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Assumed Discard Rate Analysis

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A working paper in support of the Discard Estimation Methodology Review

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*Review of the Northeast Region Discard Estimation Methods
for Groundfish Quota Monitoring and Annual Catch Limits*

Background: Sector management to be implemented under Amendment 16 to the Northeast Multispecies Fishery Management Plan requires weekly monitoring and reporting of total catch (landings and discard) by sector, stock, and gear type. A method for estimating discards is required which must meet a broad range of performance standards beyond statistical robustness: because of the volume and frequency of the updates, a method which is not computationally intensive and does not require direct involvement of the analyst is desirable. Because total catch is prescribed by an associated Annual Catch Entitlement (ACE) for each stock within the sector, the method should minimize the possibility of under- or over-harvesting with respect to the ACE. Similarly, the method should balance responsiveness to temporal changes in fishing practices with stability in terms of status of total catch with respect to the ACE. Finally, because discard estimation processes have already been developed and reviewed in the contexts of both Standardized Bycatch Reporting Methodology and individual species stock assessments, the method should be as consistent with those approaches as possible. It is thus very desirable to minimize the difference between discard estimates for sector monitoring and discard estimates for stock assessments.

Terms of Reference

1. Compare and contrast the performance with alternative estimators of total discards with respect to precision and accuracy.
2. Evaluate impacts of trimming observations (e.g. large discard events) on the magnitude of bias and measures of precision.
3. Examine the cumulative method and temporally stratified cumulative method (with various time steps and discarding patterns) and recommend a preferred method with consideration of the following:
 - a. Within-year pattern of precision and bias, including a review of historical data used to estimate landings and discards (precision/accuracy)
 - b. Feasibility/practical aspects, particularly implications of stratum size for small sectors and the ability to derive obtain fine-scale measures of total discard and its uncertainty.
 - c. Estimate the probability of premature closure.
4. Provide guidance of methods to measure uncertainty of the preferred method. e.g., asymptotic versus bootstrap estimates of variance.
5. Provide guidance on risks of alternative management actions given the uncertainty and/or behavior of the preferred discard estimation method. In particular, consider the costs to the industry/sector from premature cessation of fishing and the risk to the resource from excess harvests.
6. Consider implications of finer-scale stratification on performance of estimators that might be required for sector-specific discard rates and will be required for multi-stock species.

Assumed Discard Rate Analysis

Introduction

This working paper describes the data and methods used to derive strata-specific assumed discard rates to estimate discards for unobserved trips when in-season discard rates are not available. At the beginning of the fishing year, in-season observer coverage may not be available for all cells within the stratification scheme; however, the expectation is that in-season observer coverage will exist for trips within the stratification scheme as the fishing year progresses. Discard estimates derived from assumed rates will be superseded by discard estimates derived from in-season data through the weekly cumulative reporting process. This working paper provides preliminary strata-specific assumed discard rates; when a final sector roster is available, the assumed discard rates will be finalized. This working paper also illustrates the sample sizes that result when stratifying by sector, gear type and stock. Consideration of the target observed coverage level and the realized sample sizes are important when selecting an alpha level to weight the transition between using assumed discard rates and in-season discard rates.

Amendment 16 identifies specific data set characteristics. The strata-specific assumed discard rates are derived for use during a given fishing year (May 1 to April 30) using data from the preceding year for the 13 species (20 stocks; Table 1) managed under Amendment 16 of the Northeast Multispecies Fishery Management Plan. The data set for common pool discard rates are derived using non-sector vessel data. The data set for sector discard rates excludes discards associated with trip limits which are described below. Relevant Amendment 16 text on assumed discard rate text is given in Appendix A.

This is a companion working paper to the suite of working papers and documents that describe the methodology of groundfish quota monitoring and annual catch limits that include: the transition between an assumed discard rate and an in-season discard rate (FSO 2010), methods to determine discards from observed trips (Wigley 2010), discard estimation for unobserved trips with the same trip characteristic as observed trips (Nitschke 2010), an investigation of the separate ratio method via simulation analysis (Palmer 2010b), and the stock apportionment algorithm used for landings (Palmer 2010a).

Methods

This analysis is based on Northeast Fisheries Observer Program (NEFOP) and Vessel Trip Report (VTR) data from July 2008 to June 2009, the same data used in the 2010 Standardized Bycatch Reporting Methodology (SBRM) Sea Day Analysis and Prioritization (NEFSC 2010). These data represent the most recent 12-month period of data. These data are divided into two primary sets: one set based upon vessels affiliated with a sector and the other set based on vessels in the common pool not affiliated with a sector. Vessels are partitioned into these two data sets using the *Oracle* MQRS schema table *sector_participants_no_cph*, that identifies common pool vessels and vessels eligible to join a sector and able to actively fish in that sector. Appendix Table 1 summarizes the common pool and sector vessels.

The NEFOP data sets contain only observed hauls from trips using ‘complete’ sampling protocols (NMFS 2010; Wigley et al. 2007). As part of the NEFOP data collection protocols for

observed hauls, at-sea observers report the fish disposition associated with discards (NMFS 2010); these codes are given in Table 2. The discards associated with discard reason ‘039’ (previously discarded) are excluded from both the sector and common pool data sets. For the sector data set, discards associated with trip limits (discard reasons ‘014 - Regulations prohibit retention, quota filled’ and ‘063 - Retaining only certain size better price trip quota in effect’; Table 2) are excluded as specified in Amendment 16 (NEFMC 2009).

The primary data sets from sectors and the common pool were further reduced to contain only the three gear types (longline ‘LL’, otter trawl ‘OT’ and gillnet ‘GN’) listed in Table 19 of Amendment 16 (NEFMC 2009; and given in Appendix A). The Ruhle trawl and Haddock Separator trawl have not been separately partitioned in this analysis due the lack of an unique gear code prior to April 2009 in the VTR data. As of April 2009, these gear types have unique gear codes and future assumed discard rate analysis will have the ability to identify these gear types. For fishing year 2010, a methodology will need to be established on how to handle these gear types (e.g. use the otter trawl assumed rate), both known for reducing bycatch. In the NEFOP data, observed trips using these two gear types can be indirectly identified using gear characteristic variables; however, in the data set used, there are less than 10 observed trips for both these gear types combined.

The statistical areas that define each of the 13 species and 20 stocks for quota monitoring are given in Table 1. Mesh is not specified in A16, but implied to be large mesh for otter trawl and gillnet. Extra large mesh size for gillnet is also included in this analysis.

The stratification scheme of 17 sectors, 4 gear-mesh groups, and 20 stocks yields a matrix of 1360 cells. Not all of the 1360 cells correspond to the list of stock-gear combinations given in Table 19. There are 340 cells (20 stock-gear combinations for 17 sectors) that are not listed in Table 19. These cells are flagged to facilitate the formation of a subsequent subset.

The strata-specific assumed discard rate for a stock is the weighted sum of discarded pounds of a stock divided by the weighted sum of the kept pounds of all species from trips using the same gear type fishing in the same stock area pooled over half year (Equation 1). The application of the strata-specific assumed discard rate is described as Scenario 5 (U2) by Wigley 2010 where stock j discards, extrapolated from an assumed discard rate using the sum of the Dealer kept weight of all species from an unobserved trip i from sector s with the same stratification (Equation 2). In this working paper, extrapolated discards are not reported.

$$(1) \quad r_{s,j} = \frac{\sum_{h=1}^Q N_h \sum_{i=1}^{n_h} \frac{d_{jih}}{n_h}}{\sum_{h=1}^Q N_h \sum_{i=1}^{n_h} \frac{k_{ih}}{n_h}}$$

$$(2) \quad \hat{Du}2_{s,i,j} = r_{s,j} * Kall_{s,i,u}$$

where

$r_{c,j}$ is the combined discard ratio of stock j and is the strata-specific assumed discard rate;

d_{jih} is discards of stock j from trip i in stratum h ;
 k_{ih} is kept pounds of all species on trip i in stratum h ;
 N_h is the number of VTR trips in stratum h ;
 n_h is the number of observed trips in stratum h ;
 $Kall_{s,j,u}$ is the Dealer kept weight (live pounds) of all species from unobserved trips i , in sector s with same stratification.

Stratum h usually represents a calendar quarter, however due to small sample sizes resulting from the stratification, a semi-annual time step is used. Each estimate of the discard rate is associated with a gear type and mesh size. The subscript for gear type and mesh is dropped to improve readability.

As specified in Amendment 16, to provide a strata-specific assumed discard rate for each cell in the stratification scheme, the common pool and the sector data sets are stratified at three increasing levels of aggregation to generate: 1) sector-gear-stock specific discard rates (sector specific); 2) gear-stock specific discard rates (fleet specific), and 3) stock specific discard rates (stock specific). The five resulting data set are:

C1 containing sector-specific discard rates using the common pool primary data set;
C3 containing stock-specific discard rates using the common pool primary data set;
S1 containing sector-specific discard rates using the sector primary data set;
S2 containing fleet-specific discard rates using the sector primary data set; and
S3 containing stock-specific discard rates using the sector primary data set.
Note: for the common pool, there is not a gear-stock (C2) data set because the common pool contains only one sector, thus $C1 = C2$.

A sample size of 12 observed trips is selected as a minimum number of observed trips upon which to base a strata-specific assumed discard rates. A minimum sample size of 12 trips is consistent with the number of trips established by the National Working Group on Bycatch (NWGB) for pilot coverage. The NWGB defined pilot coverage (a minimum of three trips per quarter per stratum) as a minimum level of observer coverage to acquire bycatch information with which to calculate variance estimates that in turn can be used to further define the level of sampling needed (NMFS 2004). The numbers of observer trips are summarized by sector, gear-mesh and stock for common pool and sector data sets, C1 and S1 respectively, to evaluate the need to use discard rates derived from the coarser levels of data aggregation.

The 1360 cell matrix is populated with strata-specific assumed discard rates derived at the finest stratification level, C1 and S1, for common pool cells and sector cells, respectively. Discard rates associated with sector cells having less than 12 observed trip are populated with discard rates derived at the fleet level stratification, S2 (note: only for sectors, not the common pool). Any remaining cells with less than 12 observed trips are populated with discard rates derived at the stock level, C3 and S3, for common pool cells and sector cells respectively. Thus, a single 1360 matrix is created containing the strata-specific assumed discard rate for every sector-gear/mesh-stock combination; the number of observed trips used in the calculation of the discard rate and the data set used to derive the discard rate are also stored in the matrix.

Results

At the time of this analysis, there are 18 groups of vessels for the upcoming fishing year: 17 sectors and the common pool. Using the previous year's data and the *Oracle* table *mqrs.sector_participants_no_cph* table, 17 groups of vessels resulted: 16 sectors and the common pool. Sector 4 NFS IV have permits that are not associated with a vessel and will not be fishing, hence this sector is not included in this analysis.

The numbers of observed trips (sample sizes) obtained during the July 2008 and June 2009 time period are summarized in Table 3 by gear-mesh and stock for the 5 data sets used to derived assumed discard rates. The majority (75%) of 1360 cells have a sample size less than 12 observed trips, indicating that most discard rates will not be derived from the finest level of stratification: sector-gear/mesh-stock level (C1 or S1). Three sectors (Sector 6 Port Clyde Community, Sector 11 NFS XII, and Sector 21 NCCS) will not have discard rates for any of their gear-mesh and stock combination that are derived at the sector-gear/mesh-stock level (S1). Summaries of the number of cells with discard rates derived from one of the five data sets is given in Tables 4a (for the 1360 matrix) and 4b (for the 1020 matrix that corresponds to Table 19 in Amendment 16) by common pool and sector. The majority of assumed discard rates are populated from the gear-stock stratification level (S2; Tables 4a and 4b). When considering only the stock-gear combinations associated with Table 19 of Amendment 16 (Table 4b), only the common pool had more discard rates derived at the finest stratification level (C1).

The preliminary strata-specific assumed discard rates for each species, stock, gear and mesh is given in Table 5 for the common pool and the sectors. The number of observed trips used in discard rate calculation and the data aggregation level (C1= sector-specific using common pool data set; C3= stock-specific using common pool data set; S1 =sector-specific using sector data set; S2= fleet-specific using sector data set; S3 stock-specific using sector data) are also reported for each of the 1360 cells. As expected, the stock-specific discard rates differ from the discard rates derived by the finest level of stratification due to the aggregation of data over gear type (longlines often have different discarding patterns than otter trawl and gillnet gear). The shaded rows (marked with an 'x') in Table 5 indicate those stock and gear combinations not included in Table 19 of Amendment 16. These rows can be removed as needed.

This analysis is preliminary and advisory only and does not necessarily reflect the final information and data used when Amendment 16 is implemented by NMFS. Application of the strata-specific assumed discard rate is given in Wigley (2010). The transition between assumed discard rates and in-season discard rates are described in FSO (2010).

Discussion

It is expected that the primary data sets used in this analysis would be updated every year prior to beginning of the fishing year, using up-to-date sector rosters and recent NEFOP, VTR or Dealer data. The specified data characteristics restricting the data used (e.g. the exclusion of discards due to a particular discard reasons for sector vessels and/or common pool, and/or other criteria) should be re-evaluated based upon management regulations and the implications of these regulations with regards to discard patterns.

As specified in Amendment 16, data associated with common pool vessels are used to form the primary data set used to derive strata-specific assumed discard rates for the common pool. However, because this group of vessels is comprised of a single group, there is no gear-stock data set (C2); only C1 and C3 data sets. There are 16 cells in the common pool where strata-specific discard rates are derived from a stock-level (C3) due to small sample sizes at the sector-gear-stock level (C1). It is recognized that there are distinct discard rate differences by gear type, particularly between longline and the other two gear types. If allowed, one possible alternative method is to apply the sector-gear specific (S2) discard rates derived using the sector primary data set before applying the common pool stock-specific rates (C3). This would result in 10 of the 16 cells (Table 3) that could be filled at a gear-stock specific level rather than the stock specific level.

When calculating assumed discard rates for Amendment 16 for sectors without at-sea monitoring programs, discard reasons associated with trip limits are removed to provide an assumed discard rate associated with management regulations operating without trip limits (i.e., groundfish sectors). However, it is unknown whether or not future fishing practices under sector management will be similar to fishing practices emulated by this analysis (effort control regulations with trip limits removed). It is not known how fishing practices and discard rates will change as stock-specific annual catch entitlements (ACE) are reached. The data used in this analysis reflects stock dynamics (e.g., the presence/absence of a large year class) as well as management regulations at the time the data were collected. Removing discards associated with trip limits does not alter the premise that future discard rates *assume* fishing practices and stock conditions similar to recent observations.

‘Surrogate’ assumed discard rates may be needed with regard to gear types and stocks not included in Table 19 of Amendment 16 but used during the fishing year. For example, the Ruhle trawl (VTR gear code OTR, *negear* 054) and the Haddock Separator trawl (VTR gear code OTH, *negear* 057) are two gear types, specifically designed to reduce bycatch, that are expected to be used in the 2010 fishing year. In the data set used, only a limited number of trips using these gears are available (less than 10 trips for both gear types combined, below the 12 trip sample size minimum) and consequently eliminated from this analysis. One possible ‘surrogate’ protocol would be to apply the otter trawl strata-specific assumed discard rate until ‘in-season’ discard rates are established for these gear types. Similarly, another ‘surrogate’ protocol may be needed for sectors with annual catch entitlements (ACEs) for eastern Georges Bank cod and haddock in the special access program (SAP) areas. These two sub-stocks have not been analyzed due to database limitations (i.e. can not identify the portion of SAP trips that have ‘flexed’ in and out of the SAP area). This limitation also extends to the extrapolation of the discard rate, the possible inability to identify the corresponding *Kall* of the trip. Further consideration may be warranted for the situations where ‘surrogate’ discard rates are necessary.

Sample size minimum, the expected observed coverage, and the selection of the alpha weighting used in the transition between assumed discard rates and in-season discard rates should all be considered simultaneously. Table 3 reveals the potential sample sizes that may be realized. The selection of a minimum sample size of 12 observed trips is not analysis-based, but rather based on conclusions drawn by the National Working Group on Bycatch. The intention of the transition and selection of alpha is to move from the assumed discard rates to the in-season discard rates and not remain in ‘transition’ for the duration of the fishing year.

Conclusions

The use of strata-specific assumed discard rates is viewed as an approach to provide a means for estimating discards from unobserved trips when in-season observer coverage is not yet available, e.g. at the beginning of the fishing year. The expectation is that in-season observer coverage will exist for trips within the stratification scheme used and the discard estimates using this method early in the fishing year will be superseded by discard estimates derived from in-season data. Using a minimum sample size of 12 observed trips, the majority of cells within the stratification scheme (sector-gear-stock) are populated using data aggregated at the coarser gear-stock level. Careful consideration of the stratification (number of cells) and the expected realized observed coverage (sample size) are need when selecting an alpha level used in the transition between assumed discard rate and in-season rates.

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Table 1. Species, stock, stock abbreviations, and statistical area collections to support quota monitoring for the 20 stocks (13 species) considered in Amendment 16 of the Northeast Multispecies Fishery Management Plan. [Modified from Table 2 in Palmer 2010a]

Species	Stock	Stock Abbreviation	Statistical areas
Atlantic cod	Gulf of Maine	GOM	464, 465, 467, 511, 512, 513, 514, 515 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
	Georges Bank	GB	
Haddock	Gulf of Maine	GOM	464, 465, 467, 511, 512, 513, 514, 515 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
	Georges Bank	GB	
Yellowtail Flounder	Cape Cod/Gulf of Maine	CCGOM	464, 465, 467, 511, 512, 513, 514, 515, 521
	Georges Bank	GB	522, 525, 542, 543, 561, 562
	Southern New England/ Mid-Atlantic	SNEMA	526, 533, 534, 537, 538, 539, 541, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Winter Flounder	Gulf of Maine	GOM	464, 465, 467, 511, 512, 513, 514, 515
	Georges Bank	GB	522, 525, 542, 543, 561, 562
	Southern New England/ Mid-Atlantic	SNEMA	521, 526, 533, 534, 537, 538, 539, 541, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Windowpane Flounder	Northern	NOR	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 542, 543, 561, 562
	Southern	SOU	526, 533, 534, 537, 538, 539, 541, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
American plaice	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Witch Flounder	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Atlantic halibut	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Pollock	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
White hake	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Acadian redfish	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Ocean pout	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640
Atlantic Wolffish	Unit	ALL	464, 465, 467, 511, 512, 513, 514, 515, 521, 522, 525, 526, 533, 534, 537, 538, 539, 541, 542, 543, 561, 562, 611, 612, 613, 614, 615, 616, 621, 622, 623, 624, 625, 626, 627, 628, 629, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640

Table 2. Northeast Fisheries Observer Program fish disposition codes for discards, by category. The shaded rows are the discard reasons excluded in the sector ('S1', 'S2' and 'S3') data sets used in this analysis.

Category	Code	Fish Disposition
Market	001	NO MARKET, REASON NOT SPECIFIED.
	002	NO MARKET, TOO SMALL
	003	NO MARKET, TOO LARGE
	004	NO MARKET, QUOTA FILLED
	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
Regulations	011	REGULATIONS PROHIBIT RETENTION, REASON NOT SPECIFIED.
	012	REGULATIONS PROHIBIT RETENTION, TOO SMALL
	013	REGULATIONS PROHIBIT RETENTION, TOO LARGE
	014	REGULATIONS PROHIBIT RETENTION, QUOTA FILLED.
	015	REGULATIONS PROHIBIT RETENTION, NO QUOTA IN AREA.
	022	REGULATIONS PROHIBIT RETENTION, V-NOTCHED
	023	REGULATIONS PROHIBIT RETENTION, SOFT-SHELL
	024	REGULATIONS PROHIBIT RETENTION, WITH EGGS.
025	REGULATIONS PROHIBIT ANY RETENTION.	
Quality	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, SHALL DISEASE
	038	POOR QUALITY, GEAR DAMAGE
	039	POOR QUALITY, PREVIOUSLY DISCARDED
Not Brought On Board	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.
	048	NOT BROUGHT ON BOARD, VESSEL CAPACITY FILLED
	049	NOT BROUGHT ON BOARD, NOT ENOUGH FISH TO PUMP ABOARD
Debris/Shell	052	INCIDENTAL TAKE (MAMMAL, SEA TURTLE, SEA BIRD)
	053	DEBRIS
Upgrading/Market Driven Selectivity	054	EMPTY SHELLS
	062	UPGRADED
General	063	RETAINING ONLY CERTAIN SIZE BETTER PRICE TRIP QUOTA IN EFFECT.
	000	DISCARDED GENERAL, UNKNOWN DISCARD REASON
	099	OTHER, DISCARDED

Table 3. Number of observed trips for 5 data set aggregation levels, by sector, gear-mesh and stock during July 2008 through June 2009. Cells with less than 12 observed trips are shaded.

Data Set Aggregation Level	SECTOR ID	Gear	Mesh	AM. PLAICE	COD		HADDOCK		POLLOCK	REDFISH	WHITE HAKE	WINTER FLD.			WITCH FLD.	WOLFFISH	YELLOWTAIL FLD.			OCEAN POUT	HALIBUT	WINDOWPANE FLD.		
				ALL	GB	GOM	GB	GOM	ALL	ALL	ALL	GB	GOM	SNEMA	ALL	ALL	GB	GOM	SNEMA	ALL	ALL	NOR	SOU	
Common Pool (C1)	2	LL	all	18	18	1	18	1	18	18	18	17	1	18	18	18	17	18	18	18	18	18	18	18
		OT	ig	175	133	43	133	43	175	175	175	175	43	118	175	175	175	45	116	175	175	61	116	116
		GN	ig	33	12	21	12	21	33	33	33	33	21	12	33	33	33	21	12	33	33	21	12	12
			xlq	68	65	4	65	4	68	68	68	68	4	65	68	68	68	8	63	68	68	8	63	63
Stock (C3)				287	222	66	222	66	287	287	287	17	66	207	287	287	17	85	189	287	287	101	189	
Sector (S1)	3	LL	all	50	50		50		50	50	50	22		39	50	50	22	39		50	50	50		
		OT	ig																					
		GN	ig	20	20		20		20	20	20	20			20	20	20		20		20	20	20	
	5	LL	all	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		OT	ig	153	119	81	119	81	153	153	153	64	81	92	153	153	64	110	24	153	153	130	24	24
		GN	ig	11		11		11	11	11	11	11			11	11		11		11	11	11		
	6	LL	all	1		1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		OT	ig	6		6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		GN	ig	8		8		8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	7	LL	all	1		1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		OT	ig	79	79	1	79	1	79	79	79	74	1	20	79	79	74	15	8	79	79	74	8	8
		GN	ig	8	8		8		8	8	8	8	1		7	8	8	1	6	1	8	8	7	1
	9	LL	all	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		OT	ig	66	66	1	66	1	66	66	66	60	1	21	66	66	60	20	6	66	66	65	6	6
		GN	ig	46	1	46	1	46	46	46	46	1	46	46	46	46	1	46	46	46	46	46	46	46
	10	LL	all	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
		OT	ig	6		6		6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
		GN	ig	18	1	18	1	18	18	18	18	18	1	18	18	18	18	1	18	1	18	18	18	1
	11	LL	all	4		4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
		OT	ig	164	38	146	38	146	164	164	164	28	146	27	164	164	28	158	1	164	164	164	1	1
		GN	ig																					
12	LL	all	15		15		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	OT	ig																						
	GN	ig	99		99		99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	
13	LL	all	18	1	17	1	17	18	18	18	17	1	18	18	18	17	1	18	18	17	1	1	1	
	OT	ig	41	7	35	7	35	41	41	41	1	35	7	41	41	1	39	1	41	41	39	1	1	
	GN	ig	25	1	24	1	24	25	25	25	24	1	25	25	25	25	25	25	25	25	25	25	25	
14	LL	all	4	1	2	1	2	4	4	4	1	2	4	4	4	1	2	4	4	4	4	4	4	
	OT	ig	59	55	2	55	2	59	59	59	47	2	22	59	59	47	19	10	59	59	53	10	10	
	GN	ig																						
15	LL	all	88	87	3	87	3	88	88	88	68	3	47	88	88	68	43	17	88	88	84	17	17	
	OT	ig	59	59		59		59	59	59	14		47	59	59	14	1	47	59	59	14	47	47	
	GN	ig																						
16	LL	all	1	1		1		1	1	1			1	1	1			1	1	1	1	1	1	
	OT	ig	16	11	6	11	6	16	16	16	9	6	1	16	16	9	6	1	16	16	14	1	1	
	GN	ig																						
17	LL	all	18	15	15	15	15	18	18	18	12	15	14	18	18	12	18		18	18	18			
	OT	ig																						
	GN	ig																						
18	LL	all	1		1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	OT	ig																						
	GN	ig																						
19	LL	all	72	54	19	54	19	72	72	72	23	19	43	72	72	23	53		72	72	72			
	OT	ig	759	534	308	534	308	759	759	759	376	308	298	759	759	376	446	117	759	759	671	117	117	
	GN	ig	209	22	188	22	188	209	209	209	1	188	21	209	209	1	209		209	209	209			
20	LL	all	86	44	42	44	42	86	86	86	1	42	42	86	86	1	70	14	86	86	72	14	14	
	OT	ig																						
	GN	ig																						
Stock (S3)			1093	649	529	649	529	1093	1093	1093	398	529	391	1093	1093	398	745	131	1093	1093	991	131		

Table 4a. Number of cells with assumed discard rates, by sector and data set aggregation level. There are a total of 1360 cells in this analysis (17 sectors x 4 gear-mesh groups x 16 stocks = 1360 cells).

Sector Id	Sector Name	Sector- Gear-Mesh- Stock- specific (C1, S1)	Gear- Mesh- Stock specific (S2)	Stock- specific (C3, S3)	Total
2	Common - Groundfish	64		16	80
3	GB Cod Fixed Gear	41	31	8	80
5	Sustainable Harvest	20	52	8	80
6	Port Clyde Community		72	8	80
7	NFS VII	15	57	8	80
9	NFS VIII	15	57	8	80
10	NFS XI	26	46	8	80
11	NFS XII		72	8	80
12	NFS II	18	54	8	80
13	NFS III	39	33	8	80
15	NFS X	26	46	8	80
16	NFS XIII	15	57	8	80
17	NFS IX	17	55	8	80
18	NFS V	16	56	8	80
19	Tri-State Sector	9	63	8	80
20	NFS VI	18	54	8	80
21	NCCS		72	8	80
	Total	339	877	144	1360

Table 4b. Number of cells with assumed discard rates, by sector and data set aggregation level. There are a total of 1020 cells that correspond to Table 19 in Amendment 16.

Sector Id	Sector Name	Sector- Gear-Mesh- Stock- specific (C1, S1)	Gear- Mesh- Stock specific (S2)	Stock- specific (C3, S3)	Total
2	Common - Groundfish	50		10	60
3	GB Cod Fixed Gear	26	29	5	60
5	Sustainable Harvest	20	35	5	60
6	Port Clyde Community		55	5	60
7	NFS VII	15	40	5	60
9	NFS VIII	15	40	5	60
10	NFS XI	20	35	5	60
11	NFS XII		55	5	60
12	NFS II	18	37	5	60
13	NFS III	26	29	5	60
15	NFS X	23	32	5	60
16	NFS XIII	15	40	5	60
17	NFS IX	17	38	5	60
18	NFS V	16	39	5	60
19	Tri-State Sector	9	46	5	60
20	NFS VI	18	37	5	60
21	NCCS		55	5	60
	Total	288	642	90	1020

Table 5. Preliminary strata-specific assumed discard rates, number of observed (OB) trips, and data set used to derive the discard rates. The shaded rows are gear-stock combinations not included in Table 19 of Amendment 16.

Species	Stock	Gear	Mesh	2 Common - Groundfish			3 GB Cod Fixed Gear		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00002	18	C1	0.00002	50	S1
_ AM PLAICE	ALL	OT	lg	0.00436	175	C1	0.00647	759	S2
_ AM PLAICE	ALL	GN	lg	0.00047	33	C1	0.00009	20	S1
_ AM PLAICE	ALL	GN	xlg	0.00000	68	C1	0.00000	29	S1
_ COD	GB	LL	all	0.00340	18	C1	0.01386	50	S1
_ COD	GB	OT	lg	0.00150	133	C1	0.01234	534	S2
_ COD	GB	GN	lg	0.00000	12	C1	0.08164	20	S1
_ COD	GB	GN	xlg	0.00068	65	C1	0.00007	29	S1
_ COD	GOM	LL	all	0.07156	66	C3	0.09549	19	S2
_ COD	GOM	OT	lg	0.11268	43	C1	0.00940	308	S2
_ COD	GOM	GN	lg	0.00790	21	C1	0.01301	188	S2
_ COD	GOM	GN	xlg	0.07156	66	C3	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.04403	18	C1	0.03118	50	S1
_ HADDOCK	GB	OT	lg	0.00032	133	C1	0.00620	534	S2
_ HADDOCK	GB	GN	lg	0.00000	12	C1	0.00106	20	S1
_ HADDOCK	GB	GN	xlg	0.00002	65	C1	0.00000	29	S1
_ HADDOCK	GOM	LL	all	0.00017	66	C3	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00006	43	C1	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00023	21	C1	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00017	66	C3	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	18	C1	0.00000	50	S1
_ HALIBUT	ALL	OT	lg	0.00010	175	C1	0.00020	759	S2
x HALIBUT	ALL	GN	lg	0.00000	33	C1	0.00031	20	S1
x HALIBUT	ALL	GN	xlg	0.00008	68	C1	0.00000	29	S1
x OCEAN POUT	ALL	LL	all	0.00096	18	C1	0.00196	50	S1
_ OCEAN POUT	ALL	OT	lg	0.00238	175	C1	0.00225	759	S2
x OCEAN POUT	ALL	GN	lg	0.00000	33	C1	0.00000	20	S1
x OCEAN POUT	ALL	GN	xlg	0.00000	68	C1	0.00000	29	S1
_ POLLOCK	ALL	LL	all	0.00003	18	C1	0.00001	50	S1
_ POLLOCK	ALL	OT	lg	0.00000	175	C1	0.00062	759	S2
_ POLLOCK	ALL	GN	lg	0.00171	33	C1	0.01095	20	S1
_ POLLOCK	ALL	GN	xlg	0.00001	68	C1	0.00005	29	S1
_ REDFISH	ALL	LL	all	0.00017	18	C1	0.00008	50	S1
_ REDFISH	ALL	OT	lg	0.00031	175	C1	0.00394	759	S2
_ REDFISH	ALL	GN	lg	0.00109	33	C1	0.00076	20	S1
_ REDFISH	ALL	GN	xlg	0.00000	68	C1	0.00000	29	S1
_ WHITE HAKE	ALL	LL	all	0.00565	18	C1	0.00229	50	S1
_ WHITE HAKE	ALL	OT	lg	0.00020	175	C1	0.00057	759	S2
_ WHITE HAKE	ALL	GN	lg	0.00158	33	C1	0.00050	20	S1
_ WHITE HAKE	ALL	GN	xlg	0.00000	68	C1	0.00000	29	S1
x WINDOWPANE	NOR	LL	all	0.00000	18	C1	0.00000	50	S1
_ WINDOWPANE	NOR	OT	lg	0.01466	61	C1	0.00901	671	S2
x WINDOWPANE	NOR	GN	lg	0.00005	21	C1	0.00025	20	S1
x WINDOWPANE	NOR	GN	xlg	0.01180	101	C3	0.00000	28	S1

Species	Stock	Gear	Mesh	2 Common - Groundfish			3 GB Cod Fixed Gear		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x WINDOWPANE	SOU	LL	all	0.01151	189	C3	0.01487	131	S3
_ WINDOWPANE	SOU	OT	lg	0.01736	116	C1	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.00115	12	C1	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00000	63	C1	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00305	17	C3	0.00013	22	S1
_ WINTER FLD	GB	OT	lg	0.00307	17	C1	0.00116	376	S2
_ WINTER FLD	GB	GN	lg	0.00305	17	C3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00305	17	C3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00698	66	C3	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.01278	43	C1	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00010	21	C1	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00698	66	C3	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	18	C1	0.00000	39	S1
_ WINTER FLD	SNE	OT	lg	0.00427	118	C1	0.00238	298	S2
_ WINTER FLD	SNE	GN	lg	0.00128	12	C1	0.00099	20	S1
_ WINTER FLD	SNE	GN	xlg	0.00002	65	C1	0.00002	29	S1
x WITCH FLD	ALL	LL	all	0.00000	18	C1	0.00000	50	S1
_ WITCH FLD	ALL	OT	lg	0.00166	175	C1	0.00250	759	S2
_ WITCH FLD	ALL	GN	lg	0.00014	33	C1	0.00000	20	S1
_ WITCH FLD	ALL	GN	xlg	0.00000	68	C1	0.00002	29	S1
_ WOLFFISH	ALL	LL	all	0.00000	18	C1	0.00000	50	S1
_ WOLFFISH	ALL	OT	lg	0.00000	175	C1	0.00004	759	S2
_ WOLFFISH	ALL	GN	lg	0.00000	33	C1	0.00000	20	S1
_ WOLFFISH	ALL	GN	xlg	0.00000	68	C1	0.00000	29	S1
x YELLOWTAIL FLD	GB	LL	all	0.01422	17	C3	0.00007	22	S1
_ YELLOWTAIL FLD	GB	OT	lg	0.01431	17	C1	0.00653	376	S2
_ YELLOWTAIL FLD	GB	GN	lg	0.01422	17	C3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.01422	17	C3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	18	C1	0.00000	39	S1
_ YELLOWTAIL FLD	GOM	OT	lg	0.05618	45	C1	0.00246	446	S2
_ YELLOWTAIL FLD	GOM	GN	lg	0.00114	21	C1	0.00020	20	S1
_ YELLOWTAIL FLD	GOM	GN	xlg	0.02555	85	C3	0.00000	28	S1
x YELLOWTAIL FLD	SNE	LL	all	0.00040	189	C3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00061	116	C1	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00000	12	C1	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00001	63	C1	0.00000	14	S2

Table 5 continued.

				5 Sustainable Harvest			6 Port Clyde Community		
Species	Stock	Gear	Mesh	Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.00581	153	S1	0.00647	759	S2
_ AM PLAICE	ALL	GN	lg	0.00035	209	S2	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.01637	119	S1	0.01234	534	S2
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.09549	19	S2
_ COD	GOM	OT	lg	0.00198	81	S1	0.00940	308	S2
_ COD	GOM	GN	lg	0.01301	188	S2	0.01301	188	S2
_ COD	GOM	GN	xlg	0.01032	42	S2	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.01872	119	S1	0.00620	534	S2
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00032	81	S1	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00088	188	S2	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00022	153	S1	0.00020	759	S2
x HALIBUT	ALL	GN	lg	0.00010	209	S2	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00003	86	S2	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.00123	153	S1	0.00225	759	S2
x OCEAN POUT	ALL	GN	lg	0.00005	209	S2	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00070	153	S1	0.00062	759	S2
_ POLLOCK	ALL	GN	lg	0.01464	209	S2	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00350	153	S1	0.00394	759	S2
_ REDFISH	ALL	GN	lg	0.00153	209	S2	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00060	153	S1	0.00057	759	S2
_ WHITE HAKE	ALL	GN	lg	0.00137	209	S2	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.00264	130	S1	0.00901	671	S2
x WINDOWPANE	NOR	GN	lg	0.00011	209	S2	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2	0.00000	72	S2
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3

Species	Stock	Gear	Mesh	5 Sustainable Harvest			6 Port Clyde Community		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.06576	24	S1	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00035	64	S1	0.00116	376	S2
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.00001	81	S1	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00023	188	S2	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00157	92	S1	0.00238	298	S2
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00248	153	S1	0.00250	759	S2
_ WITCH FLD	ALL	GN	lg	0.00006	209	S2	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00002	153	S1	0.00004	759	S2
_ WOLFFISH	ALL	GN	lg	0.00008	209	S2	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00127	64	S1	0.00653	376	S2
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.00037	110	S1	0.00246	446	S2
_ YELLOWTAIL FLD	GOM	GN	lg	0.00151	209	S2	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00111	24	S1	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	7 NFS VII			9 NFS VIII		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.00566	79	S1	0.00373	66	S1
_ AM PLAICE	ALL	GN	lg	0.00035	209	S2	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.00486	79	S1	0.00647	66	S1
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.09549	19	S2
_ COD	GOM	OT	lg	0.00940	308	S2	0.00940	308	S2
_ COD	GOM	GN	lg	0.01301	188	S2	0.01301	188	S2
_ COD	GOM	GN	xlg	0.01032	42	S2	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00094	79	S1	0.00309	66	S1
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00062	308	S2	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00088	188	S2	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00020	79	S1	0.00010	66	S1
x HALIBUT	ALL	GN	lg	0.00010	209	S2	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00003	86	S2	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.00192	79	S1	0.00248	66	S1
x OCEAN POUT	ALL	GN	lg	0.00005	209	S2	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00016	79	S1	0.00015	66	S1
_ POLLOCK	ALL	GN	lg	0.01464	209	S2	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00017	79	S1	0.00041	66	S1
_ REDFISH	ALL	GN	lg	0.00153	209	S2	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00030	79	S1	0.00032	66	S1
_ WHITE HAKE	ALL	GN	lg	0.00137	209	S2	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.01677	74	S1	0.01427	65	S1
x WINDOWPANE	NOR	GN	lg	0.00011	209	S2	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2	0.00000	72	S2
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3

Species	Stock	Gear	Mesh	7 NFS VII			9 NFS VIII		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.01601	117	S2	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00214	74	S1	0.00118	60	S1
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.00078	308	S2	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00023	188	S2	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00516	20	S1	0.00028	21	S1
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00283	79	S1	0.00176	66	S1
_ WITCH FLD	ALL	GN	lg	0.00006	209	S2	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00003	79	S1	0.00013	66	S1
_ WOLFFISH	ALL	GN	lg	0.00008	209	S2	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00840	74	S1	0.00581	60	S1
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.00033	15	S1	0.00076	20	S1
_ YELLOWTAIL FLD	GOM	GN	lg	0.00151	209	S2	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00551	117	S2	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	10 NFS XI			11 NFS XII		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.00647	759	S2	0.00647	759	S2
_ AM PLAICE	ALL	GN	lg	0.00034	46	S1	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00018	18	S1	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.01234	534	S2	0.01234	534	S2
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.09549	19	S2
_ COD	GOM	OT	lg	0.00940	308	S2	0.00940	308	S2
_ COD	GOM	GN	lg	0.00672	46	S1	0.01301	188	S2
_ COD	GOM	GN	xlg	0.00642	18	S1	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00620	534	S2	0.00620	534	S2
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00062	308	S2	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00052	46	S1	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00000	18	S1	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00020	759	S2	0.00020	759	S2
x HALIBUT	ALL	GN	lg	0.00010	46	S1	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00000	18	S1	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.00225	759	S2	0.00225	759	S2
x OCEAN POUT	ALL	GN	lg	0.00000	46	S1	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00000	18	S1	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00062	759	S2	0.00062	759	S2
_ POLLOCK	ALL	GN	lg	0.02164	46	S1	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.01897	18	S1	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00394	759	S2	0.00394	759	S2
_ REDFISH	ALL	GN	lg	0.00221	46	S1	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00012	18	S1	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00057	759	S2	0.00057	759	S2
_ WHITE HAKE	ALL	GN	lg	0.00179	46	S1	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00208	18	S1	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.00901	671	S2	0.00901	671	S2
x WINDOWPANE	NOR	GN	lg	0.00000	46	S1	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	18	S1	0.00000	72	S2

Species	Stock	Gear	Mesh	10 NFS XI			11 NFS XII		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3
_ WINDOWPANE	SOU	OT	lg	0.01601	117	S2	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00116	376	S2	0.00116	376	S2
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.00078	308	S2	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00011	46	S1	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00000	18	S1	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00238	298	S2	0.00238	298	S2
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00250	759	S2	0.00250	759	S2
_ WITCH FLD	ALL	GN	lg	0.00009	46	S1	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00000	18	S1	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00004	759	S2	0.00004	759	S2
_ WOLFFISH	ALL	GN	lg	0.00014	46	S1	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	18	S1	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00653	376	S2	0.00653	376	S2
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.00246	446	S2	0.00246	446	S2
_ YELLOWTAIL FLD	GOM	GN	lg	0.00003	46	S1	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	18	S1	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00551	117	S2	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	12 NFS II			13 NFS III		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00000	15	S1
_ AM PLAICE	ALL	OT	lg	0.00456	164	S1	0.00647	759	S2
_ AM PLAICE	ALL	GN	lg	0.00035	209	S2	0.00032	99	S1
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2	0.00000	18	S1
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.01894	38	S1	0.01234	534	S2
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.14901	15	S1
_ COD	GOM	OT	lg	0.02054	146	S1	0.00940	308	S2
_ COD	GOM	GN	lg	0.01301	188	S2	0.01650	99	S1
_ COD	GOM	GN	xlg	0.01032	42	S2	0.01017	17	S1
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00335	38	S1	0.00620	534	S2
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.00104	15	S1
_ HADDOCK	GOM	OT	lg	0.00156	146	S1	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00088	188	S2	0.00141	99	S1
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2	0.00013	17	S1
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	15	S1
_ HALIBUT	ALL	OT	lg	0.00023	164	S1	0.00020	759	S2
x HALIBUT	ALL	GN	lg	0.00010	209	S2	0.00001	99	S1
x HALIBUT	ALL	GN	xlg	0.00003	86	S2	0.00110	18	S1
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00068	15	S1
_ OCEAN POUT	ALL	OT	lg	0.00036	164	S1	0.00225	759	S2
x OCEAN POUT	ALL	GN	lg	0.00005	209	S2	0.00011	99	S1
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2	0.00000	18	S1
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00000	15	S1
_ POLLOCK	ALL	OT	lg	0.00200	164	S1	0.00062	759	S2
_ POLLOCK	ALL	GN	lg	0.01464	209	S2	0.00913	99	S1
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2	0.00262	18	S1
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00059	15	S1
_ REDFISH	ALL	OT	lg	0.01726	164	S1	0.00394	759	S2
_ REDFISH	ALL	GN	lg	0.00153	209	S2	0.00114	99	S1
_ REDFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	18	S1
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00000	15	S1
_ WHITE HAKE	ALL	OT	lg	0.00048	164	S1	0.00057	759	S2
_ WHITE HAKE	ALL	GN	lg	0.00137	209	S2	0.00092	99	S1
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2	0.00000	18	S1
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	15	S1
_ WINDOWPANE	NOR	OT	lg	0.00336	164	S1	0.00901	671	S2
x WINDOWPANE	NOR	GN	lg	0.00011	209	S2	0.00008	99	S1
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2	0.00000	17	S1
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3

Species	Stock	Gear	Mesh	12 NFS II			13 NFS III		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.01601	117	S2	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00003	28	S1	0.00116	376	S2
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	15	S1
_ WINTER FLD	GOM	OT	lg	0.00089	146	S1	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00023	188	S2	0.00016	99	S1
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2	0.00000	17	S1
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00000	27	S1	0.00238	298	S2
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	15	S1
_ WITCH FLD	ALL	OT	lg	0.00189	164	S1	0.00250	759	S2
_ WITCH FLD	ALL	GN	lg	0.00006	209	S2	0.00003	99	S1
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2	0.00000	18	S1
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00036	15	S1
_ WOLFFISH	ALL	OT	lg	0.00002	164	S1	0.00004	759	S2
_ WOLFFISH	ALL	GN	lg	0.00008	209	S2	0.00000	99	S1
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	18	S1
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00077	28	S1	0.00653	376	S2
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	15	S1
_ YELLOWTAIL FLD	GOM	OT	lg	0.00413	158	S1	0.00246	446	S2
_ YELLOWTAIL FLD	GOM	GN	lg	0.00151	209	S2	0.00336	99	S1
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2	0.00000	17	S1
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00551	117	S2	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	15 NFS X			16 NFS XIII		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.01224	41	S1	0.01322	59	S1
_ AM PLAICE	ALL	GN	lg	0.00013	25	S1	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.01234	534	S2	0.01798	55	S1
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.09549	19	S2
_ COD	GOM	OT	lg	0.09166	35	S1	0.00940	308	S2
_ COD	GOM	GN	lg	0.04178	24	S1	0.01301	188	S2
_ COD	GOM	GN	xlg	0.01032	42	S2	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00620	534	S2	0.00530	55	S1
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00000	35	S1	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00019	24	S1	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00000	41	S1	0.00040	59	S1
x HALIBUT	ALL	GN	lg	0.00033	25	S1	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00003	86	S2	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.02918	41	S1	0.00697	59	S1
x OCEAN POUT	ALL	GN	lg	0.00026	25	S1	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00000	41	S1	0.00020	59	S1
_ POLLOCK	ALL	GN	lg	0.00228	25	S1	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00004	41	S1	0.00093	59	S1
_ REDFISH	ALL	GN	lg	0.00007	25	S1	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00000	41	S1	0.00098	59	S1
_ WHITE HAKE	ALL	GN	lg	0.00009	25	S1	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.04578	39	S1	0.00949	53	S1
x WINDOWPANE	NOR	GN	lg	0.00223	25	S1	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2	0.00000	72	S2
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3

Species	Stock	Gear	Mesh	15 NFS X			16 NFS XIII		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.01601	117	S2	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00116	376	S2	0.00119	47	S1
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.02680	35	S1	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00189	24	S1	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00238	298	S2	0.00023	22	S1
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00083	41	S1	0.00274	59	S1
_ WITCH FLD	ALL	GN	lg	0.00007	25	S1	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00000	41	S1	0.00000	59	S1
_ WOLFFISH	ALL	GN	lg	0.00000	25	S1	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00653	376	S2	0.00945	47	S1
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.07876	39	S1	0.00025	19	S1
_ YELLOWTAIL FLD	GOM	GN	lg	0.01309	25	S1	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00551	117	S2	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	17 NFS IX			18 NFS V		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.00284	88	S1	0.01047	59	S1
_ AM PLAICE	ALL	GN	lg	0.00035	209	S2	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.01761	87	S1	0.00275	59	S1
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.09549	19	S2
_ COD	GOM	OT	lg	0.00940	308	S2	0.00940	308	S2
_ COD	GOM	GN	lg	0.01301	188	S2	0.01301	188	S2
_ COD	GOM	GN	xlg	0.01032	42	S2	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00533	87	S1	0.00020	59	S1
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00062	308	S2	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00088	188	S2	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00010	88	S1	0.00001	59	S1
x HALIBUT	ALL	GN	lg	0.00010	209	S2	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00003	86	S2	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.00187	88	S1	0.00317	59	S1
x OCEAN POUT	ALL	GN	lg	0.00005	209	S2	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00028	88	S1	0.00000	59	S1
_ POLLOCK	ALL	GN	lg	0.01464	209	S2	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00157	88	S1	0.00008	59	S1
_ REDFISH	ALL	GN	lg	0.00153	209	S2	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00067	88	S1	0.00026	59	S1
_ WHITE HAKE	ALL	GN	lg	0.00137	209	S2	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.01214	84	S1	0.00746	14	S1
x WINDOWPANE	NOR	GN	lg	0.00011	209	S2	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2	0.00000	72	S2
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3

Species	Stock	Gear	Mesh	17 NFS IX			18 NFS V		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.00210	17	S1	0.01444	47	S1
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00074	68	S1	0.00101	14	S1
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.00078	308	S2	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00023	188	S2	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00493	47	S1	0.00557	47	S1
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00200	88	S1	0.00293	59	S1
_ WITCH FLD	ALL	GN	lg	0.00006	209	S2	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00005	88	S1	0.00000	59	S1
_ WOLFFISH	ALL	GN	lg	0.00008	209	S2	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00469	68	S1	0.01162	14	S1
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.00305	43	S1	0.00246	446	S2
_ YELLOWTAIL FLD	GOM	GN	lg	0.00151	209	S2	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00126	17	S1	0.00430	47	S1
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	19 Tri-State Sector			20 NFS VI		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.04492	16	S1	0.00831	18	S1
_ AM PLAICE	ALL	GN	lg	0.00035	209	S2	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2	0.01301	54	S2
_ COD	GB	OT	lg	0.01234	534	S2	0.00662	15	S1
_ COD	GB	GN	lg	0.07302	22	S2	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2	0.09549	19	S2
_ COD	GOM	OT	lg	0.00940	308	S2	0.00058	15	S1
_ COD	GOM	GN	lg	0.01301	188	S2	0.01301	188	S2
_ COD	GOM	GN	xlg	0.01032	42	S2	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00620	534	S2	0.00117	15	S1
_ HADDOCK	GB	GN	lg	0.00096	22	S2	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00062	308	S2	0.00006	15	S1
_ HADDOCK	GOM	GN	lg	0.00088	188	S2	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00008	16	S1	0.00034	18	S1
x HALIBUT	ALL	GN	lg	0.00010	209	S2	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00003	86	S2	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.01871	16	S1	0.00055	18	S1
x OCEAN POUT	ALL	GN	lg	0.00005	209	S2	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00000	16	S1	0.00274	18	S1
_ POLLOCK	ALL	GN	lg	0.01464	209	S2	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00002	16	S1	0.01889	18	S1
_ REDFISH	ALL	GN	lg	0.00153	209	S2	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00223	16	S1	0.00124	18	S1
_ WHITE HAKE	ALL	GN	lg	0.00137	209	S2	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.03454	14	S1	0.00492	18	S1
x WINDOWPANE	NOR	GN	lg	0.00011	209	S2	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2	0.00000	72	S2
x WINDOWPANE	SOU	LL	all	0.01487	131	S3	0.01487	131	S3

Species	Stock	Gear	Mesh	19 Tri-State Sector			20 NFS VI		
				Disc Rate	OB Trips	Data Set	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.01601	117	S2	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00116	376	S2	0.00068	12	S1
_ WINTER FLD	GB	GN	lg	0.00114	398	S3	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.00078	308	S2	0.00026	15	S1
_ WINTER FLD	GOM	GN	lg	0.00023	188	S2	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00238	298	S2	0.00000	14	S1
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00966	16	S1	0.00257	18	S1
_ WITCH FLD	ALL	GN	lg	0.00006	209	S2	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00031	16	S1	0.00000	18	S1
_ WOLFFISH	ALL	GN	lg	0.00008	209	S2	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00653	376	S2	0.00225	12	S1
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.00246	446	S2	0.00006	18	S1
_ YELLOWTAIL FLD	GOM	GN	lg	0.00151	209	S2	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00551	117	S2	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2	0.00000	14	S2

Table 5 continued.

Species	Stock	Gear	Mesh	21 NCCS		
				Disc Rate	OB Trips	Data Set
x AM PLAICE	ALL	LL	all	0.00001	72	S2
_ AM PLAICE	ALL	OT	lg	0.00647	759	S2
_ AM PLAICE	ALL	GN	lg	0.00035	209	S2
_ AM PLAICE	ALL	GN	xlg	0.00001	86	S2
_ COD	GB	LL	all	0.01301	54	S2
_ COD	GB	OT	lg	0.01234	534	S2
_ COD	GB	GN	lg	0.07302	22	S2
_ COD	GB	GN	xlg	0.00030	44	S2
_ COD	GOM	LL	all	0.09549	19	S2
_ COD	GOM	OT	lg	0.00940	308	S2
_ COD	GOM	GN	lg	0.01301	188	S2
_ COD	GOM	GN	xlg	0.01032	42	S2
_ HADDOCK	GB	LL	all	0.03315	54	S2
_ HADDOCK	GB	OT	lg	0.00620	534	S2
_ HADDOCK	GB	GN	lg	0.00096	22	S2
_ HADDOCK	GB	GN	xlg	0.00002	44	S2
_ HADDOCK	GOM	LL	all	0.02629	19	S2
_ HADDOCK	GOM	OT	lg	0.00062	308	S2
_ HADDOCK	GOM	GN	lg	0.00088	188	S2
_ HADDOCK	GOM	GN	xlg	0.00007	42	S2
x HALIBUT	ALL	LL	all	0.00000	72	S2
_ HALIBUT	ALL	OT	lg	0.00020	759	S2
x HALIBUT	ALL	GN	lg	0.00010	209	S2
x HALIBUT	ALL	GN	xlg	0.00003	86	S2
x OCEAN POUT	ALL	LL	all	0.00176	72	S2
_ OCEAN POUT	ALL	OT	lg	0.00225	759	S2
x OCEAN POUT	ALL	GN	lg	0.00005	209	S2
x OCEAN POUT	ALL	GN	xlg	0.00001	86	S2
_ POLLOCK	ALL	LL	all	0.00001	72	S2
_ POLLOCK	ALL	OT	lg	0.00062	759	S2
_ POLLOCK	ALL	GN	lg	0.01464	209	S2
_ POLLOCK	ALL	GN	xlg	0.00081	86	S2
_ REDFISH	ALL	LL	all	0.00009	72	S2
_ REDFISH	ALL	OT	lg	0.00394	759	S2
_ REDFISH	ALL	GN	lg	0.00153	209	S2
_ REDFISH	ALL	GN	xlg	0.00000	86	S2
_ WHITE HAKE	ALL	LL	all	0.00282	72	S2
_ WHITE HAKE	ALL	OT	lg	0.00057	759	S2
_ WHITE HAKE	ALL	GN	lg	0.00137	209	S2
_ WHITE HAKE	ALL	GN	xlg	0.00021	86	S2
x WINDOWPANE	NOR	LL	all	0.00000	72	S2
_ WINDOWPANE	NOR	OT	lg	0.00901	671	S2
x WINDOWPANE	NOR	GN	lg	0.00011	209	S2
x WINDOWPANE	NOR	GN	xlg	0.00000	72	S2
x WINDOWPANE	SOU	LL	all	0.01487	131	S3

				21 NCCS		
Species	Stock	Gear	Mesh	Disc Rate	OB Trips	Data Set
_ WINDOWPANE	SOU	OT	lg	0.01601	117	S2
x WINDOWPANE	SOU	GN	lg	0.01487	131	S3
x WINDOWPANE	SOU	GN	xlg	0.00001	14	S2
x WINTER FLD	GB	LL	all	0.00013	23	S2
_ WINTER FLD	GB	OT	lg	0.00116	376	S2
_ WINTER FLD	GB	GN	lg	0.00114	398	S3
_ WINTER FLD	GB	GN	xlg	0.00114	398	S3
x WINTER FLD	GOM	LL	all	0.00000	19	S2
_ WINTER FLD	GOM	OT	lg	0.00078	308	S2
_ WINTER FLD	GOM	GN	lg	0.00023	188	S2
_ WINTER FLD	GOM	GN	xlg	0.00079	42	S2
x WINTER FLD	SNE	LL	all	0.00000	43	S2
_ WINTER FLD	SNE	OT	lg	0.00238	298	S2
_ WINTER FLD	SNE	GN	lg	0.00151	21	S2
_ WINTER FLD	SNE	GN	xlg	0.00002	42	S2
x WITCH FLD	ALL	LL	all	0.00000	72	S2
_ WITCH FLD	ALL	OT	lg	0.00250	759	S2
_ WITCH FLD	ALL	GN	lg	0.00006	209	S2
_ WITCH FLD	ALL	GN	xlg	0.00001	86	S2
_ WOLFFISH	ALL	LL	all	0.00002	72	S2
_ WOLFFISH	ALL	OT	lg	0.00004	759	S2
_ WOLFFISH	ALL	GN	lg	0.00008	209	S2
_ WOLFFISH	ALL	GN	xlg	0.00000	86	S2
x YELLOWTAIL FLD	GB	LL	all	0.00007	23	S2
_ YELLOWTAIL FLD	GB	OT	lg	0.00653	376	S2
_ YELLOWTAIL FLD	GB	GN	lg	0.00638	398	S3
_ YELLOWTAIL FLD	GB	GN	xlg	0.00638	398	S3
x YELLOWTAIL FLD	GOM	LL	all	0.00000	53	S2
_ YELLOWTAIL FLD	GOM	OT	lg	0.00246	446	S2
_ YELLOWTAIL FLD	GOM	GN	lg	0.00151	209	S2
_ YELLOWTAIL FLD	GOM	GN	xlg	0.00000	70	S2
x YELLOWTAIL FLD	SNE	LL	all	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	OT	lg	0.00551	117	S2
_ YELLOWTAIL FLD	SNE	GN	lg	0.00520	131	S3
_ YELLOWTAIL FLD	SNE	GN	xlg	0.00000	14	S2

Appendix Table 1. List of sectors (including the common pool), sector names, and number of permits.

Sector Id	Sector name	Number of permits
2	Common - Groundfish	565
3	GB Cod Fixed Gear	91
5	Sustainable Harvest	127
6	Port Clyde Community	43
7	NFS VII	27
8	NFS IV	48
9	NFS VIII	22
10	NFS XI	48
11	NFS XII	8
12	NFS II	79
13	NFS III	80
15	NFS X	42
16	NFS XIII	34
17	NFS IX	50
18	NFS V	40
19	Tri-State Sector	22
20	NFS VI	18
21	NCCS	19

Appendix A. Relevant Amendment 16 Assumed Discard Text for Sectors and Common Pool

For Sectors: **taken from** Northeast Multispecies FMP Amendment 16, October 16, 2009
Pages 109-110 (NEFMC 2009)

“Assumed discard rates will be applied to sectors unless an at-sea monitoring system (such as a sector’s independent monitoring program, a federal monitoring program, or other program that NMFS determines is adequate) provides accurate information for use of actual discard rates. Sector operations plans must provide detailed information about how discards in the fishery will be monitored, reported, and enforced within the sector.

- *Discards will not be counted when determining the sector’s ACE/permit PSCs but will be counted against the ACE during the fishing year. When data is available from an adequate atsea monitoring program (such as a federal observer program, a sector provided program, or other program that NMFS determines is adequate), in-season discard rates will be determined using a procedure specified by NMFS.*
- *A sector must develop an adequate monitoring system and demonstrate to NMFS that discards can be accurately monitored and counted as part of the ACE, at the sector’s expense, by FY 2012. Details about such a monitoring system must be provided in the sector’s operations plan. This system will enable the sector to deduct annual discards from the ACE instead of using assumed discard rates.*
- *Discard rates used if data from an adequate at-sea monitoring program is not available will be determined using a sector-specific discard rate. A sector-specific discard rate will be calculated for each stock and gear based on observer data from the previous year. If NMFS determines there are insufficient data to estimate discard rates at this fine of a scale, the fleetwide stock and gear discard rate would be used for those sector-gear combinations. When calculating discard rates, regulatory discards of legal-sized fish caused by trip limits will be excluded.*
- *Assumed discards will be calculated for the gear/species combinations shown in Table 19. If other discards are observed they will be counted against sector ACE regardless of whether the specific gear/species combination is listed in this table. While it is possible that discards may be observed with other gear/species combinations shown in Table 19, the absence of data makes it impossible to develop an assumed discard rate and apply it to landings. This is an element of uncertainty that should be considered in setting sector ACLs.*
- *Discards will be counted at the previous assumed discard rate, calculated as often as is practicable, by gear. The calculated discard rate will be used to add a discard estimate to each landing by sector vessels so that total catch can be determined for each trip.*
- *If a trip is observed, the discards reported by the observer or at-sea monitor on that trip will be counted as the discards for that trip. Unobserved trips will use a discard estimate calculated from the observed trips.*

Other requirements of sector monitoring plans may be implemented as directed by the Regional Administrator. The exact details of sector monitoring plans will be included in the sector’s operations plan, and NMFS will approve the monitoring plan as part of the review of the operations plan.”

For Common Pool: **taken from** Northeast Multispecies FMP Amendment 16, October 16, 2009
Pages 124-125 (NEFMC 2009)

“Discards will be typically applied only for those combinations of species and gear where discards are expected.

Table 19 – Discard estimates will be applied to the species/gear combinations show

<i>Gear</i>	<i>Species</i>
<i>Trawl</i>	<i>All</i>
<i>Gillnet</i>	<i>Cod, haddock, pollock, white hake, yellowtail flounder, winter flounder, witch flounder, American plaice, redfish, Atlantic wolffish</i>
<i>Longline</i>	<i>Cod, haddock, pollock, white hake, redfish, Atlantic wolffish</i>

A discard rate will be calculated for each stock and gear based on observer data from the previous year by vessels that are not in sectors. If NMFS determines that there are insufficient data to estimate discard rates at this fine a scale, the fleet-wide stock and gear discard rate will be used for those stock-gear combinations. If NMFS determines there is sufficient data to determine inseason discard rates, such data will be used in place of an assumed rate that is based on the previous year’s data.”