

APPENDIX A

Methods to Analyze the Category B (regular) DAS Pilot Program

Framework 40A proposes a pilot program where a limited number of regular B DAS would be used (a maximum of 2000) subject to prescribed trip limits and a hard TAC on the incidental catches of stocks of concern. Heretofore, PDT advice has been that the ability to evaluate how and in what manner regular B DAS fisheries might develop is difficult to predict. Nothing in the following should be construed as changing this position since adjustments to fishing practices cannot be predicted. However, based on the specific conditions proposed for Framework 40A makes it possible to at least identify trips that meet all of the proposed trip limits and evaluate the extent to which such reported trips form identifiable fisheries that may be likely candidates for use of regular B DAS.

To develop an initial data set, VTR records from FY2001 were queried to identify trips that met the following criteria:

- Limited access permit holder
- At least one pound of regulated groundfish was kept
- Reported landings per day absent was less than or equal to the following 25 pounds per DA of each CCGOM yellowtail flounder and SNE/MA yellowtail flounder and less than or equal to 100 pounds per DA each of SNE/MA winter flounder, GOM cod, GB cod, American plaice, witch flounder, and white hake (note that days absent from the VTR was rounded up to the nearest whole day consistent with the proposed measure)
- Gear used was limited to otter trawl, sink gillnet, bottom longline, or hook and line
- Reported mesh size for otter trawl and gillnet gears was at least 6-inches (the minimum mesh required for FY2001)

Based on this initial query a total of 4,102 trips were identified. Landed pounds for the following species were identified: all 10 regulated groundfish plus monkfish, bluefish, butterfish, cusk, summer flounder, scup, black sea bass, dogfish, skates, silver hake, red hake, wolfish, lobster, scallops, squids, and all other species combined. The data were subdivided into gears (hook i.e. hand line, bottom longline, sink gillnet, and otter trawl) and generic stock areas defined as follows; GOM = statistical areas (510, 511, 512, 513, 514, 515) GB = statistical areas (520, 521, 522, 525, 526, 561, 562, 541, 542, 543) and SNE/MA was defined as statistical areas (533, 534, 537, 538, 539 and all area 600 and above).

The combined pounds of all stocks of concern as a percent of total weight of all fish on board are plotted for each gear/stock area combination in Figure 53 through Figure 63. Among these gear/stock combinations there are notable differences both in terms of the total number of “qualifying” trips and the distribution of the contribution of stocks of concern to total landings. For example, only 88 qualifying trips were reported by vessels using hook gear in the GOM (Figure 43). Of these trips, the majority were trips where stocks of concern comprised most of the landings even though landings per DA were still under all required trip limits. The same may be said of hook gear on GB (Figure 44) as well as bottom longline gear in the GOM, GB and in SNE/MA (Figure 45 through Figure 47 respectively). The relatively high proportion of stocks of concern, principally GB and GOM cod, in these four gear/area combinations raise issues concerning the desirability of allowing the use of regular B DAS on trips that are directed on stocks of concern since these trips may represent the lower end of the landings distribution (i.e. busted or poor trips) of a directed cod fishery. Even though the possibility would exist to “flip” the regular B to an A DAS, doing so has been suggested as being a regular B DAS “failure.” Flipping DAS in the context of the limited pilot proposal for this Framework may also prove to be problematic in terms of monitoring the cap on DAS use and the incidental catch TACs.

Unlike the gear/area combinations noted above, the remaining combinations (Figure 48 – Figure 52) indicate that over the range of trips represented in the data there were a substantial number of occasions

where stocks of concern were clearly incidental to the trip. To further explore the composition of these trips, the data were trimmed by deleting any record where the combined landed weight of all stocks of concern was less than or equal to 20% of total weight of fish on board; yielding a total of 2,195 trip records.

Potential regular B DAS fisheries were identified by initially plotting each trip, sorted by the percent of cod on board, using a 100 percent area chart in EXCEL. Sorted in this manner trips of similar composition appear as bands of colors which facilitates identification of potential “fisheries.” After an initial inspection of the chart species that were landed on very few trips or that individually comprised a very low proportion of landings were aggregated into an “other” category. Finally, to facilitate presentation and visual inspection of the chart, data were resorted to improve the ability to identify similarities across trips.

Gulf of Maine Trawl - Based on FY2001 data there were a total of 321 trips that took place inside the Gulf of Maine where landings of stocks of concern were 20% or less of total landed weight. These trips clustered into four clusters of similar landings composition; skates/winter flounder, monkfish/plaice/winter flounder, winter flounder, and mixed trawl (Figure 53). Of these four clusters the skate/winter flounder and winter flounder clusters seem to be the most likely candidates or provide the most likely opportunity to use a regular B DAS in the GOM with low interactions with stocks of concern. The monkfish/winter flounder/plaice cluster also seems to be relatively distinct but only represents about 12 trips.

Since the proposed pilot program would be in effect only during the third and fourth quarters of FY2004 the GOM trawl data were further trimmed to include only trips that took place from November through April. Even though this trimming removed nearly two-thirds of reported trips the clustering of data still indicates that the skate/winter flounder and winter flounder clusters noted above persist (Figure 54).

Georges Bank Trawl – The Georges Bank trawl data does not separate into as distinct a set of clusters compared to the GOM trawl data although a substantial number of trips are comprised almost entirely of yellowtail flounder with small amounts of winter flounder, skates and monkfish (Figure 55). This approximate mix of species persists with declining proportions of yellowtail flounder for at least half of the 215 GB trawl trips with 20% or less incidental landings of species of concern. As the proportion of yellowtail falls below 50% the species composition is dominated by a combination of winter flounder, skates, and monkfish. The data also indicates that some vessels were able to fish almost exclusively on haddock with some incidental landings of cod although the number of such occasions was small. Note that the general composition of landings in quarter 3 and 4 (Figure 56) is quite similar to that for the entire fishing year except that the relative importance of winter flounder figures is less prominent.

Southern New England/Mid-Atlantic Trawl – There were almost 800 trips using trawl gear in the SNE/MA area by limited access multispecies permit holders that used at least six-inch mesh (Figure 57). These trips clustered into three components; 1) a skate fishery with incidental landings of summer flounder, winter flounder and windowpane flounder, 2) a summer flounder fishery with incidental landings of winter flounder, windowpane flounder, and monkfish, and 3) a mixed trawl fishery with varying proportions of many different species. These findings indicate that there may be opportunities to use regular B DAS in the SNE/MA area in a skate fishery and in a mixed flatfish fishery where summer flounder was the primary target. These general findings also hold for quarter 2 and 3 although the number of trips taken in FY2001 from November through April was less than one-third of total trips throughout the entire fishing year (Figure 58).

Gulf of Maine Gillnet – The dominant gillnet fishery in the Gulf of Maine with minimal incidental landings of stocks of concern is the directed monkfish fishery (Figure 59). For all but 76 of the 558

reported trips monkfish was at least 50% of total trip weight. Many of these trips did report incidental amounts of cod but the largest reported landing was less than 600 pounds with the majority of records being less than 100 pounds. In addition to the monkfish fishery there were a small number of trips that landed almost exclusively pollock, dogfish, or haddock or these species were landed in varying combinations. As was the case for other gear/area combinations the majority (almost 75%) of qualifying GOM gillnet trips were taken before quarters 3 and 4. However, as was also the case previously, the clusters of “fisheries” in quarters 3 and 4 are similar to that of the entire fishing year (Figure 60).

Georges Bank Gillnet – In FY2001 the dominant fishery using gillnet gear on Georges Bank with low incidence of stocks of concern was a monkfish/skate fishery where some trips were clearly directed monkfish or directed skate trips while others were combined monkfish/skate trips (Figure 61). This species composition was also evident in quarters 3 and 4 of FY2001 although there were about one-third as many trips (Figure 62).

Southern New England/Mid-Atlantic Gillnet – The composition of landings by vessels using gillnet gear in the SNE/MA statistical areas was nearly identical to that of vessels using gillnet gear on Georges Bank. The dominant species mix was monkfish/skates with a small number of trips where summer flounder comprised the majority of landings (Figure 63). As was the case above, the composition of trips in this area was no different during quarters 3 and 4 (Figure 64) as compared to the entire fishing year.

Summary

Based on the data from fishing year 2001 there do appear to be fisheries that were prosecuted in that year that would have required using a groundfish DAS yet had low incidence of stocks of concern. These fisheries (summarized in Table 97) may be likely fisheries where a regular B DAS may be used with a low probability of flipping to an A DAS.

	Otter Trawl	Gillnet
Gulf of Maine	skate/winter flounder winter flounder	monkfish
Georges Bank	yellowtail yellowtail/winter/monkfish/skates winter/monkfish/skates	monkfish skates monkfish/skates
Southern New England/Mid-Atlantic	skates skates/fluke fluke/monkfish	monkfish skates monkfish/skates

Table 97 - Summary of Potential Regular B DAS Fisheries by Area and Gear

Figure 1. Percent of Stocks of Concern of Total Landed Weight (GOM Hook)

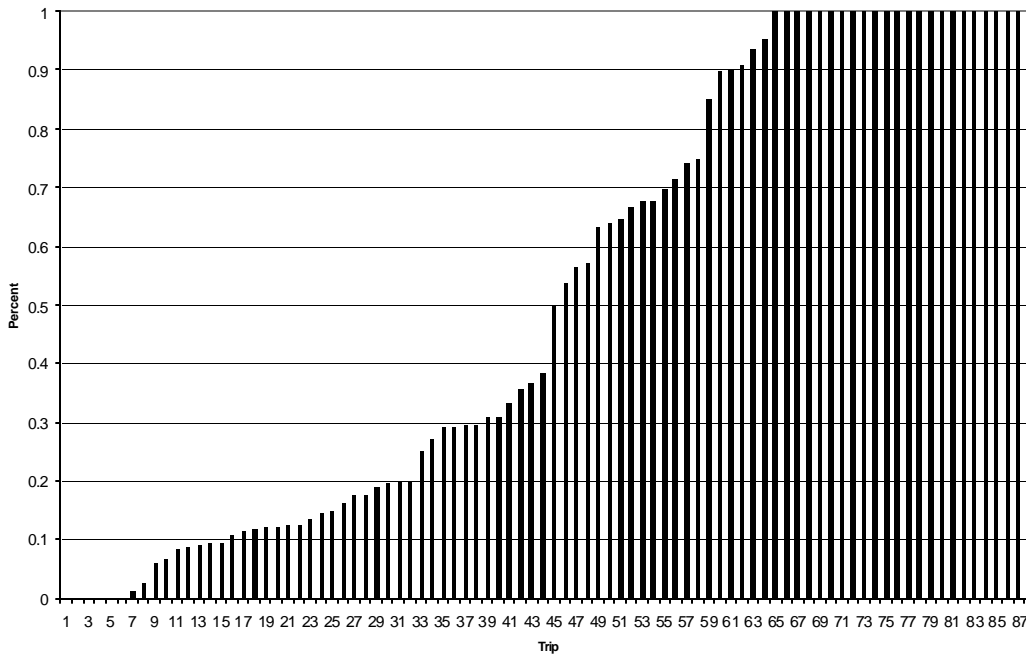


Figure 43– GOM hook: percent of total landed weight of stocks of concern

Figure 2. Percent of Stocks of Concern of Total Landed Weight (GB Hook)

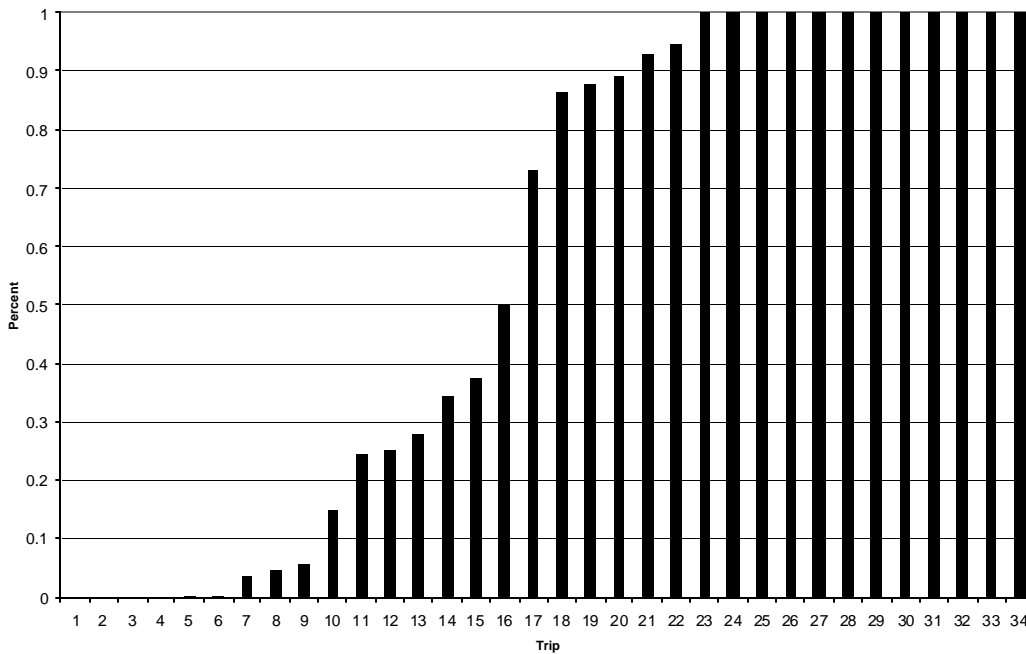


Figure 44 – GB hook: percent of total landed weight of stocks of concern

Figure 3. Percent of Stocks of Concern of Total Landed Weight (GOM Longline)

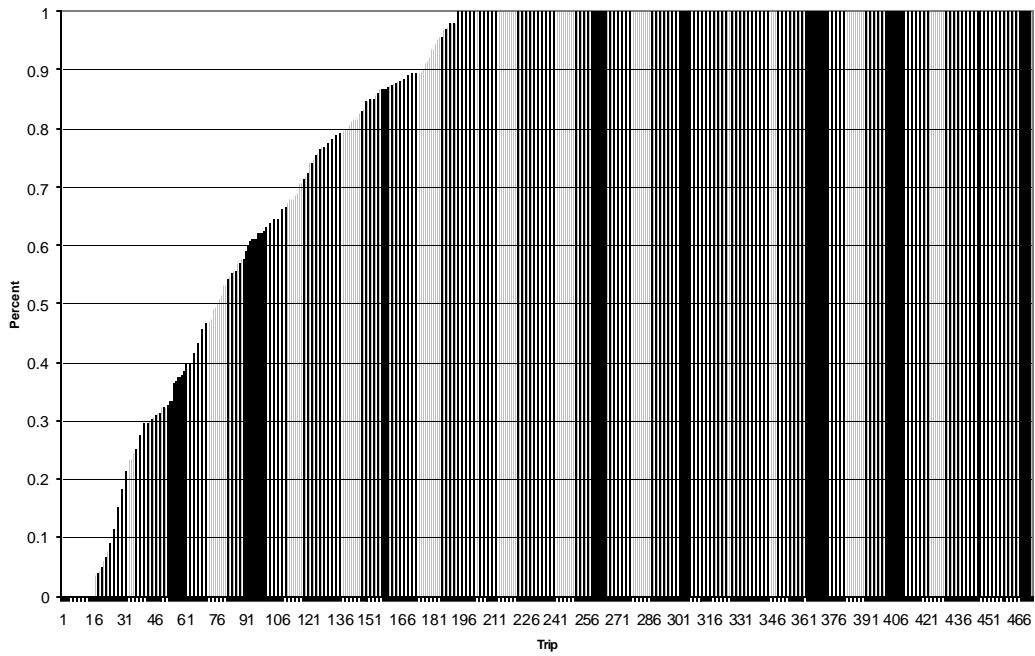


Figure 45 – GOM longline: percent of total landed weight of stock of concern

Figure 4. Percent of Stocks of Concern of Total Landed Weight (GB Longline)

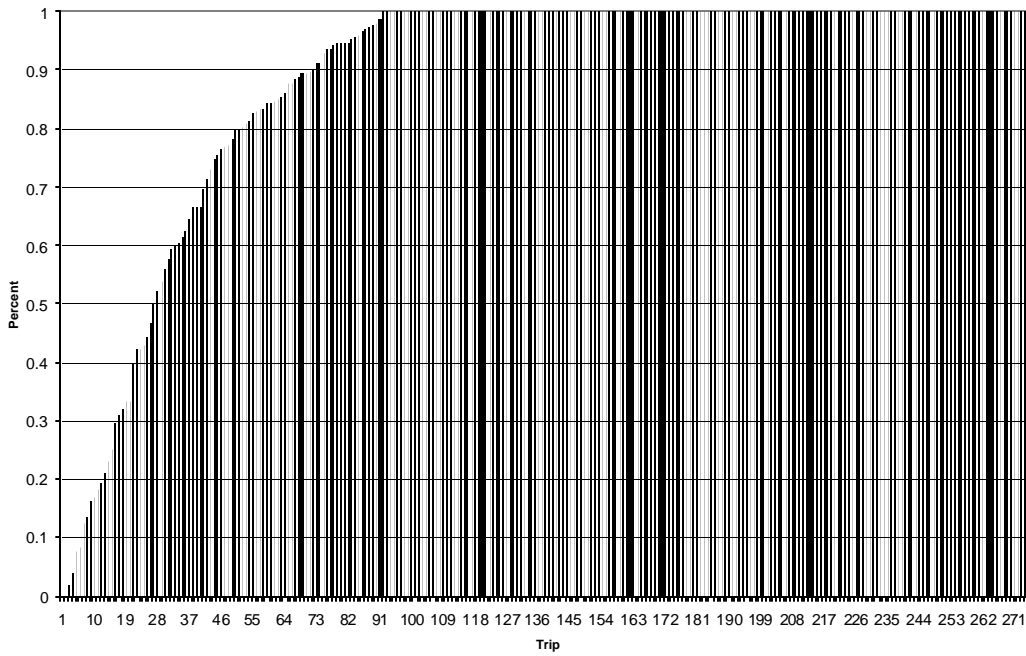


Figure 46 – GB longline: percent of total landed weight of stocks of concern

Figure 5. Percent of Stocks of Concern of Total Landed Weight (SNE/MA Longline)

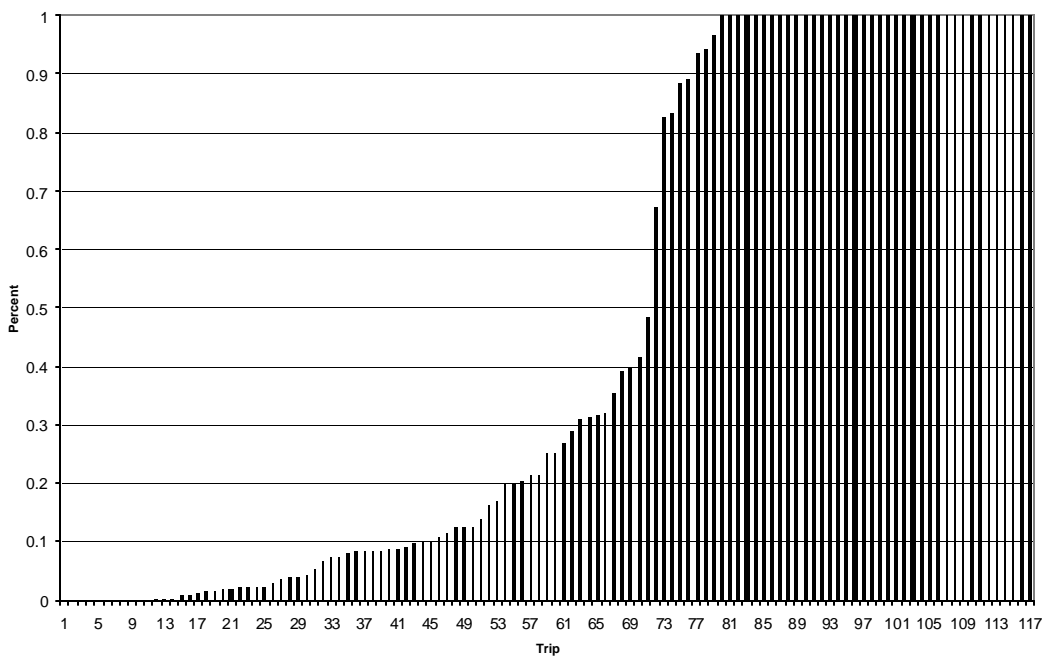


Figure 47 – SNE/MA longline: percent of total landed weight of stocks of concern

Figure 6. Percent of Stocks of Concern of Total Landed Weight (GOM Trawl)

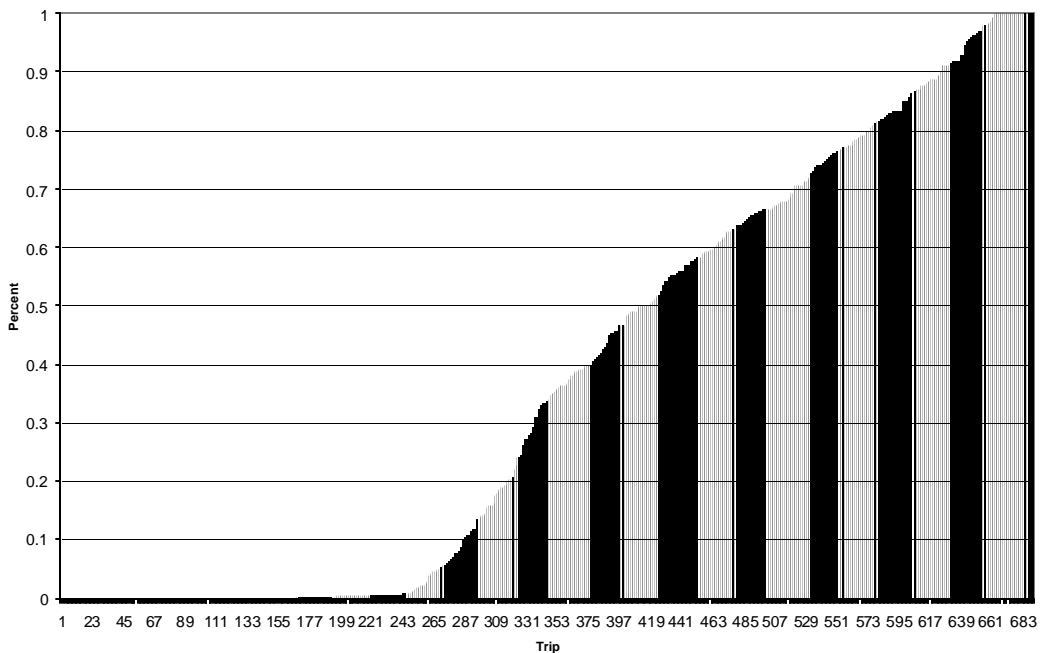


Figure 48 – GOM trawl: percent of total landed weight of stocks of concern

Figure 8. Percent of Stocks of Concern of Total Landed Weight (SNE Trawl)

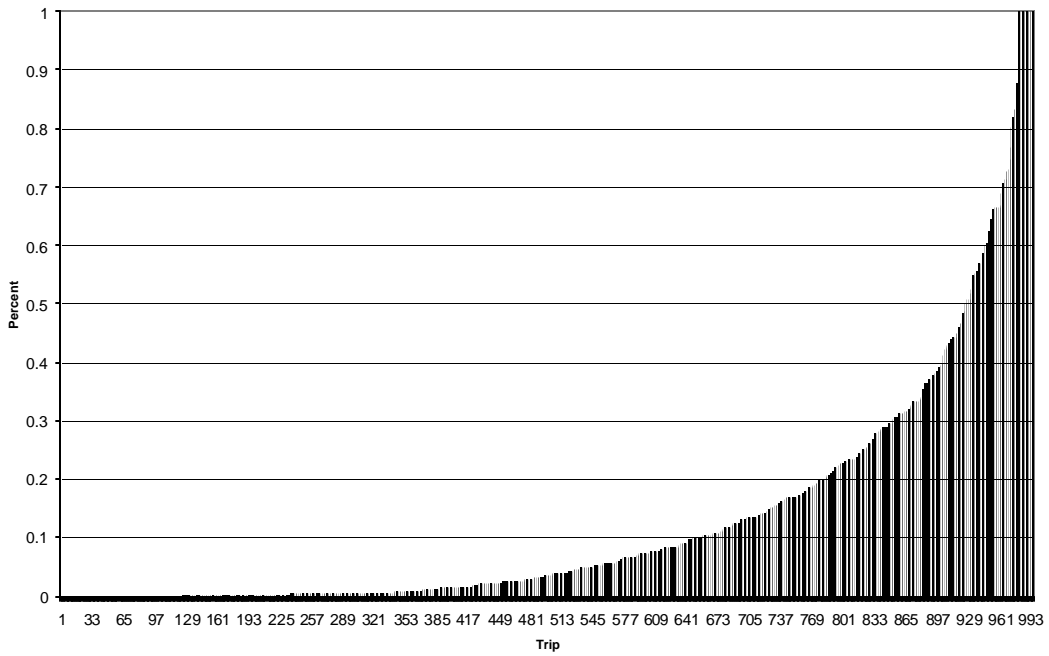


Figure 49 – SNE trawl: percent of total landed weight of stocks of concern

Figure 9. Percent of Stocks of Concern of Total Landed Weight (GOM Gillnet)

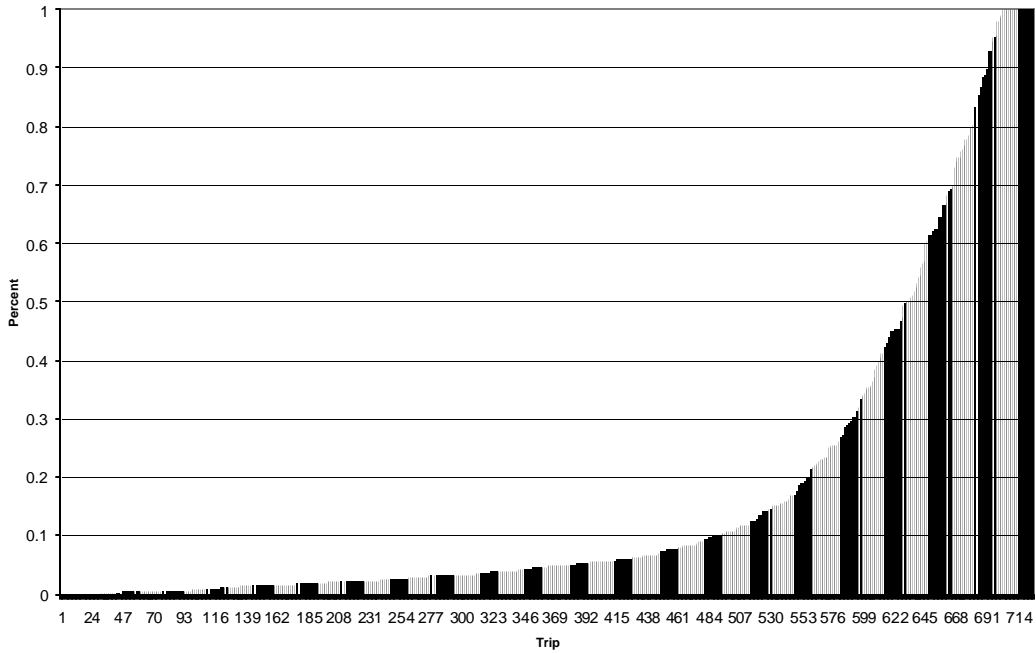


Figure 50 – GOM gillnet: percent of total landed weight of stocks of concern

Figure 10. Percent of Stocks of Concern of Total Landed Weight (GB Gillnet)

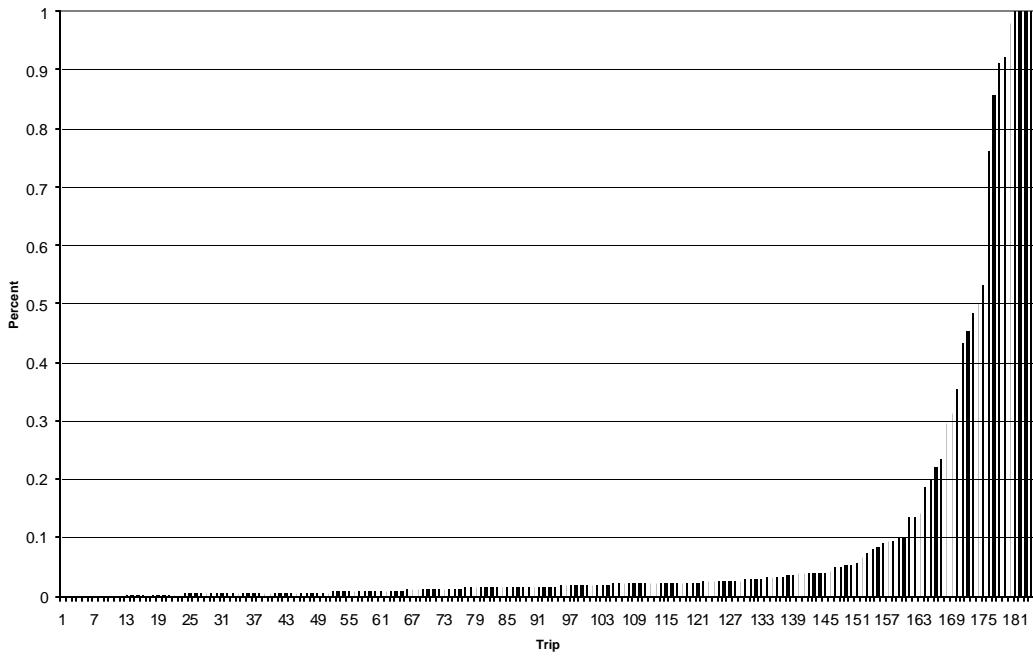


Figure 51 – GB gillnet: percent of total landed weight of stocks of concern

Figure 11. Percent of Stocks of Concern of Total Landed Weight (SNE/MA Gillnet)

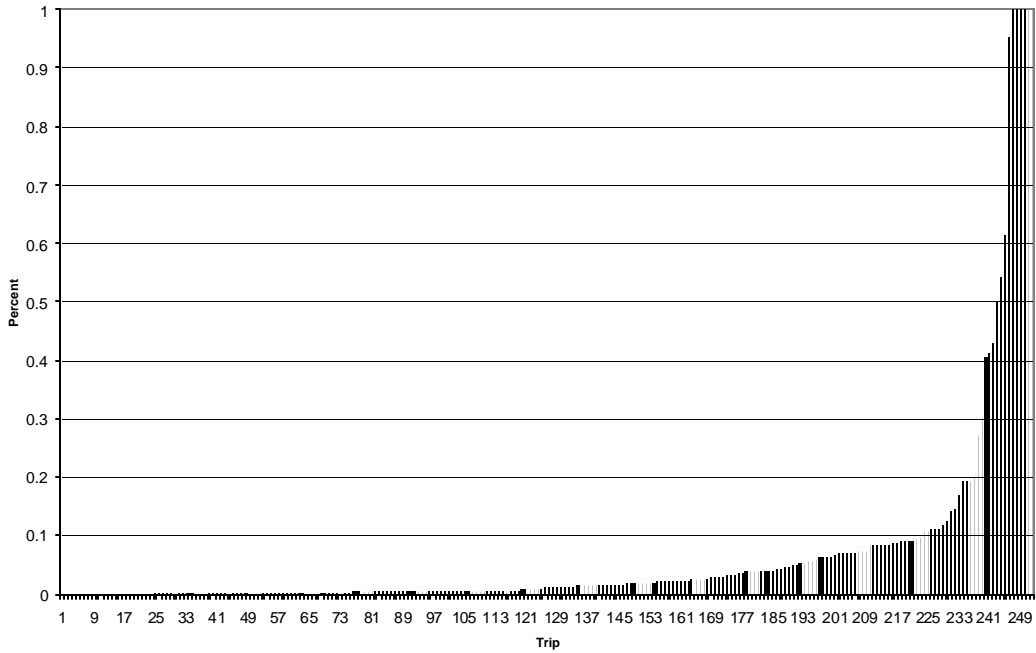


Figure 52 – SNE/MA gillnet: percent of total landed weight of stocks of concern

Figure 12. Landings Composition of GOM Trawl (FY2001)

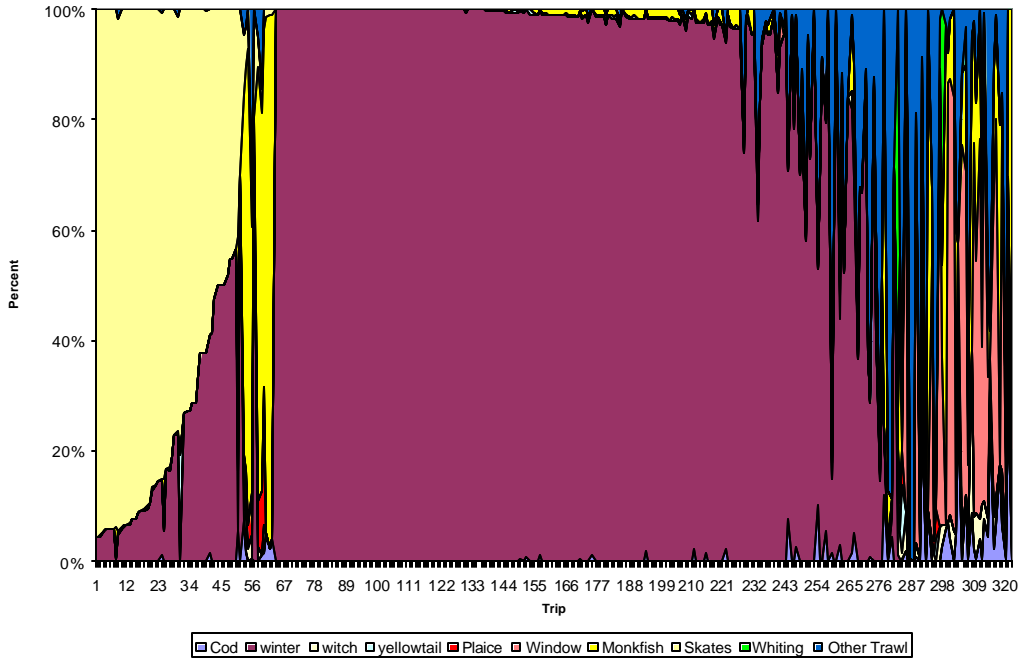


Figure 53 – GOM trawl landings composition (FY 2001)

Figure 13. Landings Composition of GOM Trawl (FY2001 Quarter 3 & 4)

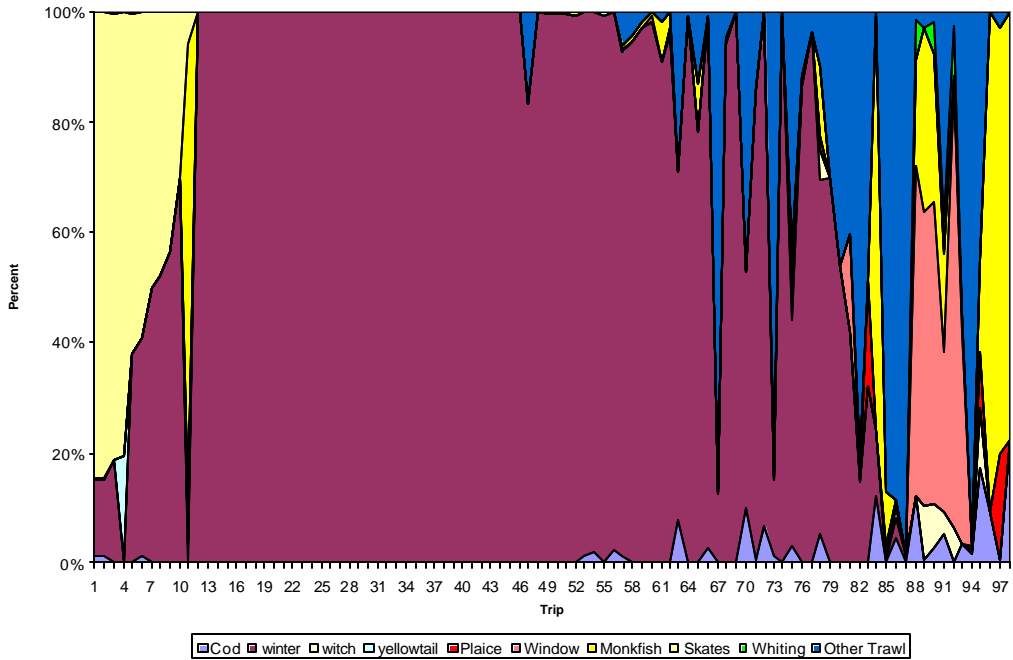


Figure 54 – GOM trawl landings composition, quarters 3 and 4 (FY 2001)

Figure 14. Landings Composition GB Trawl (FY2001)

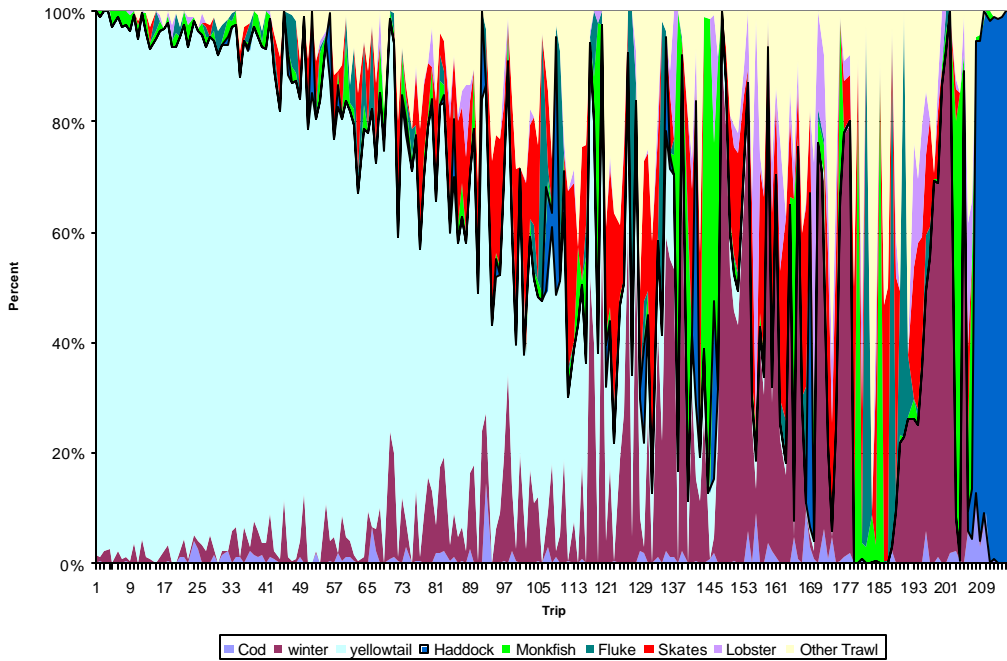


Figure 55 – GB trawl landings composition (FY 2001)

Figure 15. Landings Composition GB Trawl (FY2001 Quarter 3 & 4)

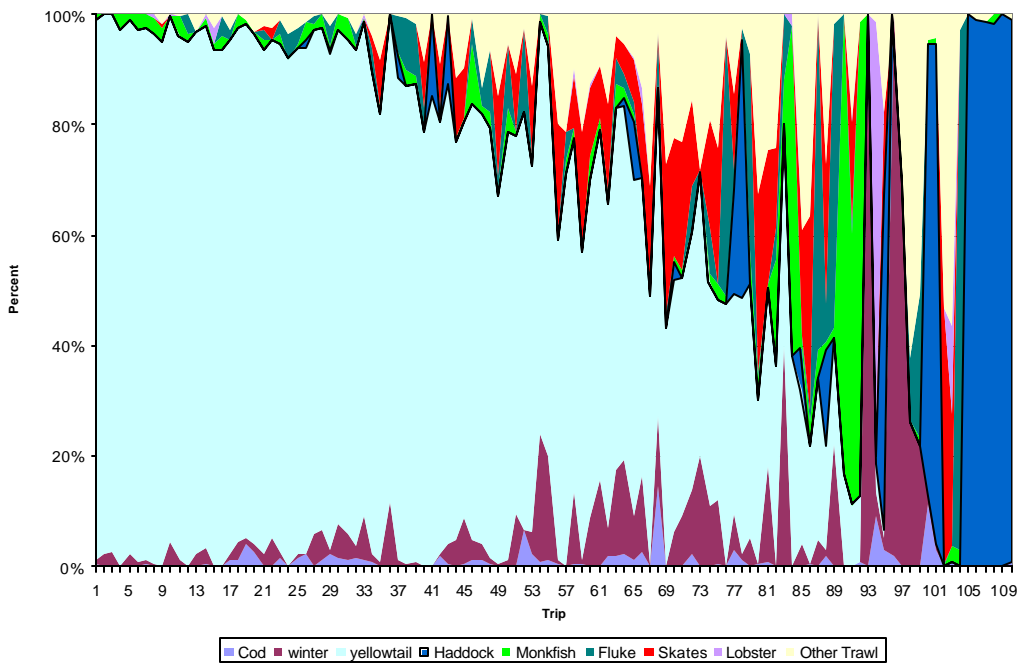


Figure 56 – GB trawl landings composition, quarters 3 and 4 (FY 2001)

Figure 16. Landings Composition for SNE/MA Trawl (FY2001)

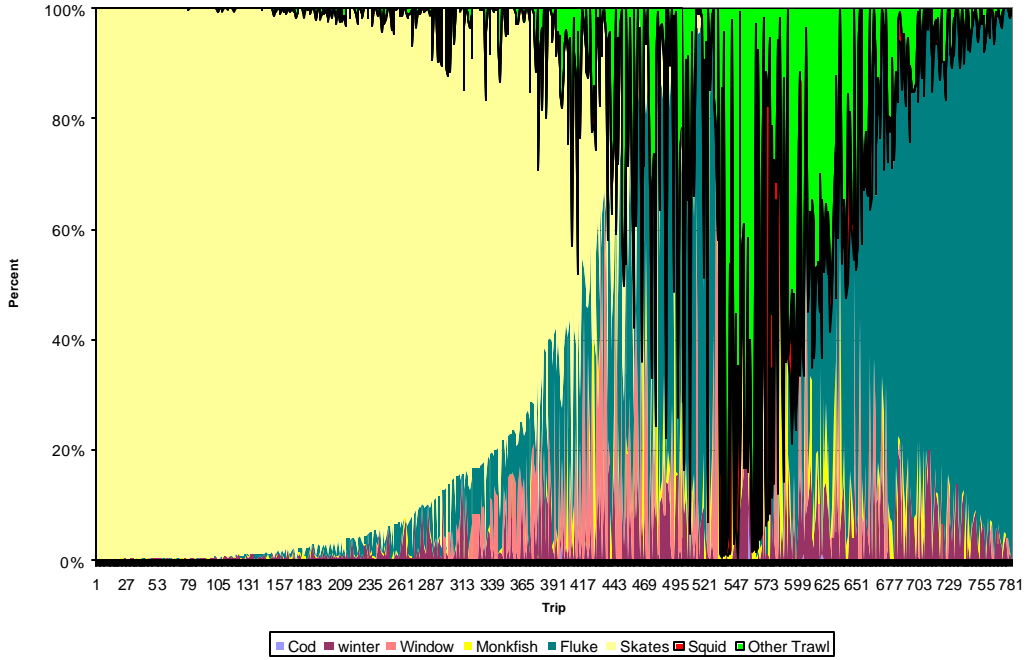


Figure 57 – SNE/MA trawl landings composition (FY 2001)

Figure 17. Landings Composition for SNE/MA Trawl (FY2001 Quarter 3 & 4)

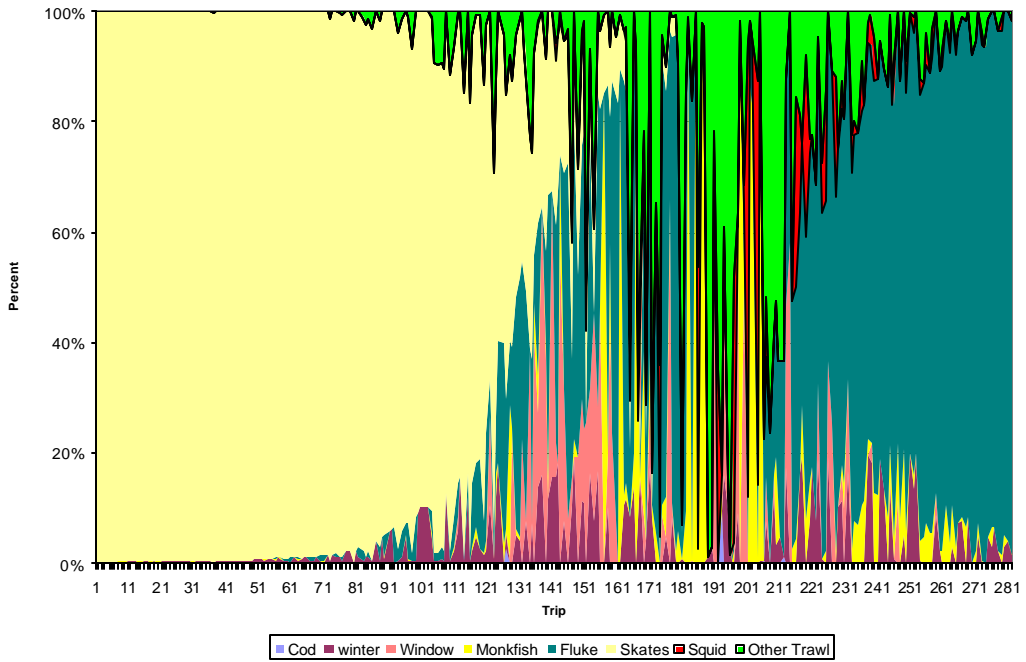


Figure 58 – SNE/MA trawl landings composition, quarters 3 and 4 (FY 2001)

Figure 18. Landings Composition for GOM Gillnet (FY2001)

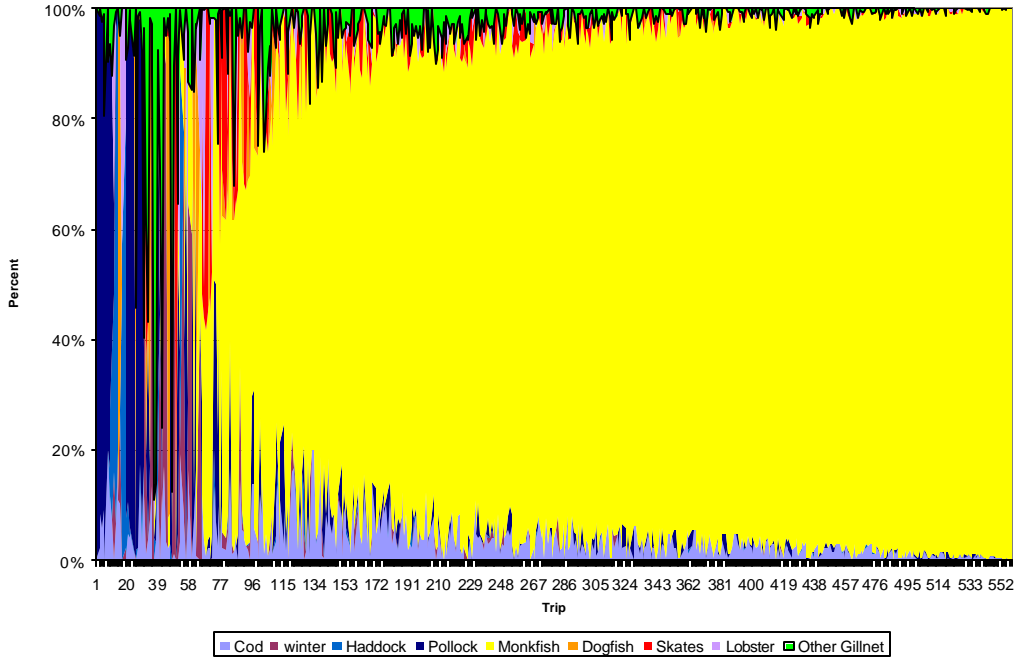


Figure 59 – GOM gillnet landings composition (FY 2001)

Figure 19. Landings Composition for GOM Gillnet (FY2001 Quarter 3 & 4)

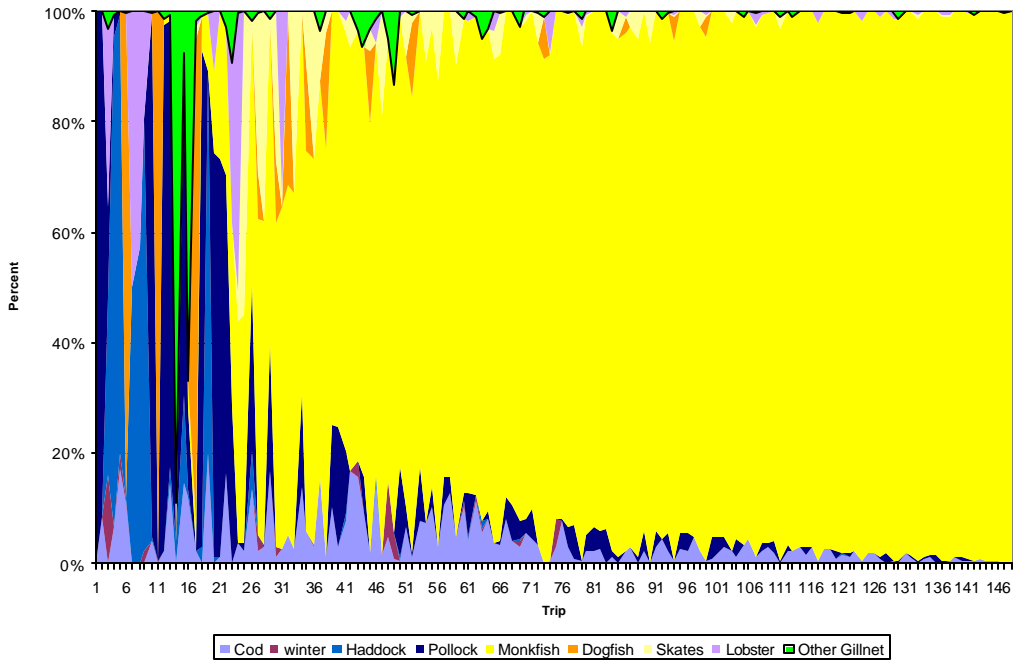


Figure 60 – GOM gillnet landings composition, quarters 3 and 4 (FY 2001)

Figure 20. Landings Composition of GB Gillnet (FY2001)

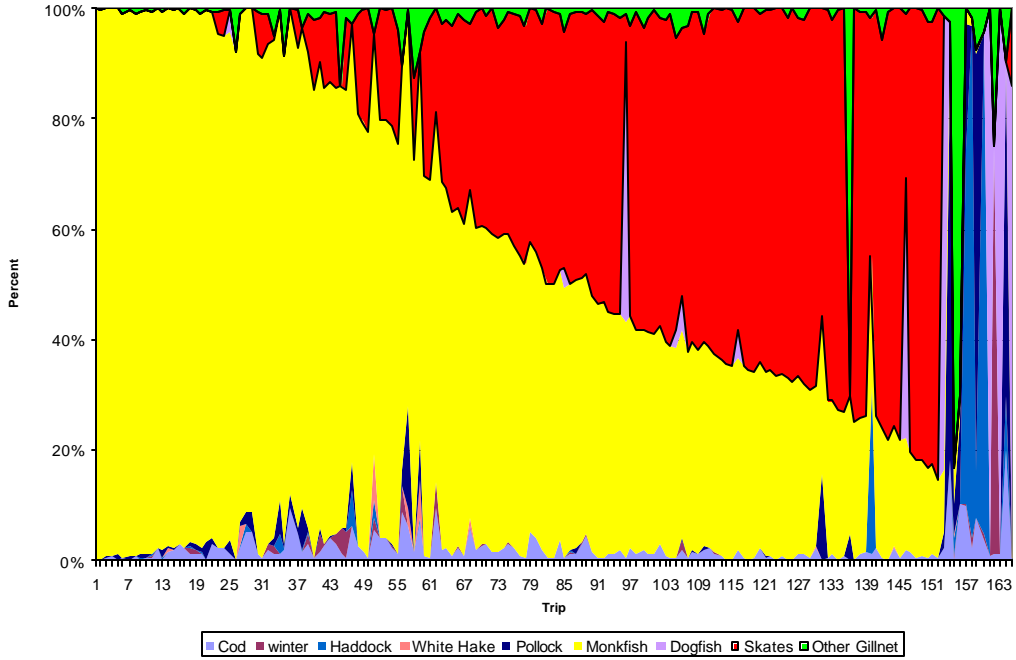


Figure 61 – GB gillnet landings composition (FY 2001)

Figure 21. Landings Composition of GB Gillnet (Quarter 3 & 4)

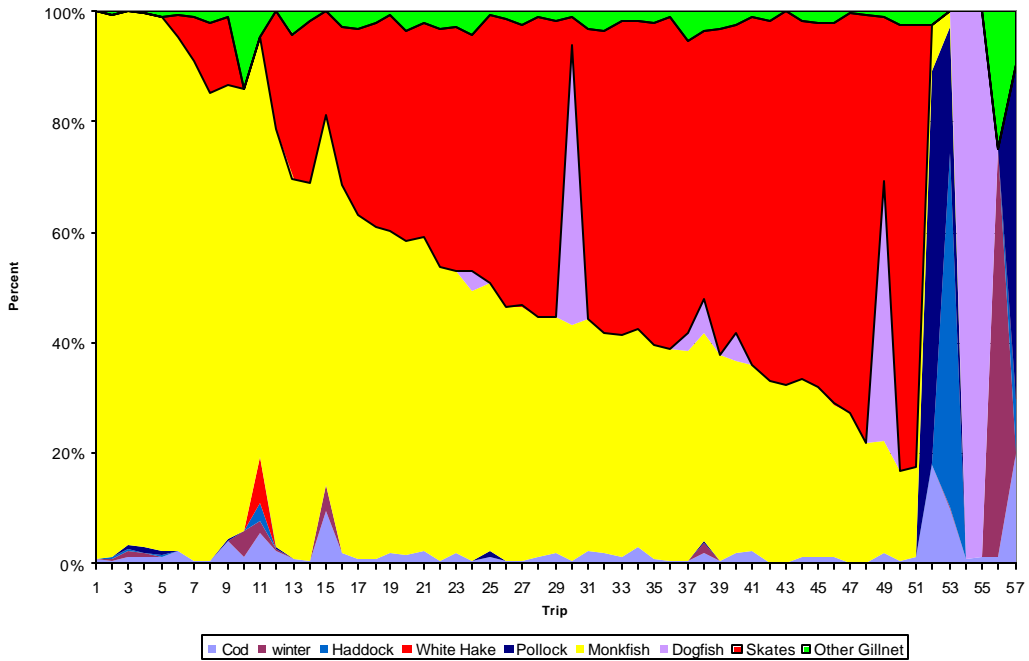


Figure 62 - GB gillnet landings composition, quarters 3 and 4 (FY 2001)

Figure 22. Landings Composition for SNEMA Gillnet (FY2001)

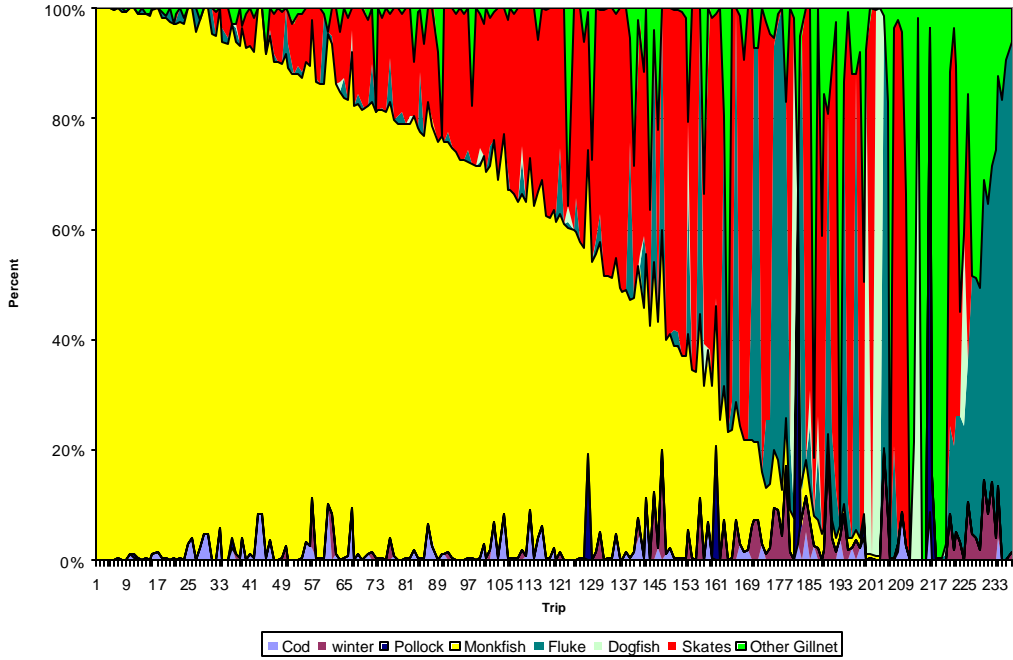


Figure 63 – SNE/MA gillnet landings composition (FY 2001)

Figure 23. Landings Composition for SNEMA Gillnet (FY2001 Quarter 3 & 4)

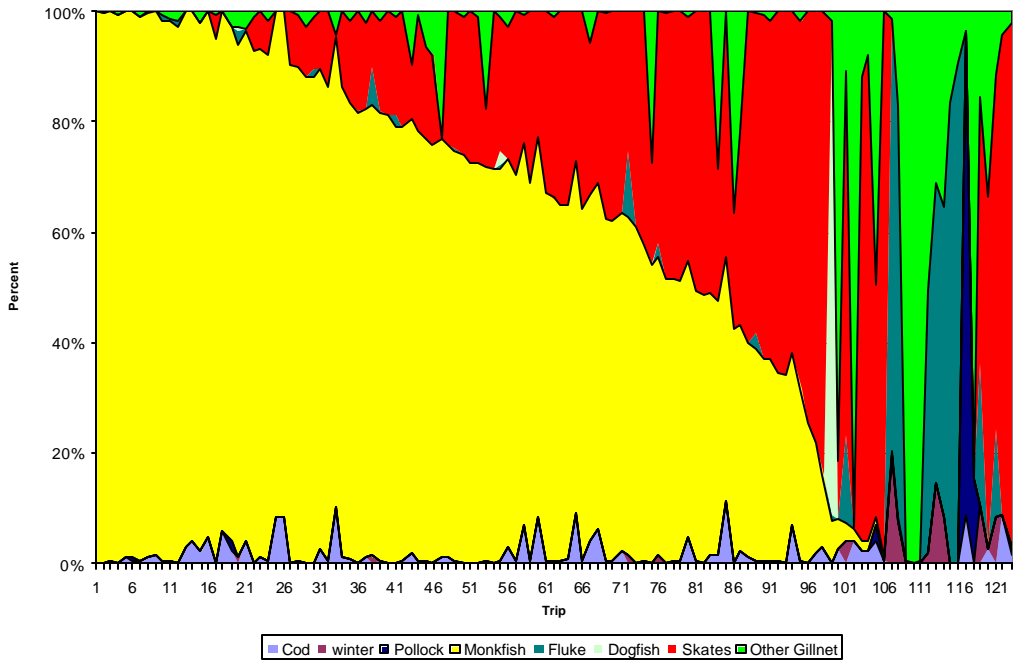


Figure 64 – SNE/MA trawl landings composition, quarters 3 and 4 (FY 2001)

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