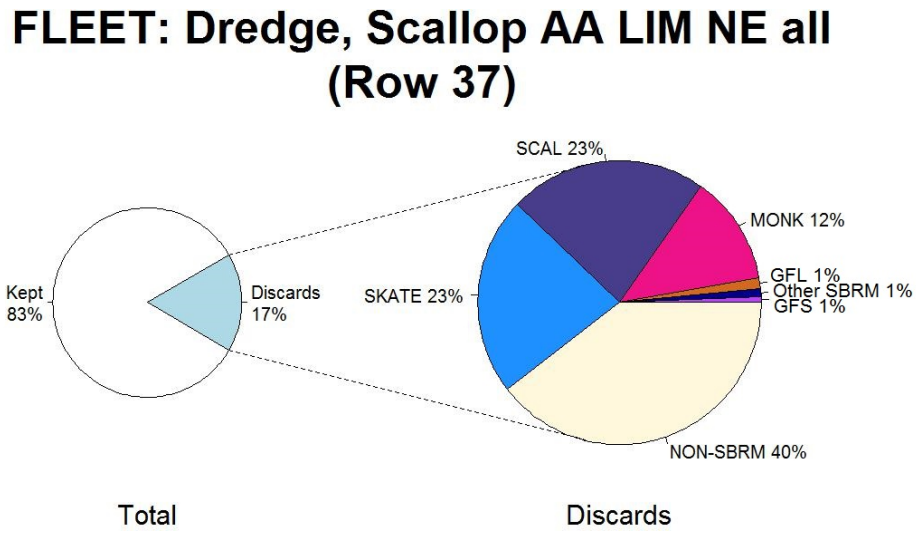

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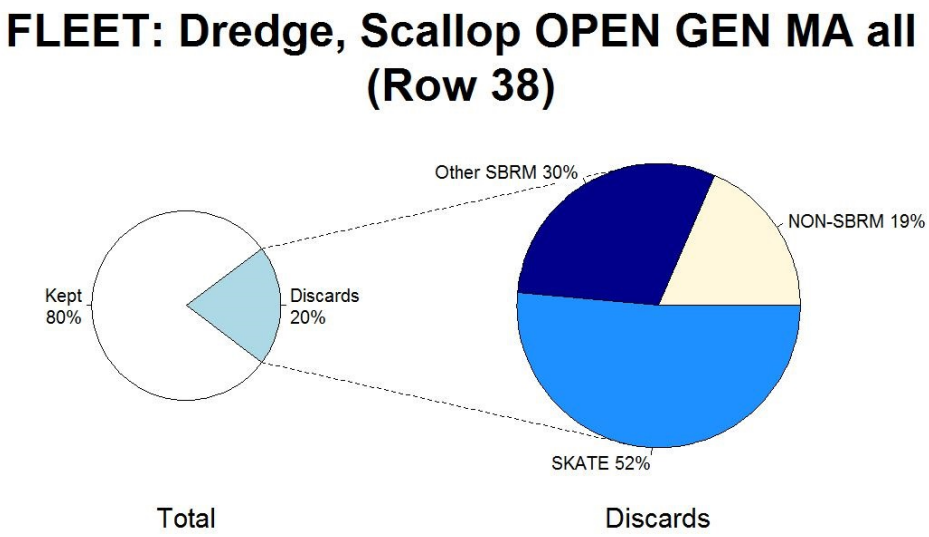

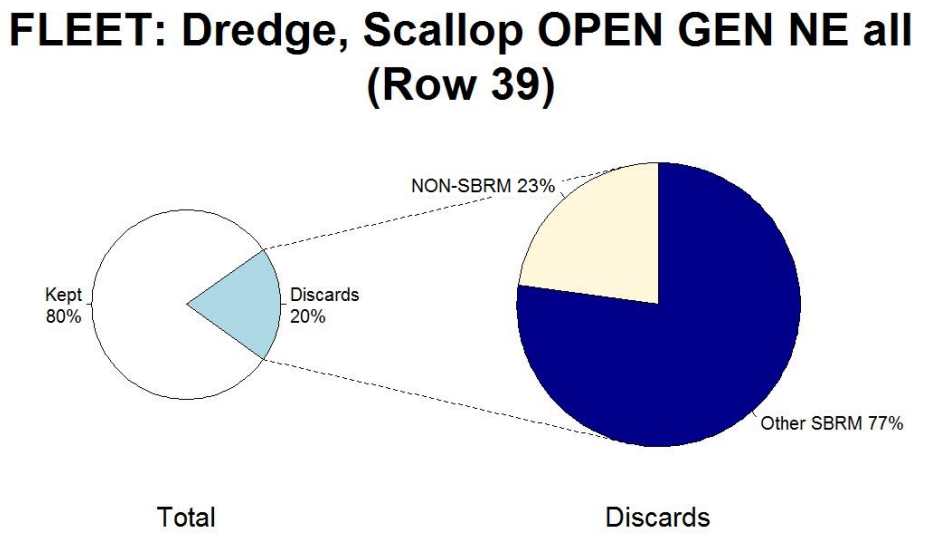

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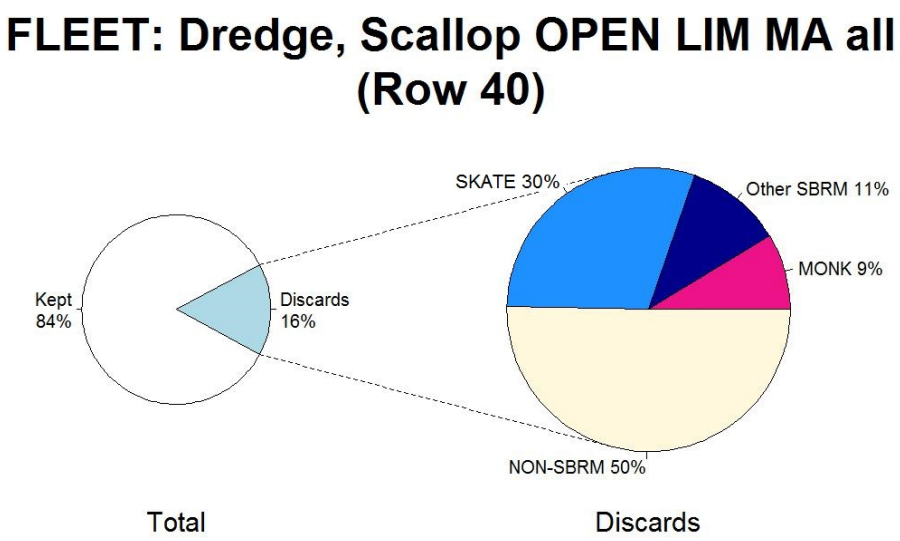

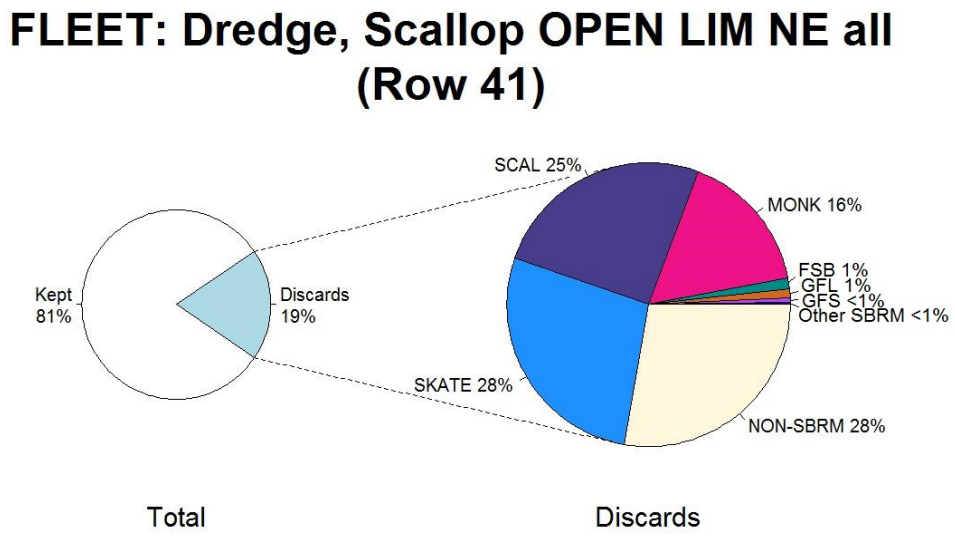

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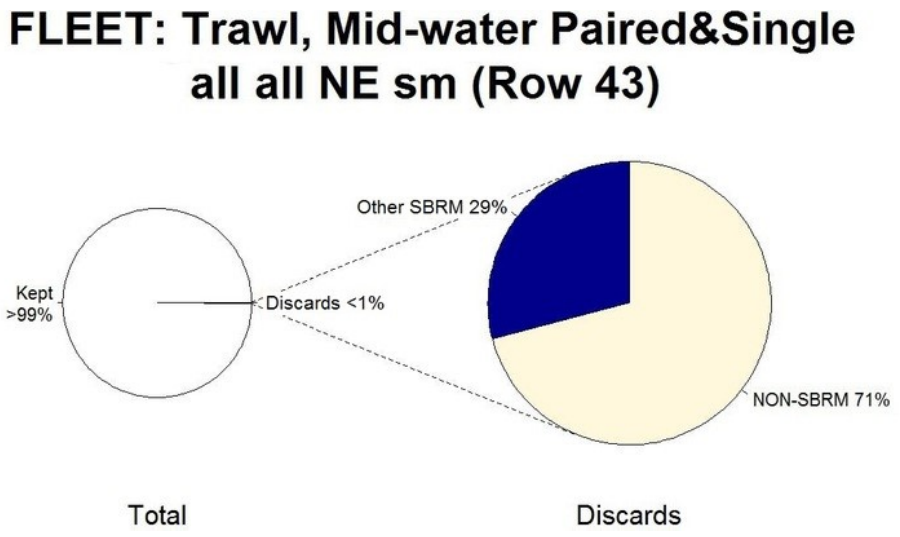

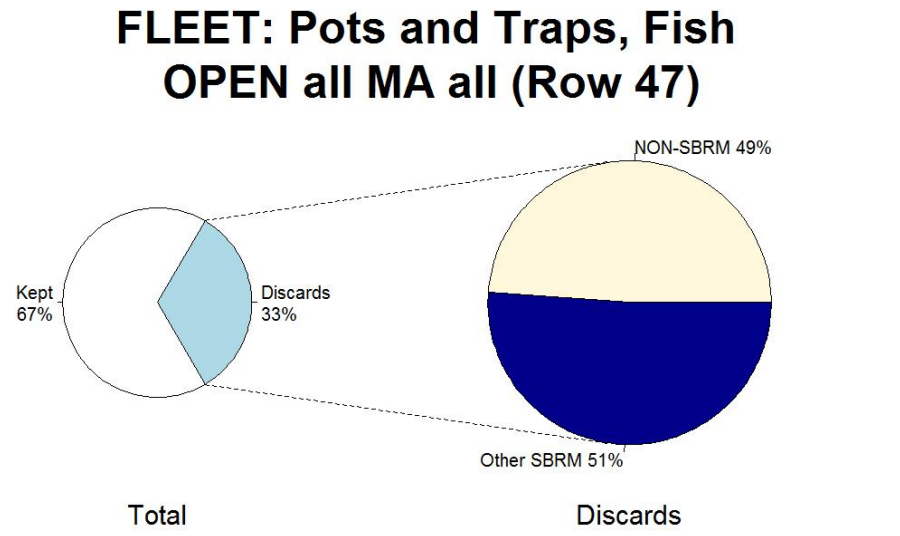

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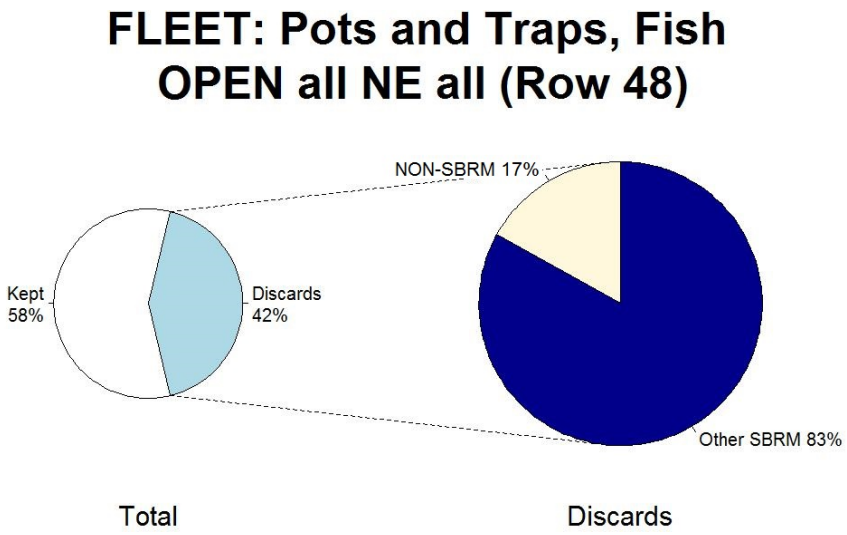

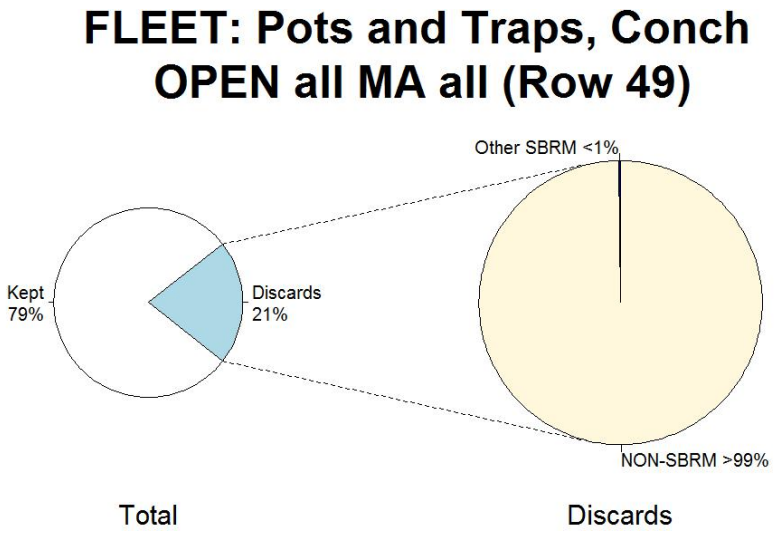

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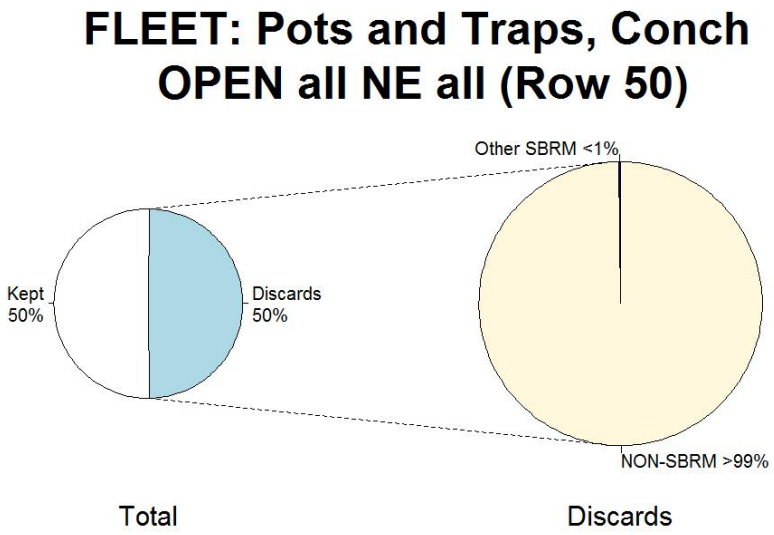

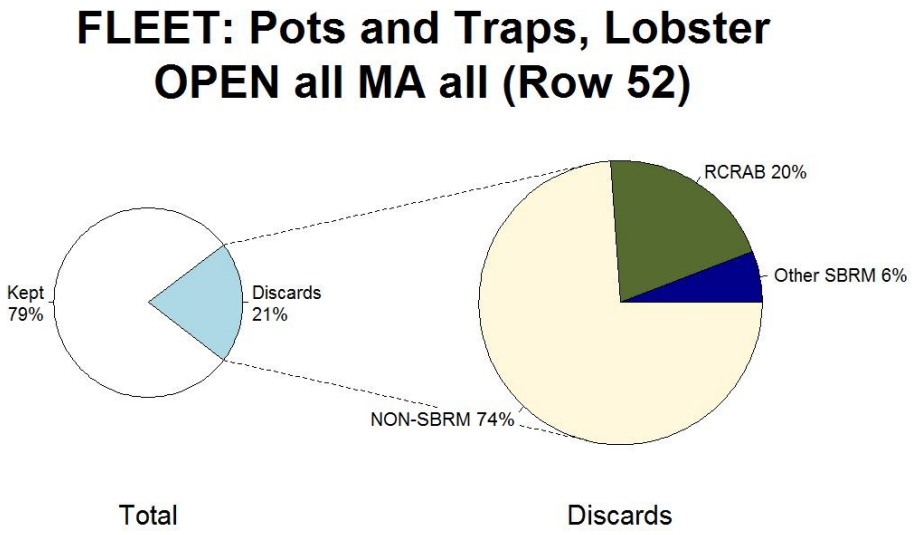

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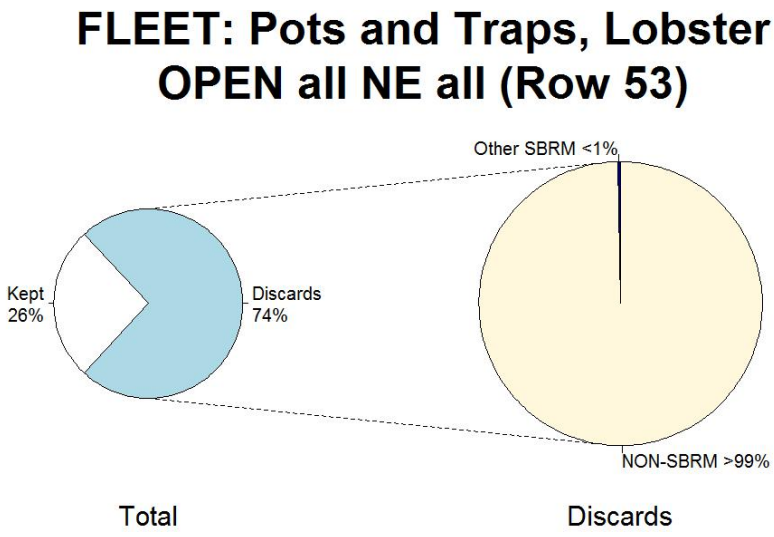

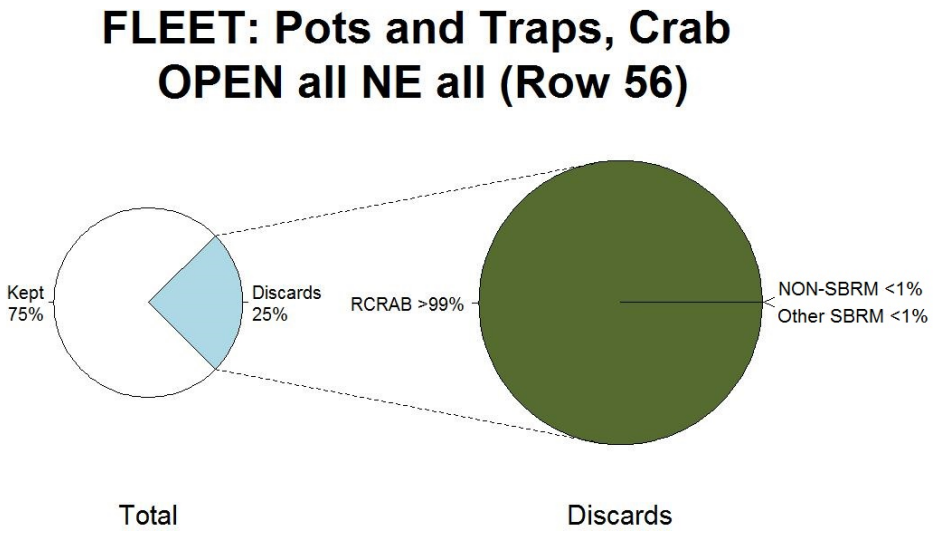

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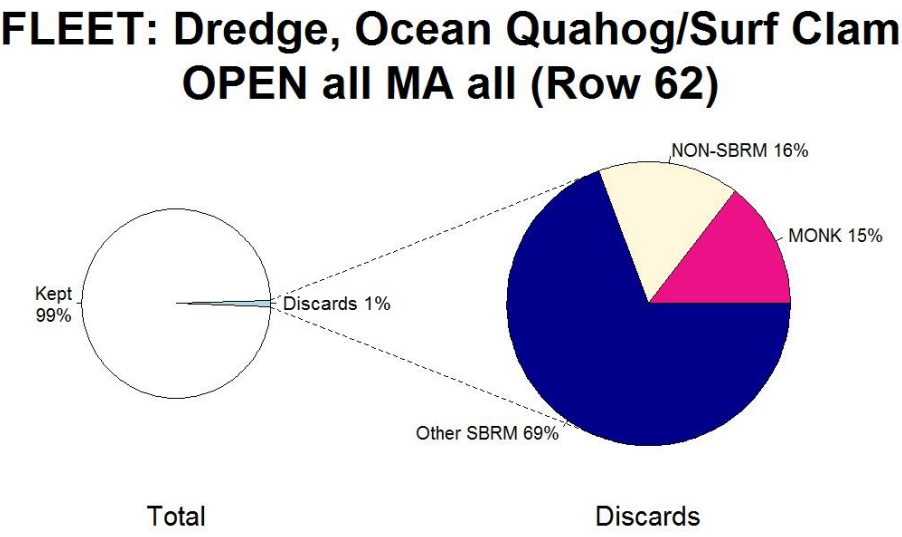

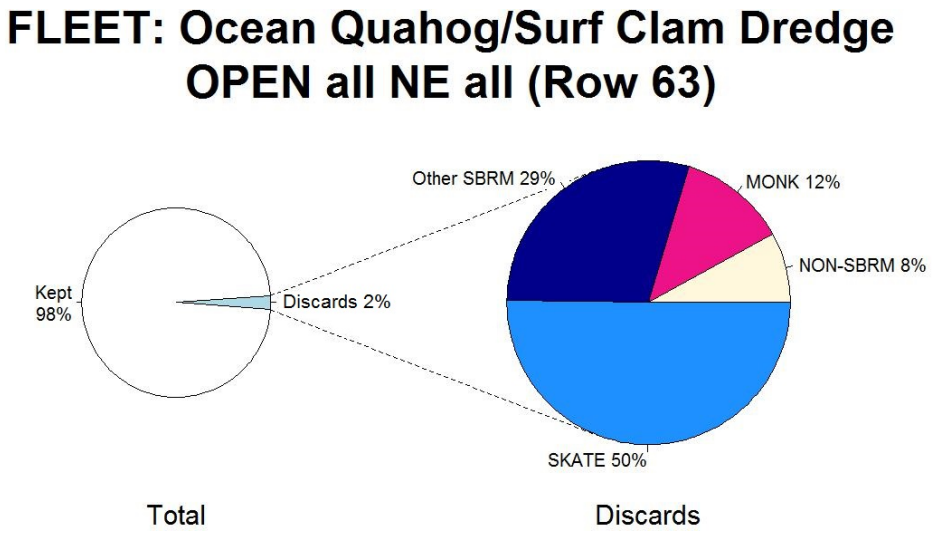

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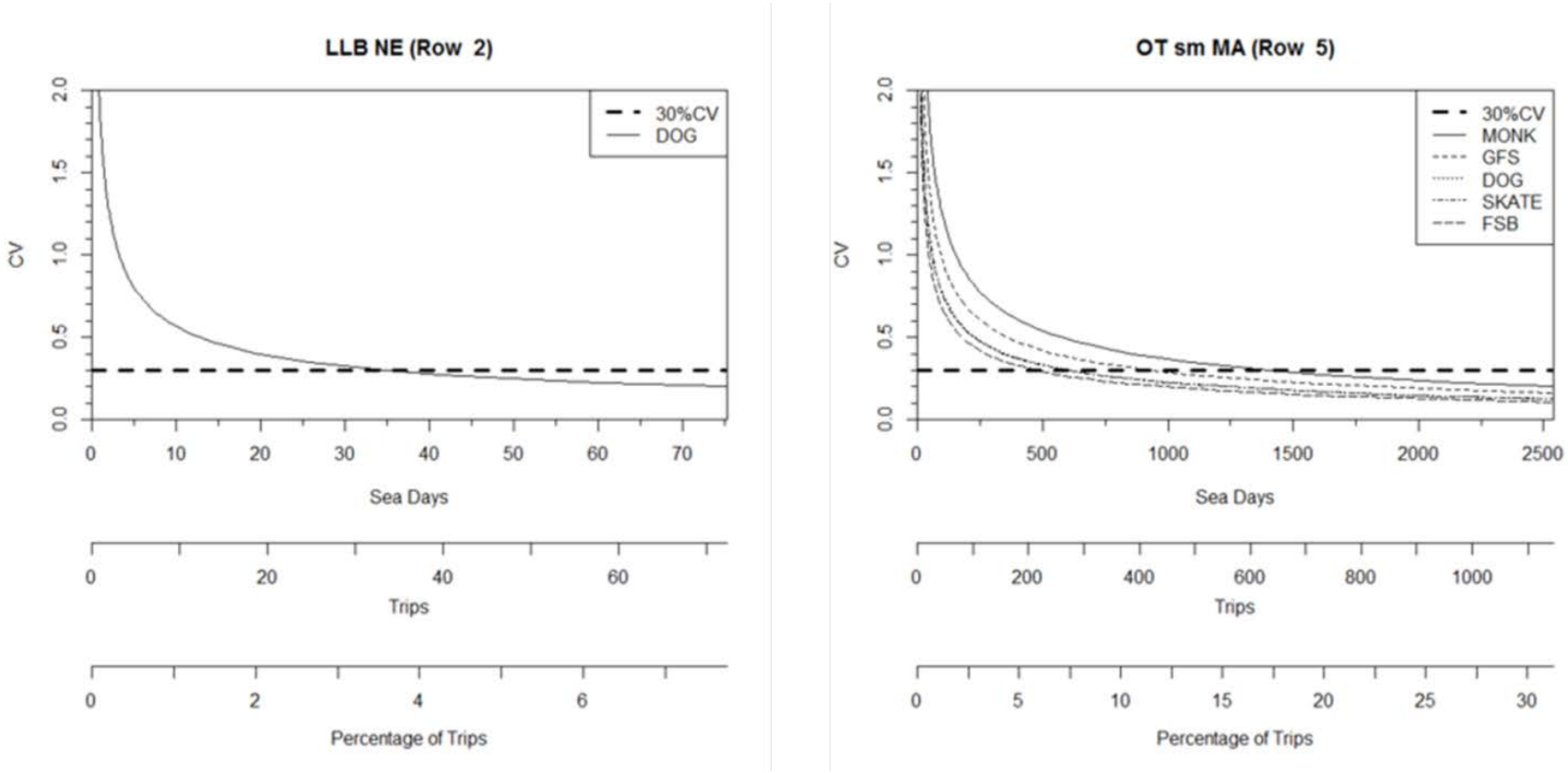
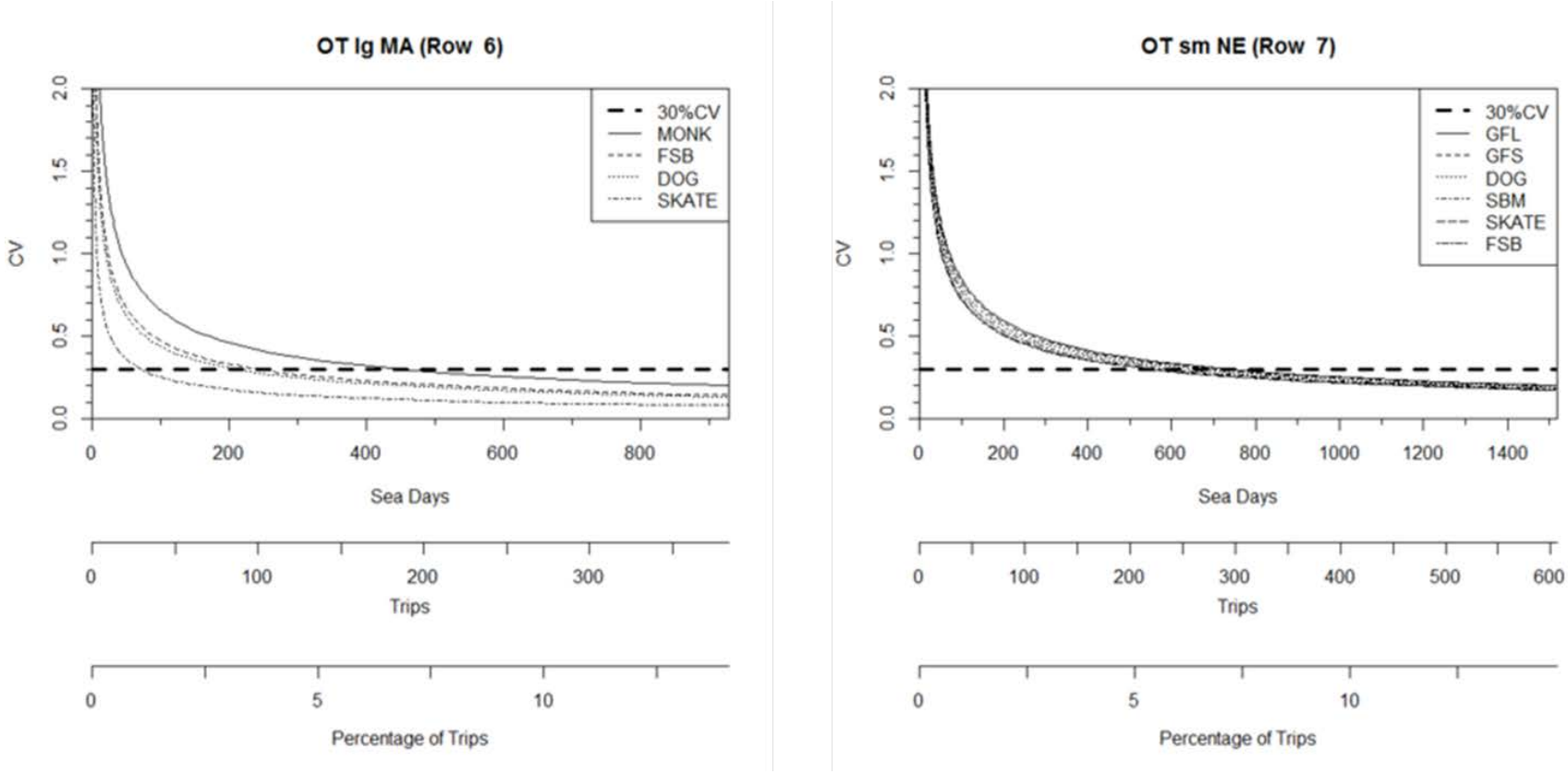


Figure 3. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species groups that 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.



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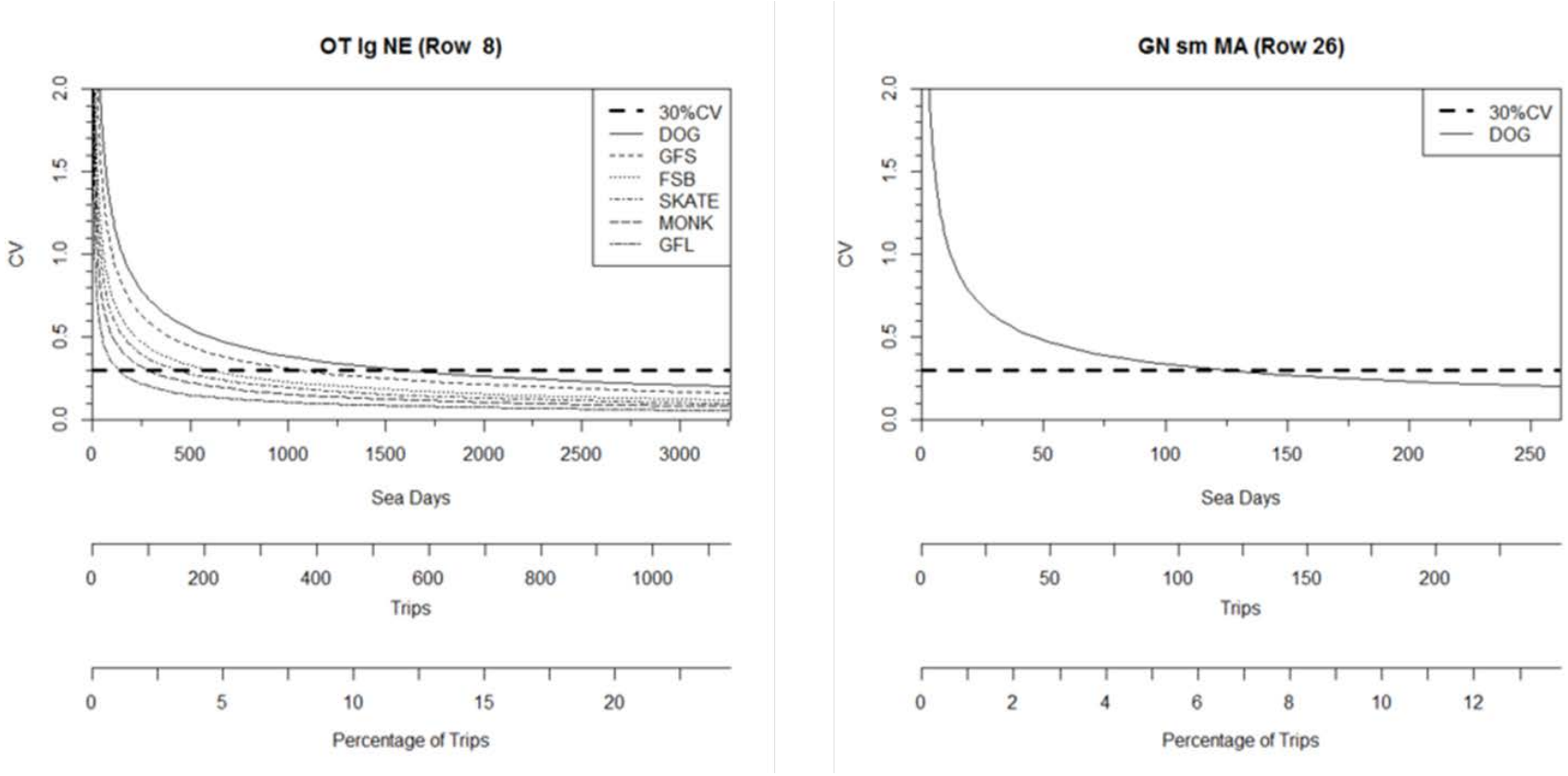

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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.

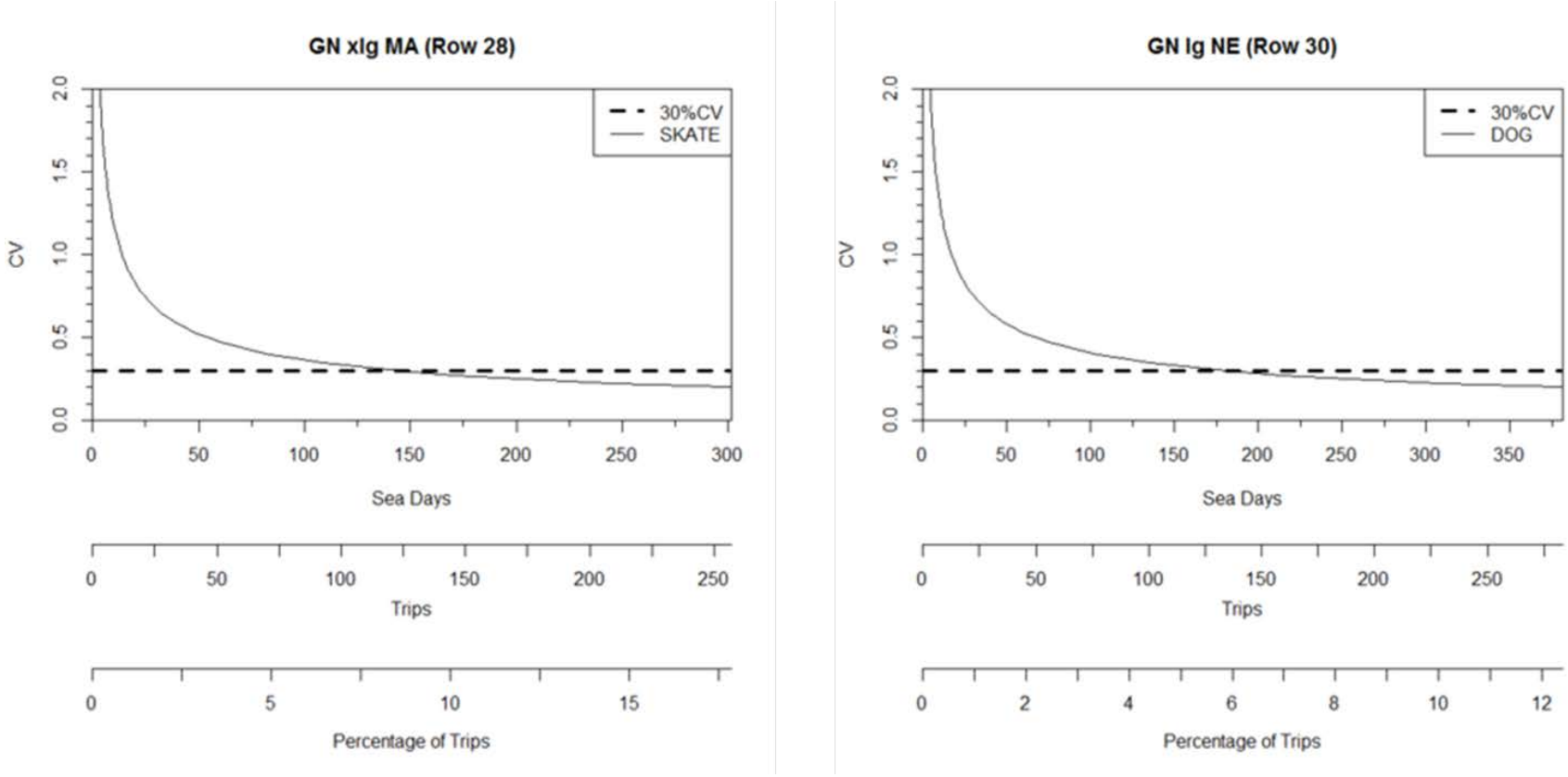

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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.

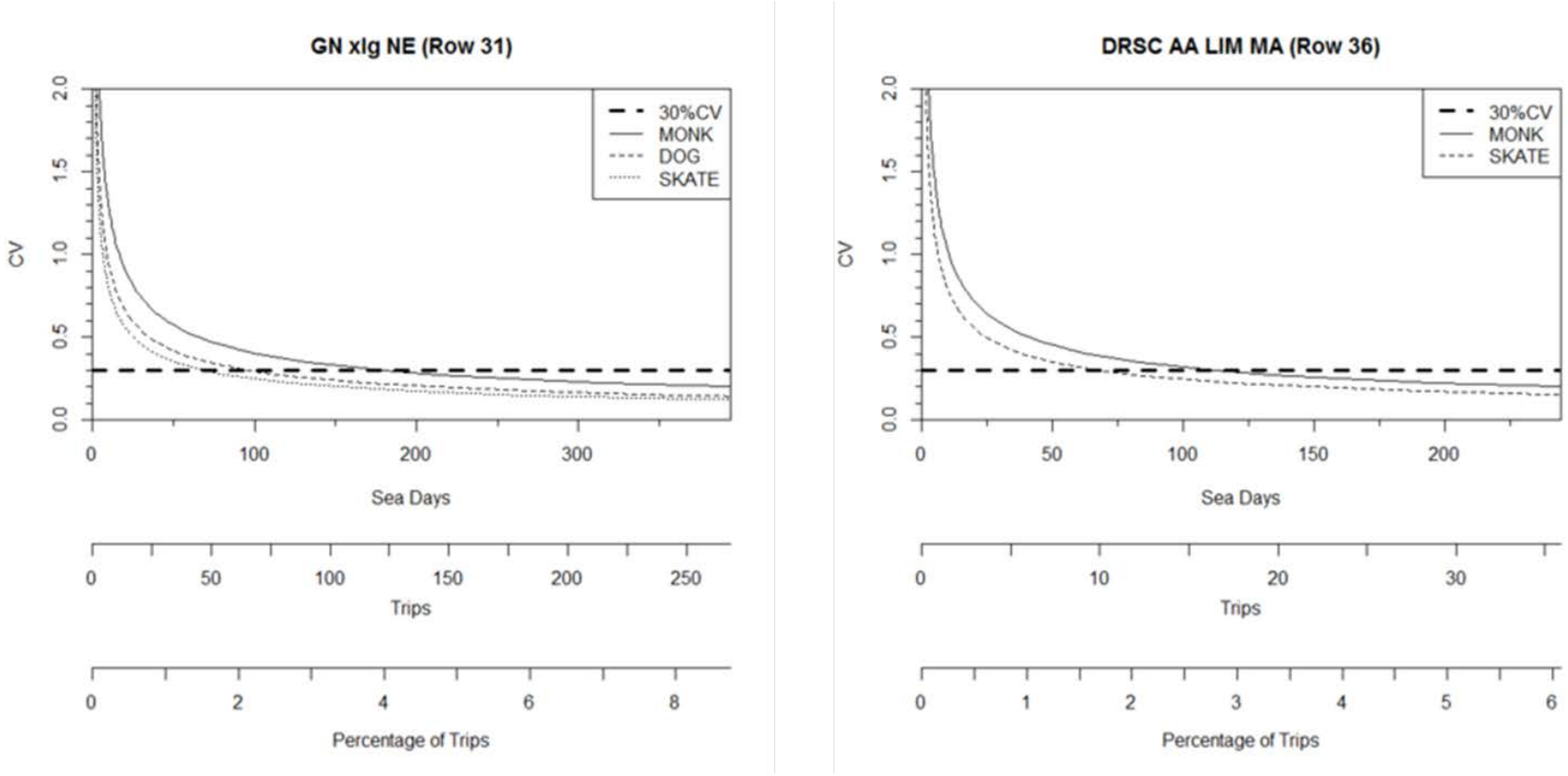

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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.

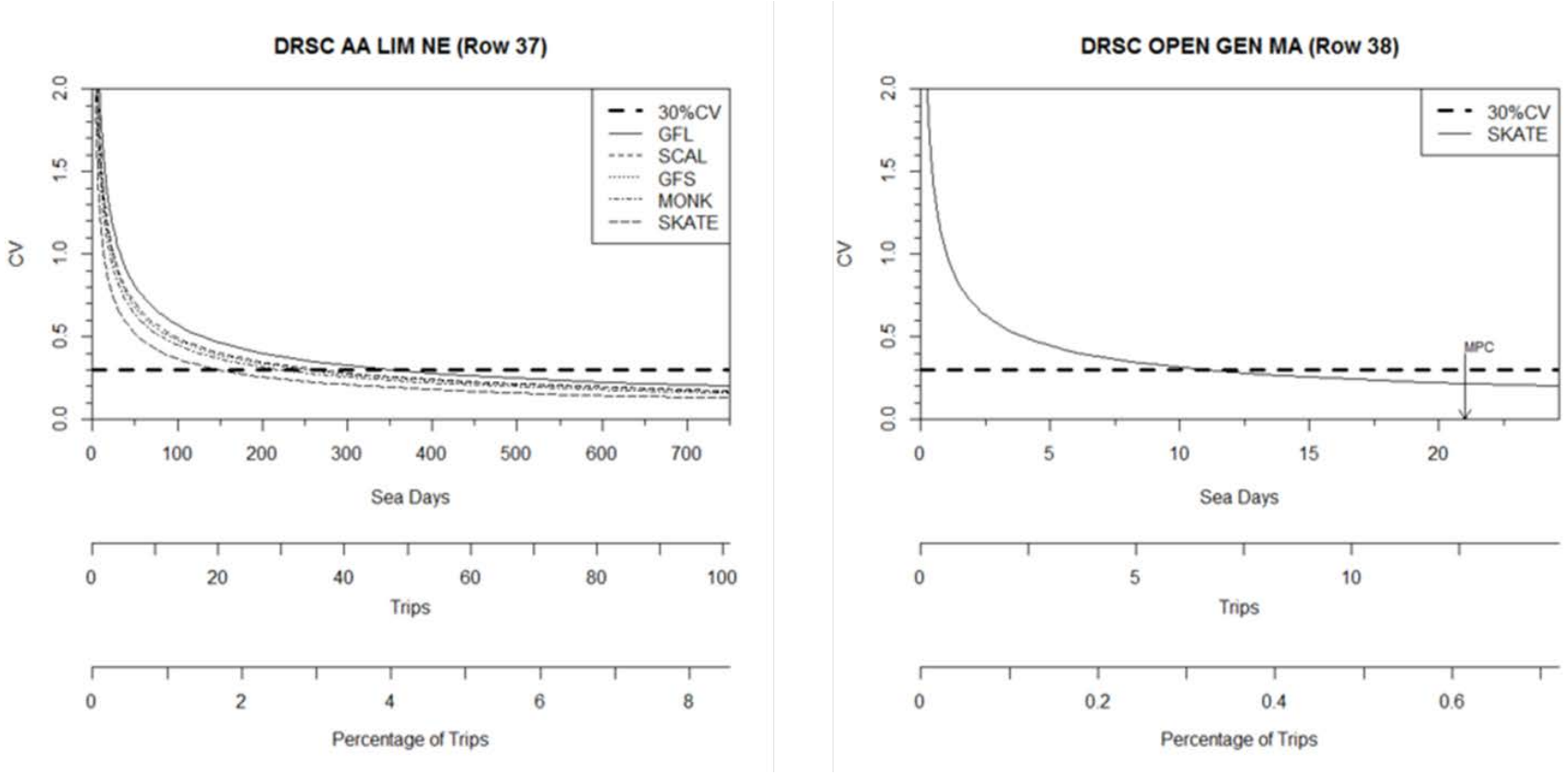

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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.

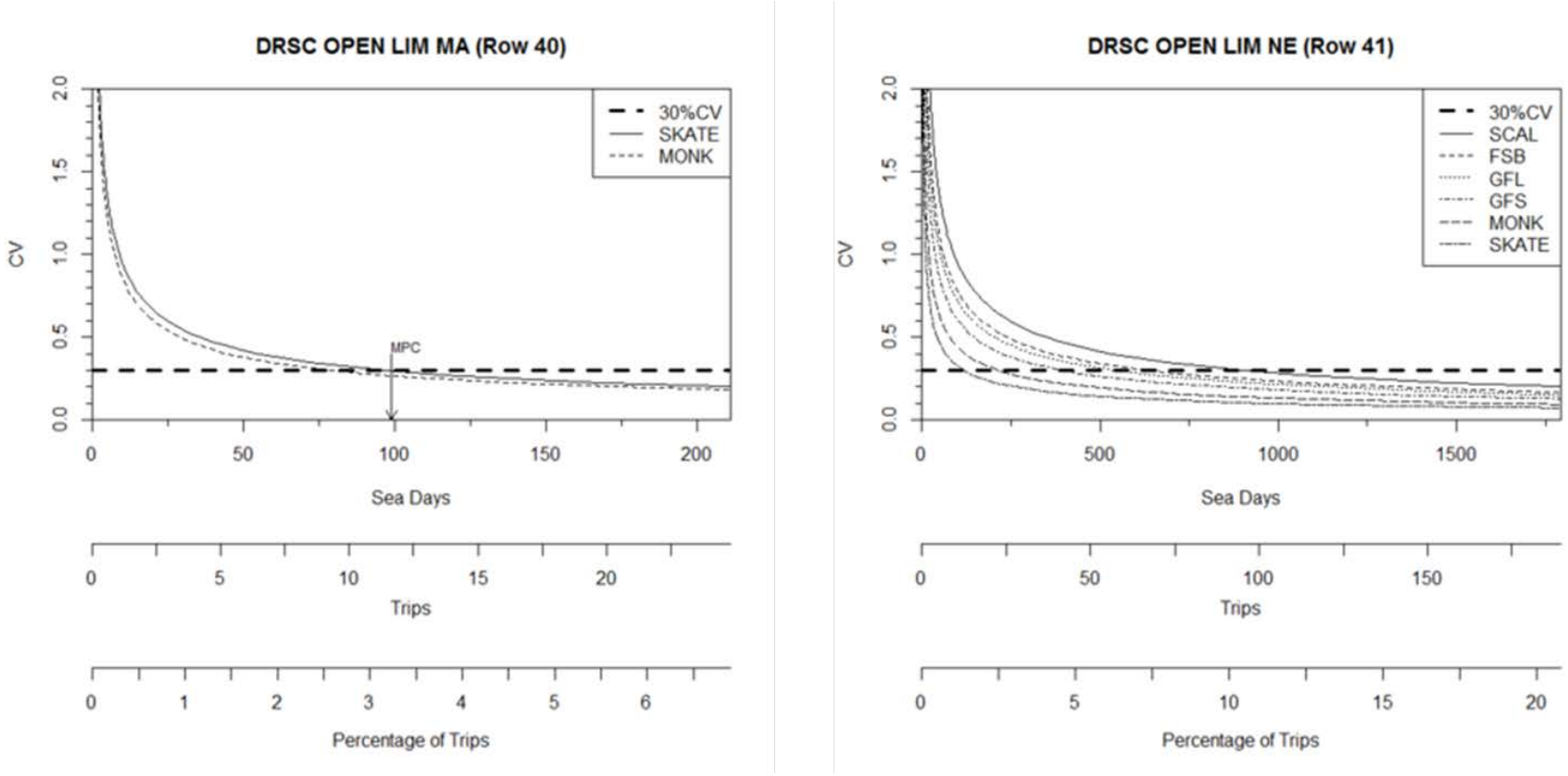

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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.

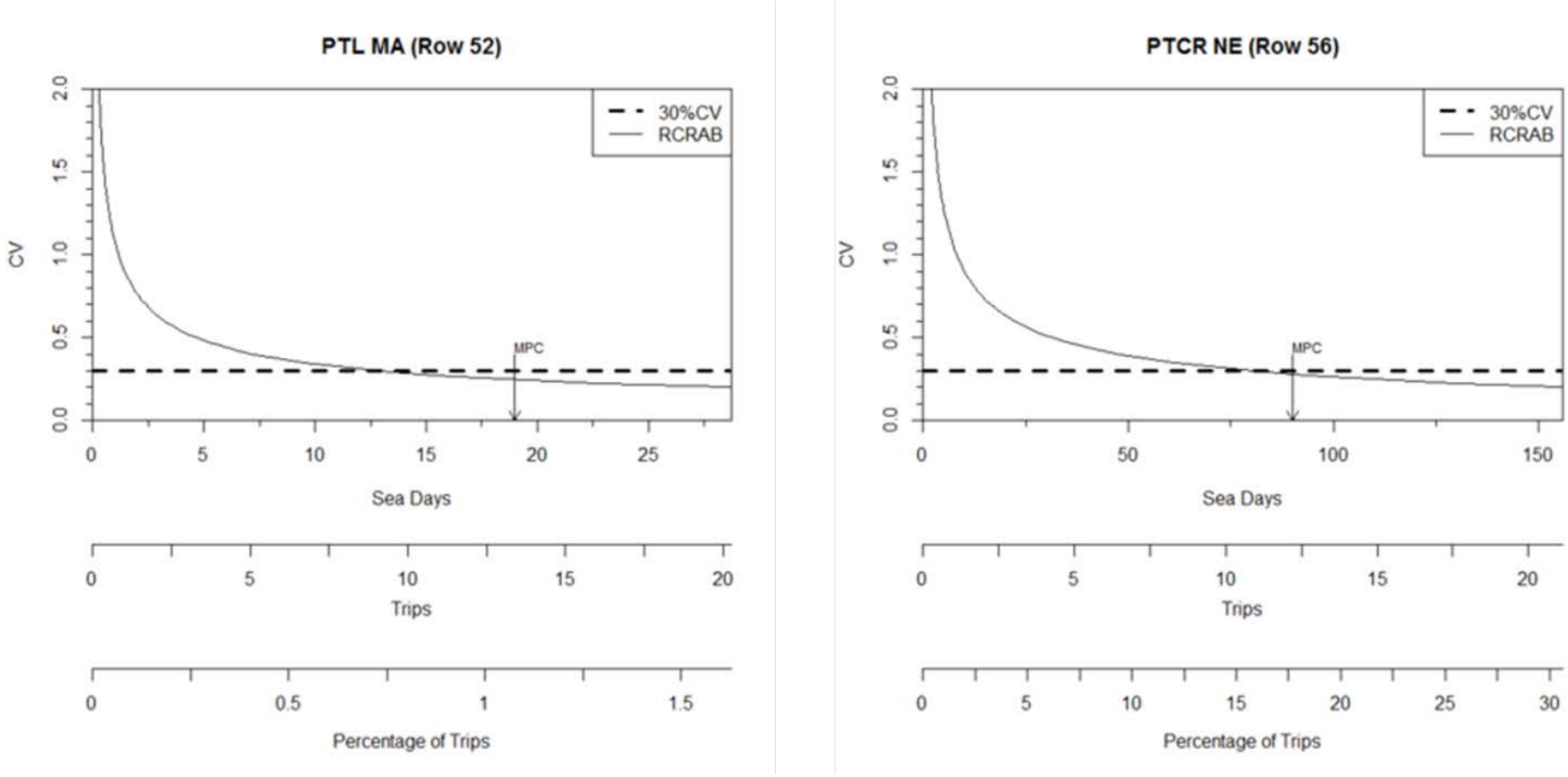

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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.

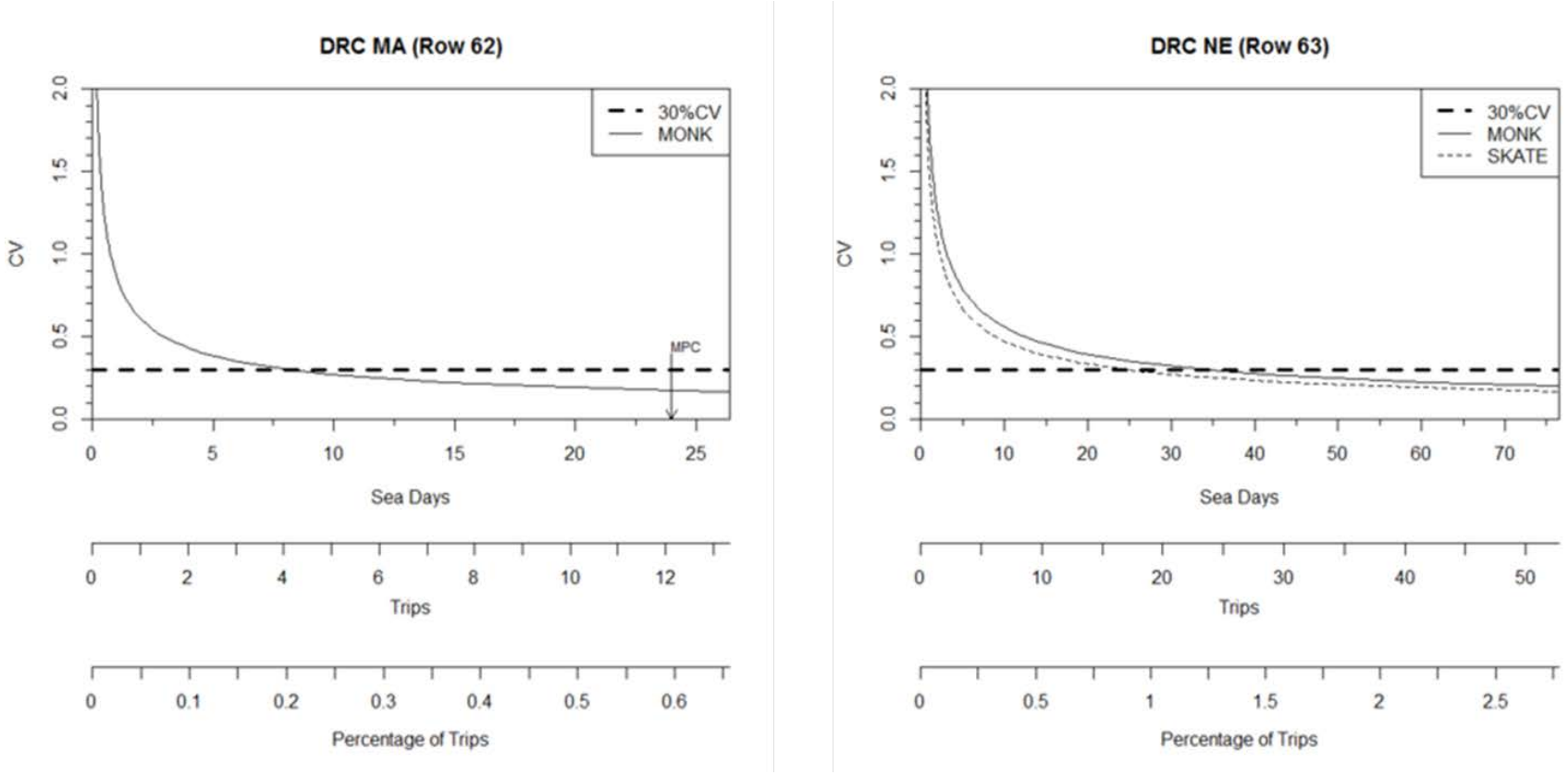

Figure 3, continued. Results from the 2019 sample size analysis conducted for selected fleets, based on July 2017 through June 2018 data. The curves represent the relationship between the coefficient of variance (CV) and the sample size (sea days, trips, and percent of trips) for each of the species 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 2019 analyses and reported in the tables of this report.

63 fleets uniquely identified in Tables 2 & 3

- 21 fleets with no observer coverage
  - discard estimation not conducted
  - pilot fleet designation for sample size analysis
    - 11 confidential fleets (Rows 15,21,23,24,42,45,51,54,58,59,61)
      aggregated into “Confidential fleets” in Tables 4 & 5
    - 10 nonconfidential fleets
- 7 fleets with sparse observer coverage
  - discard estimation conducted
  - pilot fleet designation for sample size analysis
    - 0 confidential fleets
      aggregated into “Confidential fleets” in Tables 4 & 5
    - 7 nonconfidential fleets
- 35 fleets with sufficient observer coverage
  - discard estimation conducted
  - variance of discard used for sample size analysis
  - nonpilot fleets
    - 1 confidential fleet (Row 9)
      aggregated into “Other Minor Fleets” in Tables 4 & 5
      (This fleet is the only confidential fleets with some observer data, therefore this fleet cannot be aggregated into “Confidential fleets” [confidential information would be exposed])
    - 34 nonconfidential fleets

Other minor fleets
- not uniquely identified
- aggregated into “Other minor fleets” in Tables 4 & 5

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

Discard Reason Category	FISH DISPOSITIION Code	FISH DISPOSITIION 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)	009	DISCARDED, FEMALE
	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
	038	POOR QUALITY, GEAR DAMAGE
Other	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 codes '039' = POOR QUALITY, PREVIOUSLY DISCARDED and ‘090’= DISCARDED BY OBSERVER, INTENDED KEPT CATCH have 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 2017 through June 2018 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
41 Other fleets filtered out						48,077	58.0	13.1	7.4	0.0	21.1	0.3	100.0
					Total	48,077	58.0	13.1	7.4	0.0	21.1	0.3	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	2,498,116	28.3	51.2	17.8	0.6	0.0	2.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	978,604	13.6	47.3	36.1	0.0	0.5	2.6	100.0
7	Otter Trawl	OPEN	all	NE	sm	4,367,560	24.0	44.3	24.7	0.7	0.0	6.2	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,225,244	17.6	35.1	41.2	1.9	0.2	4.0	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	451,806	74.4	0.0	25.6	0.0	0.0	0.0	100.0
36 Other fleets filtered out						1,697,108	25.0	35.8	36.9	0.0	0.7	1.7	100.0
					Total	11,218,437	25.5	42.0	27.8	0.6	0.2	3.8	100.0

Species Group: HERRING, ATLANTIC (Clupea harengus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
41 Other fleets filtered out						259,401	61.3	0.0	36.8	0.0	0.3	1.6	100.0
					Total	259,401	61.3	0.0	36.8	0.0	0.3	1.6	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2017 through June 2018 data.

Species Group: LARGE MESH GROUNDFISH

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	719,805	11.6	9.6	78.2	0.2	0.1	0.3	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,556,530	7.7	63.3	27.7	0.0	0.4	0.9	100.0
37	Dredge, Scallop	AA	LIM	NE	all	386,993	57.7	0.0	41.6	0.3	0.0	0.4	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	340,007	72.2	0.0	27.8	0.0	0.0	0.0	100.0
37 Other fleets filtered out						1,344,783	20.0	41.9	29.3	1.3	4.0	3.4	100.0
					Total	4,348,118	21.6	37.2	37.8	0.5	1.4	1.5	100.0

Species Group: MONKFISH (Lophius americanus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	204,519	46.3	19.9	24.6	0.0	0.0	9.1	100.0
6	Otter Trawl	OPEN	all	MA	lg	371,843	27.0	32.6	35.5	0.0	0.5	4.4	100.0
8	Otter Trawl	OPEN	all	NE	lg	1,011,065	3.0	92.9	3.0	0.0	0.0	1.1	100.0
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	355,183	1.8	2.0	0.0	0.0	95.6	0.6	100.0
36	Dredge, Scallop	AA	LIM	MA	all	645,621	89.8	7.1	2.9	0.0	0.2	0.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	3,776,164	85.1	5.8	5.3	0.0	0.1	3.8	100.0
40	Dredge, Scallop	OPEN	LIM	MA	all	737,597	95.2	4.7	0.0	0.0	0.1	0.0	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	5,602,162	89.3	8.3	2.0	0.0	0.3	0.1	100.0
62	Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	432,054	35.5	64.5	0.0	0.0	0.0	0.0	100.0
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	568,229	30.2	0.0	69.8	0.0	0.0	0.0	100.0
31 Other fleets filtered out						700,477	39.1	38.6	12.4	0.0	7.3	2.5	100.0
					Total	14,404,915	71.7	16.8	7.1	0.0	2.9	1.5	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2017 through June 2018 data.

Species Group: RED DEEPSEA CRAB (Chaceon quinquedens)

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
52	Pots and Traps, Lobster	OPEN	all	MA	all	98,217	100.0	0.0	0.0	0.0	0.0	0.0	100.0
56	Pots and Traps, Crab	OPEN	all	NE	all	1,127,745	74.0	2.0	0.0	14.5	0.0	9.4	100.0
39 Other fleets filtered out						389,314	63.9	0.0	0.0	24.3	1.0	10.7	100.0
					Total	1,615,276	73.2	1.4	0.0	16.0	0.3	9.2	100.0

Species Group: SEA SCALLOP (Placopecten magellanicus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
37	Dredge, Scallop	AA	LIM	NE	all	6,900,665	78.9	0.0	4.5	0.0	10.5	6.1	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	8,739,816	95.9	0.0	0.0	0.0	3.6	0.5	100.0
39 Other fleets filtered out						5,162,228	61.8	0.1	26.6	0.2	5.8	5.5	100.0
					Total	20,802,709	81.8	0.0	8.1	0.0	6.4	3.6	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2017 through June 2018 data.

Species Group: SKATE COMPLEX (Rajidae)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	4,232,848	93.5	0.0	6.3	0.1	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	7,085,906	87.2	0.0	11.2	1.6	0.0	0.1	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,507,391	87.1	0.0	11.8	0.1	0.0	1.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	14,179,594	66.4	1.1	28.8	0.0	0.0	3.7	100.0
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	838,281	32.1	0.0	65.6	0.0	1.4	0.9	100.0
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	2,438,520	32.0	0.0	46.3	0.0	16.9	4.8	100.0
36	Dredge, Scallop	AA	LIM	MA	all	1,185,681	99.8	0.0	0.1	0.0	0.1	0.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	6,901,527	99.1	0.0	0.5	0.0	0.0	0.5	100.0
38	Dredge, Scallop	OPEN	GEN	MA	all	1,377,805	98.1	0.0	1.9	0.0	0.0	0.0	100.0
40	Dredge, Scallop	OPEN	LIM	MA	all	2,536,441	100.0	0.0	0.0	0.0	0.0	0.0	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	9,490,290	93.8	0.0	6.2	0.0	0.0	0.0	100.0
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	2,301,534	74.9	0.0	25.1	0.0	0.0	0.0	100.0
29 Other fleets filtered out						2,209,205	93.5	0.0	6.3	0.0	0.1	0.0	100.0
					Total	56,285,022	82.6	0.3	14.9	0.2	0.8	1.3	100.0

Species Group: SMALL MESH GROUNDFISH

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	619,058	92.5	7.3	0.0	0.0	0.1	0.2	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,527,460	87.1	4.1	7.0	0.1	0.6	1.2	100.0
8	Otter Trawl	OPEN	all	NE	lg	471,225	94.4	3.0	0.1	0.0	2.4	0.1	100.0
37	Dredge, Scallop	AA	LIM	NE	all	201,956	99.9	0.0	0.0	0.0	0.0	0.1	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	186,651	100.0	0.0	0.0	0.0	0.0	0.0	100.0
36 Other fleets filtered out						259,288	96.7	0.4	1.2	0.0	1.6	0.0	100.0
					Total	3,265,639	91.5	3.7	3.4	0.0	0.8	0.6	100.0

See text for fleet abbreviations.

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2017 through June 2018 data.

Species Group: SPINY DOGFISH (Squalus acanthias)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
2	Longline, Bottom	OPEN	all	NE	all	384,584	70.6	1.0	15.8	0.0	0.1	12.4	100.0
5	Otter Trawl	OPEN	all	MA	sm	1,940,936	99.0	0.0	0.9	0.0	0.0	0.2	100.0
6	Otter Trawl	OPEN	all	MA	lg	899,646	98.3	0.0	1.7	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,560,392	100.0	0.0	0.0	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	2,334,732	99.2	0.0	0.8	0.0	0.0	0.0	100.0
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	298,395	73.5	1.0	24.5	0.0	1.0	0.0	100.0
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	1,099,249	80.5	0.6	18.2	0.0	0.8	0.0	100.0
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	129,971	76.1	0.7	0.0	0.0	23.2	0.0	100.0
	33 Other fleets filtered out					614,360	87.2	0.0	7.2	0.0	5.6	0.0	100.0
					Total	9,262,266	93.8	0.2	4.6	0.0	0.8	0.5	100.0

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

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
7	Otter Trawl	OPEN	all	NE	sm	3,013,858	73.5	2.0	4.5	0.0	1.7	18.3	100.0
	40 Other fleets filtered out					2,355,067	90.1	3.9	4.7	0.0	1.2	0.1	100.0
					Total	5,368,926	80.8	2.8	4.6	0.0	1.4	10.3	100.0

Appendix Table 3A, continued. Estimated discards (live lb) and percentage by discard reason category for 14 species groups, based on July 2017 through June 2018 data.

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

Fleet						Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
41 Other fleets filtered out						1,639,066	77.2	1.3	2.8	0.0	1.4	17.3	100.0
					Total	1,639,066	77.2	1.3	2.8	0.0	1.4	17.3	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
41 Other fleets filtered out						8,202	65.8	15.2	2.4	0.0	16.6	0.0	100.0
					Total	8,202	65.8	15.2	2.4	0.0	16.6	0.0	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 2017 through June 2018 data.

Species: BLACK SEA BASS (Centropristis striata)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	436,261	14.3	46.1	32.1	0.2	0.0	7.4	100.0
6	Otter Trawl	OPEN	all	MA	lg	149,262	9.7	53.7	31.3	0.0	2.2	3.1	100.0
7	Otter Trawl	OPEN	all	NE	sm	722,321	2.5	12.2	79.3	1.9	0.0	4.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	111,903	11.4	20.2	56.1	6.3	0.0	6.0	100.0
48	Pots and Traps, Fish	OPEN	all	NE	all	150,085	59.0	33.3	3.0	0.0	0.0	4.7	100.0
53	Pots and Traps, Lobster	OPEN	all	NE	all	269,271	0.0	0.0	100.0	0.0	0.0	0.0	100.0
35 Other fleets filtered out						279,090	12.4	49.4	37.3	0.0	0.1	0.8	100.0
					Total	2,118,193	10.9	27.4	56.7	1.0	0.2	3.9	100.0

Species: FLUKE (Paralichthys dentatus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	310,000	5.9	20.5	64.4	2.9	0.1	6.2	100.0
6	Otter Trawl	OPEN	all	MA	lg	203,134	2.8	34.4	52.1	0.0	0.5	10.1	100.0
7	Otter Trawl	OPEN	all	NE	sm	462,758	8.6	12.4	62.1	2.6	0.2	14.1	100.0
8	Otter Trawl	OPEN	all	NE	lg	512,516	0.3	7.3	84.2	3.2	0.5	4.5	100.0
37	Dredge, Scallop	AA	LIM	NE	all	185,104	71.7	0.0	25.6	0.0	0.0	2.6	100.0
40	Dredge, Scallop	OPEN	LIM	MA	all	106,814	17.9	16.7	65.3	0.0	0.1	0.0	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	442,261	74.4	0.0	25.6	0.0	0.0	0.0	100.0
34 Other fleets filtered out						312,640	40.7	8.8	44.3	0.1	3.7	2.4	100.0
					Total	2,535,227	26.6	10.8	55.0	1.5	0.7	5.5	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 2017 through June 2018 data.

Species: SCUP (Stenotomus chrysops)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	1,751,855	35.5	57.6	6.5	0.3	0.0	0.1	100.0
6	Otter Trawl	OPEN	all	MA	lg	626,208	18.1	49.9	32.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	3,182,481	31.9	57.4	5.0	0.1	0.0	5.7	100.0
8	Otter Trawl	OPEN	all	NE	lg	600,826	34.1	62.6	0.1	0.0	0.0	3.2	100.0
37 Other fleets filtered out						403,648	7.0	91.0	0.2	0.0	0.1	1.6	100.0
					Total	6,565,018	30.2	59.3	7.2	0.1	0.0	3.2	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	168,327	4.2	93.5	0.0	0.0	1.2	1.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	38,640	74.6	0.0	25.4	0.0	0.0	0.0	100.0
39 Other fleets filtered out						35,237	54.8	15.0	29.3	0.0	0.9	0.0	100.0
					Total	242,203	22.8	67.2	8.3	0.0	1.0	0.7	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	42,448	0.2	51.8	39.7	0.0	0.9	7.5	100.0
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	25,661	0.0	1.0	21.5	0.0	75.8	1.7	100.0
53	Pots and Traps, Lobster	OPEN	all	NE	all	22,345	20.8	0.0	79.2	0.0	0.0	0.0	100.0
38 Other fleets filtered out						64,568	17.1	31.9	17.1	1.1	3.9	28.8	100.0
					Total	155,022	10.2	27.6	33.0	0.5	14.4	14.3	100.0

See text for fleet abbreviations.

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 2017 through June 2018 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
4	Hand Line	OPEN	all	NE	all	4,040	0.0	100.0	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	3,427	0.0	54.4	43.8	1.8	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	43,872	1.6	44.1	41.4	0.0	0.0	12.9	100.0
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	3,524	0.0	62.9	37.1	0.0	0.0	0.0	100.0
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	51,350	6.5	40.6	27.2	0.0	3.0	22.7	100.0
36 Other fleets filtered out						4,438	24.4	18.8	54.0	2.8	0.0	0.0	100.0
					Total	110,650	4.6	44.4	33.7	0.2	1.4	15.6	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	961	0.0	0.0	100.0	0.0	0.0	0.0	100.0
4	Hand Line	OPEN	all	NE	all	2,038	0.0	0.0	89.5	10.5	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	33,806	1.4	0.0	98.6	0.0	0.0	0.0	100.0
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	2,442	5.4	0.0	94.6	0.0	0.0	0.0	100.0
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	663	0.0	0.0	100.0	0.0	0.0	0.0	100.0
36 Other fleets filtered out						1,602	37.1	0.0	62.9	0.0	0.0	0.0	100.0
					Total	41,512	2.8	0.0	96.6	0.5	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 2017 through June 2018 data.

Species: HADDOCK (Melanogrammus aeglefinus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
7	Otter Trawl	OPEN	all	NE	sm	337,506	0.6	14.4	84.9	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	479,757	0.1	99.6	0.0	0.0	0.3	0.0	100.0
39 Other fleets filtered out						427,106	4.9	89.5	4.1	0.0	0.6	0.8	100.0
					Total	1,244,370	1.9	73.0	24.5	0.0	0.3	0.3	100.0

Species: OCEAN POUT (Zoarces americanus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	6,792	68.0	0.0	32.0	0.0	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	7,033	99.0	0.0	1.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	16,963	45.6	0.0	54.4	0.0	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	33,338	49.3	0.0	50.7	0.0	0.0	0.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	4,240	86.3	0.0	13.7	0.0	0.0	0.0	100.0
53	Pots and Traps, Lobster	OPEN	all	NE	all	5,791	100.0	0.0	0.0	0.0	0.0	0.0	100.0
63	Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	3,783	97.1	0.0	2.9	0.0	0.0	0.0	100.0
34 Other fleets filtered out						3,485	95.9	0.0	4.1	0.0	0.0	0.0	100.0
					Total	81,425	64.1	0.0	35.9	0.0	0.0	0.0	100.0

See text for fleet abbreviations.

Appendix Table 3B, continued. Estimated discards (live lb) and percentage by discard reason category for 25 individual species that compose the 14 species groups, based on July 2017 through June 2018 data.

Species: POLLOCK (Pollachius virens)

Fleet						Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
4	Hand Line	OPEN	all	NE	all	133,897	0.0	92.2	0.0	0.0	2.7	5.1	100.0
40 Other fleets filtered out						103,383	1.0	79.6	2.8	0.0	16.5	0.0	100.0
					Total	237,280	0.5	86.7	1.2	0.0	8.7	2.9	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
41 Other fleets filtered out						69,723	19.5	76.7	2.6	0.0	0.5	0.8	100.0
					Total	69,723	19.5	76.7	2.6	0.0	0.5	0.8	100.0

Species: WHITE HAKE (Urophycis tenuis)

Fleet						Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
41 Other fleets filtered out						35,770	64.7	1.0	18.3	0.0	15.7	0.3	100.0
					Total	35,770	64.7	1.0	18.3	0.0	15.7	0.3	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 2017 through June 2018 data.

Species: WINDOWPANE FLOUNDER (Scophthalmus aquosus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	121,692	33.0	0.0	65.3	1.6	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	135,013	35.7	0.0	62.8	1.5	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	134,440	34.1	0.0	65.3	0.6	0.0	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	401,642	17.8	0.2	82.0	0.0	0.0	0.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	217,284	57.7	0.0	41.3	0.6	0.0	0.5	100.0
39	Dredge, Scallop	OPEN	GEN	NE	all	17,234	53.2	0.0	46.8	0.0	0.0	0.0	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	76,107	79.2	0.0	20.8	0.0	0.0	0.0	100.0
34 Other fleets filtered out						47,431	37.7	0.0	62.1	0.2	0.0	0.0	100.0
					Total	1,150,843	36.3	0.1	63.0	0.5	0.0	0.1	100.0

Species: WINTER FLOUNDER (Pseudopleuronectes americanus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	66,351	26.2	0.3	72.2	1.3	0.0	0.0	100.0
6	Otter Trawl	OPEN	all	MA	lg	42,901	28.7	1.2	40.0	30.2	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	136,269	13.6	4.0	79.9	0.4	0.3	1.7	100.0
8	Otter Trawl	OPEN	all	NE	lg	63,619	3.0	78.0	18.5	0.0	0.4	0.1	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	163,487	68.8	0.0	31.1	0.0	0.0	0.0	100.0
36 Other fleets filtered out						56,457	70.4	3.2	24.0	0.1	1.7	0.6	100.0
					Total	529,083	38.3	10.9	47.3	2.7	0.3	0.5	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 2017 through June 2018 data.

Species: WITCH FLOUNDER (Glyptocephalus cynoglossus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	22,936	77.3	0.6	18.7	2.6	0.0	0.8	100.0
7	Otter Trawl	OPEN	all	NE	sm	19,599	15.0	4.0	80.9	0.0	0.1	0.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	94,751	5.5	92.4	0.6	0.2	0.5	0.7	100.0
37	Dredge, Scallop	AA	LIM	NE	all	20,654	77.4	0.0	22.3	0.0	0.0	0.2	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	36,889	99.3	0.0	0.7	0.0	0.0	0.0	100.0
36 Other fleets filtered out						57,839	64.9	1.9	32.8	0.4	0.0	0.0	100.0
					Total	252,666	45.9	35.5	17.7	0.4	0.2	0.4	100.0

Species: YELLOWTAIL FLOUNDER (Limanda ferruginea)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
8	Otter Trawl	OPEN	all	NE	lg	55,421	1.5	96.0	2.4	0.0	0.1	0.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	57,157	25.2	0.0	74.8	0.0	0.0	0.0	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	34,477	24.2	0.0	75.8	0.0	0.0	0.0	100.0
38 Other fleets filtered out						50,515	19.5	5.5	74.6	0.1	0.1	0.2	100.0
					Total	197,570	16.9	28.3	54.6	0.0	0.0	0.1	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 2017 through June 2018 data.

Species: OFFSHORE HAKE (Merluccius albidus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	2,738	100.0	0.0	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	2,620	100.0	0.0	0.0	0.0	0.0	0.0	100.0
39 Other fleets filtered out						79,824	100.0	0.0	0.0	0.0	0.0	0.0	100.0
					Total	85,182	100.0	0.0	0.0	0.0	0.0	0.0	100.0

Species: RED HAKE (Urophycis chuss)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	341,537	99.9	0.1	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	813,154	87.8	2.3	8.5	0.0	0.0	1.4	100.0
8	Otter Trawl	OPEN	all	NE	lg	176,944	96.7	2.9	0.3	0.0	0.1	0.0	100.0
37	Dredge, Scallop	AA	LIM	NE	all	181,067	99.9	0.0	0.0	0.0	0.0	0.1	100.0
41	Dredge, Scallop	OPEN	LIM	NE	all	175,252	100.0	0.0	0.0	0.0	0.0	0.0	100.0
36 Other fleets filtered out						79,627	98.6	0.1	1.2	0.0	0.1	0.0	100.0
					Total	1,767,582	93.9	1.4	4.0	0.0	0.0	0.7	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	274,783	83.4	16.0	0.0	0.0	0.2	0.4	100.0
7	Otter Trawl	OPEN	all	NE	sm	711,686	86.3	6.1	5.3	0.1	1.3	1.0	100.0
8	Otter Trawl	OPEN	all	NE	lg	294,281	93.3	3.0	0.0	0.0	3.6	0.1	100.0
38 Other fleets filtered out						132,125	94.4	0.7	1.7	0.0	3.2	0.0	100.0
					Total	1,412,875	88.0	6.9	2.8	0.1	1.7	0.6	100.0

See text for fleet abbreviations.

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 2017 through June 2018 data.

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
41 Other fleets filtered out						385,059	77.2	2.4	20.0	0.0	0.2	0.2	100.0
					Total	385,059	77.2	2.4	20.0	0.0	0.2	0.2	100.0

Species: BUTTERFISH (Peprilus triacanthus)

Fleet						Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
5	Otter Trawl	OPEN	all	MA	sm	761,431	97.4	2.6	0.0	0.0	0.0	0.0	100.0
7	Otter Trawl	OPEN	all	NE	sm	1,496,885	95.9	3.4	0.3	0.0	0.3	0.0	100.0
39 Other fleets filtered out						67,866	46.7	2.3	50.9	0.0	0.0	0.2	100.0
					Total	2,326,182	95.0	3.1	1.7	0.0	0.2	0.0	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
41 Other fleets filtered out						391,154	72.9	0.0	10.4	0.0	1.1	15.6	100.0
					Total	391,154	72.9	0.0	10.4	0.0	1.1	15.6	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 2017 through June 2018 data.

Species: NORTHERN SHORTFIN SQUID (Illex illecebrosus)

Fleet							Percentage by Discard Reason Category						
Row	Gear Type	Access Area	Trip Category	Region	Mesh Group	Discarded	No Market	Regulation (Size)	Regulation (Quota)	Regulation (Other)	Poor Quality	Other	Total
7	Otter Trawl	OPEN	all	NE	sm	1,159,656	81.2	2.5	0.0	0.0	15.2	1.1	100.0
	40 Other fleets filtered out					1,083,074	78.6	12.0	0.9	0.0	3.6	0.1	95.2
					Total	2,242,729	80.0	7.1	0.4	0.0	9.6	0.6	97.7

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
	41 Other fleets filtered out					2,002	70.7	22.0	7.3	0.0	0.0	0.0	100.0
					Total	2,002	70.7	22.0	7.3	0.0	0.0	0.0	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
	41 Other fleets filtered out					6,200	64.4	12.8	0.8	0.0	22.0	0.0	100.0
					Total	6,200	64.4	12.8	0.8	0.0	22.0	0.0	100.0

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

Row	Fleet 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	lg	OTSC OPEN GEN lg MA (Row 11)
12	Otter Trawl, Twin	OPEN	all	MA	sm	OTT sm MA (Row 12)
13	Otter Trawl, Twin	OPEN	all	MA	lg	OTT lg MA (Row 13)
14	Otter Trawl, Twin	OPEN	all	NE	sm	OTT sm NE (Row 14)
15	Otter Trawl, Ruhle	OPEN	all	MA	sm	OTR sm MA (Row 15)
16	Otter Trawl, Ruhle	OPEN	all	MA	lg	OTR lg MA (Row 16)
17	Otter Trawl, Ruhle	OPEN	all	NE	sm	OTR sm NE (Row 17)
18	Otter Trawl, Haddock Separator	OPEN	all	NE	lg	OTH lg NE (Row 18)
19	Otter Trawl, Shrimp	OPEN	all	MA	sm	OTSH sm MA (Row 19)
20	Otter Trawl, Shrimp	OPEN	all	NE	sm	OTSH sm NE (Row 20)
21	Otter Trawl, Other	OPEN	all	MA	sm	OTO sm MA (Row 21)
22	Otter Trawl, Other	OPEN	all	NE	sm	OTO sm NE (Row 22)
23	Otter Trawl, Other	OPEN	all	NE	lg	OTO lg NE (Row 23)
24	Floating Trap	OPEN	all	MA	all	FT MA (Row 24)
25	Floating Trap	OPEN	all	NE	all	FT NE (Row 25)
26	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	sm	GN sm MA (Row 26)
27	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	lg	GN lg MA (Row 27)
28	Gillnet, Sink, Anchor, Drift	OPEN	all	MA	xlg	GN xlg MA (Row 28)
29	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	sm	GN sm NE (Row 29)
30	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	lg	GN lg NE (Row 30)
31	Gillnet, Sink, Anchor, Drift	OPEN	all	NE	xlg	GN xlg NE (Row 31)
32	Purse Seine	OPEN	all	MA	all	PS MA (Row 32)
33	Purse Seine	OPEN	all	NE	all	PS NE (Row 33)
34	Dredge, Scallop	AA	GEN	MA	all	DRSC AA GEN MA (Row 34)
35	Dredge, Scallop	AA	GEN	NE	all	DRSC AA GEN NE (Row 35)
36	Dredge, Scallop	AA	LIM	MA	all	DRSC AA LIM MA (Row 36)
37	Dredge, Scallop	AA	LIM	NE	all	DRSC AA LIM NE (Row 37)
38	Dredge, Scallop	OPEN	GEN	MA	all	DRSC OPEN GEN MA (Row 38)
39	Dredge, Scallop	OPEN	GEN	NE	all	DRSC OPEN GEN NE (Row 39)
40	Dredge, Scallop	OPEN	LIM	MA	all	DRSC OPEN LIM MA (Row 40)
41	Dredge, Scallop	OPEN	LIM	NE	all	DRSC OPEN LIM NE (Row 41)
42	Danish Seine	OPEN	all	MA	all	DS MA (Row 42)
43	Trawl, Mid-water Paired&Single	all	all	NE	sm	TMW all sm NE (Row 43)
44	Trawl, Mid-water Paired&Single	OPEN	all	MA	sm	TMW OPEN sm MA (Row 44)
45	Pots and Traps, Other	OPEN	all	MA	all	PTO MA (Row 45)
46	Pots and Traps, Other	OPEN	all	NE	all	PTO NE (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		Pots and Traps, Fish	OPEN	all	MA	all	PTF MA (Row 47)
48		Pots and Traps, Fish	OPEN	all	NE	all	PTF NE (Row 48)
49		Pots and Traps, Conch	OPEN	all	MA	all	PTC MA (Row 49)
50		Pots and Traps, Conch	OPEN	all	NE	all	PTC NE (Row 50)
51		Pots and Traps, Hagfish	OPEN	all	NE	all	PTH NE (Row 51)
52		Pots and Traps, Lobster	OPEN	all	MA	all	PTL MA (Row 52)
53		Pots and Traps, Lobster	OPEN	all	NE	all	PTL NE (Row 53)
54		Weir	OPEN	all	NE	all	WR NE (Row 54)
55		Pots and Traps, Crab	OPEN	all	MA	all	PTCR MA (Row 55)
56		Pots and Traps, Crab	OPEN	all	NE	all	PTCR NE (Row 56)
57		Beam Trawl	OPEN	all	MA	sm	BT sm MA (Row 57)
58		Beam Trawl	OPEN	all	MA	lg	BT lg MA (Row 58)
59		Beam Trawl	OPEN	all	NE	lg	BT lg NE (Row 59)
60		Dredge, Other	OPEN	all	MA	all	DRO MA (Row 60)
61		Dredge, Urchin	OPEN	all	NE	all	DRU NE (Row 61)
62		Dredge, Ocean Quahog/Surfclam	OPEN	all	MA	all	DRC MA (Row 62)
63		Dredge, Ocean Quahog/Surfclam	OPEN	all	NE	all	DRC NE (Row 63)
		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:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

From Eq. 11, let

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

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