

FISHERY ECONOMIC TRENDS

B. Pollard Rountree - P. Clay - S. Steinback - J. Walden

Topics:

- [Regional Summary](#)
- [Data Collection Considerations](#)
- [Vessel Permits](#)
- [Fleets and Fish](#)
- [Trade](#)
- [Processing](#)
- [Foreign Fishing and Joint Ventures](#)
- [Recreational Fishing](#)
- [Net National Benefits](#)

Regional Summary

The Northeast's commercial oceanic and estuarine fisheries produced domestic landings worth \$961 million dockside in 1997, a increase of just \$1 million over 1996. In 1994, 1995, and 1996 domestic landings totaled \$924 million, \$1,026 million, and \$960 million respectively. Annual totals of quantity and value for total finfish and shellfish for 1993-1997 are provided at the end of [Table 5](#). Finfish landings brought in \$349 million in 1997, representing 36% of the revenue generated in the region. Shellfish landings brought in \$613 million, accounting for the remaining 64% of revenue. In 1997, total landings decreased to 721 thousand mt, a 4% decrease over 1996 levels and an 11% decrease from the 1995 peak of 811 thousand mt. Finfish landings (531 thousand mt) decreased by 4% from 1996 figures, while shellfish landings (190 thousand mt) declined by 2% in 1997.

Important species of finfish and shellfish landed or raised in the Northeast region are shown in [Table 5](#) along with their quantity, value, and price for the last five years. Landings of finfish, lobster, shrimp, and crab are given in live weight; landings of all other shellfish are expressed in meat weight. The most important species, ranked in terms of 1997 ex-vessel value (first-sale dockside), are American lobster, sea scallops, blue crab, Atlantic salmon, oysters, goosfish, hard clams, surfclams, menhaden, and loligo squid. Seven of the 10 most valuable species are invertebrates and 6 of the 10 species are harvested predominantly inshore (0-3 miles) or are raised.

Several observations can be made from the price and landings data presented in [Table 5](#). First, American lobsters continue to contribute the greatest percentage of the region's ex-vessel revenue. Second, while sea scallops remained the second most valued species in the Northeast in 1997, ex-vessel revenue and landings were still far below peak values observed during the early 1990s.

Landings of the region's "traditional" groundfish species (cod, haddock, and yellowtail flounder) increased from 17,300 to 17,400 mt in 1997, a mere 100 mt increase over 1996. The value of these traditional groundfish in 1997 was \$37.6 million, 5% more than in 1996 (\$35.8 million). The three

"traditional" groundfish species accounted for only 4% of total 1997 catch by value and just 2% by weight.

Sea urchins, for which no fishery existed prior to 1987, rose to become the ninth most valuable species in 1995, was rated the eleventh most valuable in 1996, and the twelfth most valuable in 1997. Value of farmed Atlantic salmon declined in 1996 by over 10 million dollars, but increased in 1997. However, it retained its standing as the fourth most valuable species in both years, continuing to demonstrate the importance of marine aquaculture to the Northeast economy. Atlantic salmon (and steelhead trout) are still being raised at over 20 sites in Maine.

Relatively few species accounted for most of the landed value in the Northeast in 1997, with the top 10 generating 67% (\$645 million) of the landings value. Lobster and sea scallops remained the 2 most valuable species in the Northeast region, accounting for 32 percent of the total value of all species landed. American lobster accounted for the largest revenue gain (in absolute terms) in 1996, while blue crab held this distinction for 1997. *Loligo* squid also made a notable gain in 1997, increasing almost \$8 million. Atlantic herring made the greatest absolute gain in landings in 1997. Although menhaden landings fell, they still accounted for 34% of total landings (by weight) but only %3 by value in 1997.

[Table 6](#) provides data for landings and revenue earned by gear type, for 1994-1996. Pots and traps produced the greatest amount of total revenue in 1996, followed by bottom otter trawl and sea scallop dredges. These 3 gear types accounted for over half of the region's ex-vessel revenue. Menhaden purse seines and bottom otter trawls account for well over half of the landings by weight.

Many vessels employ more than one gear type. The ability to change from one fishing method to another is of particular importance in fisheries where different species are harvested, requiring different techniques at various seasons of the year.

[Table 7](#) provides the total number of identifiable vessels (those vessels of known tonnage, excluding undertonnage vessels for 1991 through 1993) using scallop dredge, otter trawl, and totals for all gears combined, by tonnage class for 1991-1996. Tonnage Class 1 vessels are less than 5 gross registered tons (GRT); Tonnage Class 2 vessels range from 5 to 50 GRT; Tonnage Class 3 vessels are 51- 150 GRT; and Tonnage Class 4 vessels are greater than 150 GRT.

The total number of vessels appears to have increased during 1994-1996, but this is partly due to the changes which have occurred in our data collection system; since 1994, data for Tonnage Class 1 vessels have been collected and recorded on a per-vessel basis, whereas formerly such data were combined. Thus, total numbers could be included in the table. A substantial increase in the number of Tonnage Class 2 scallop vessels also occurred in New England in 1996, partly due to activity by part-time scallopers who did not use their permit in 1995 but did so in 1996.

[Table 8](#) provides the percentage of total landings by identifiable gear type for selected species in the Northeast for 1996. This table indicates the variability in harvesting strategies for individual species. For example, summer flounder is taken predominantly with bottom trawls, while goosefish is taken primarily by bottom trawls, gillnets, and scallop dredges.

Data Collection Considerations

NMFS has recently made many changes to its data collection, archival, and analysis systems in support of the increasingly complex needs of fisheries management. In the Northeast Region, 1993 marked the end of a traditional voluntary method of data collection from vessel owners, operators, and dealers. Regulations implemented in 1994 in several FMPs require mandatory reporting programs.

Under the voluntary method of data collection, NMFS obtained information on landings through the collection of weighout sales receipts (at the point of first sale) using a network of federal and state port agents located in the Northeast. This information was augmented by interviews with vessel operators when vessels landed, as well as a monthly or annual canvas.

The present mandatory reporting system became effective in April, 1994 for summer flounder transactions, and in June, 1994 for multispecies and scallop transactions. The mandatory reporting system consists of two components, one from dealers and one from the vessel owners and/or operators. The dealer reports contain total landings and revenue information, broken down into market category. Essential data elements such as location, gear and fishing effort, previously annotated by port agents through interviews, do not now exist in the dealer reports and must be extracted from corresponding vessel trip reports.

Dealer reports are assumed to provide accurate totals for landings and revenue; vessel trip reports (VTRs) are used as a subset of the dealer data. The VTR data are still undergoing auditing procedures at various levels and are therefore considered provisional.

Vessel Permits

In the Northeast, most permits are issued by the NMFS Northeast Regional Office and cover those fisheries which fall under Fishery Management Plans (FMPs) of the New England and Mid- Atlantic Fishery Management Councils. The only exception is for tuna permits which are issued by the NMFS Highly Migratory Species Division Office in Silver Spring, Maryland. Some FMPs are for single species (e.g., lobster), while others are for complexes of species (e.g., multispecies). When a fishery is managed under a federal FMP, participants in that fishery must have an appropriate permit. Possession of that permit constitutes acceptance of the regulations contained in the FMP. It is possession of a permit that triggers the requirement for mandatory reporting by vessels in the sea scallop, multispecies, summer flounder, and surf clam and ocean quahog fisheries.

Permit data assist managers in evaluating the distribution of vessel owners, as a complement to data on distribution of vessel landings. Permit data are also the source of vessel characteristics data (e.g., length, tonnage, horsepower). Permit and related data on days-at-sea usage are important for evaluating active and latent effort, capacity, and to some extent levels of capitalization, as well as for tracking and measuring impacts of measures such as limited access and vessel buybacks. Data on landings reported in relation to type of permit also allows evaluation of the effectiveness of regulations in achieving management goals.

Broadly speaking, Northeast permits allocate fishing privileges under some combination of the following four categories: commercial versus recreational, and limited access versus open access. Commercial permits allow sale of the catch. Permits for recreational fishing do not; most federal recreational permits are held by party and charter boats, though there is a category of tuna permits for anglers. In addition, unlike all other charter/party permits in the Northeast, tuna party/charter vessels are commercial. These commercial and recreational permits may be either "open access" or "limited access", as described below.

For some fisheries where effort limitations are required, a moratorium is established. In such a case, certain requirements ("qualifying criteria") must be met by the vessel owner in order to acquire a permit. Generally, the vessel must have landed the species covered under the FMP in question during a specified period (usually several years in duration). Sometimes a minimum level of landings of the species is also required. Those who meet these requirements are granted a "limited access" permit. Once the qualifying criteria are established, and qualified vessels determined (through a lengthy process which includes an appeals period), then no additional vessels can be granted a limited access

permit in that fishery for the life of the moratorium. An "open access" permit, by contrast, can be acquired by anyone at any time. Some fisheries have both limited and open access categories within a single fishery, with open access permits having much more restrictive regulations.

In the Northeast, the NMFS issued permits in 1994 through 1996 under 7 different FMPs: Northeast Multispecies; Atlantic Sea Scallop; American Lobster; Summer Flounder; Surf Clam and Ocean Quahog; Atlantic Mackerel, Squid and Butterfish; and Atlantic Tunas. Five of these fisheries are at least partially managed under limited access arrangements (summer flounder as of 1992, multispecies as of 1994, Atlantic sea scallop as of 1994, American lobster as of 1995, and Atlantic tuna as of 1982). Under the Multispecies FMP, vessels not qualifying for limited access can still fish both commercially and recreationally under the highly restrictive open access categories. (Most recreational multispecies vessels are under open access categories, though a few have qualified for limited access permits.) There is also a commercial open access category for sea scallops. Under the Summer Flounder FMP, non-qualifying vessels can fish only under an open access charter/party category which is non-commercial. Under the American Lobster FMP, all permits are limited access, whether commercial or recreational. For tuna, the small purse seine category is closed to new entrants, but all other categories (commercial and recreational) are open access.

[Table 9](#) indicates the distribution of permits in the Northeast, by FMP and category and by vessel tonnage class, for 1994, 1995 and 1996. By comparing the numbers of vessels over the three year period one can begin to examine the potential effects of limited access on the number of vessels in the fishery -- one measure of capacity. The size component is important because of concern that smaller vessels may have more difficulty in qualifying for limited access permits. [Figure 10](#) offers related data on total numbers of permits. These data are not broken out by size, but cover a longer time span (9 years) giving more historical perspective.

Several data considerations in [Table 9](#) should be noted. First, it is not possible to be permitted under both limited and open access at the same time. For FMPs with only open access categories or only limited access categories, however, a vessel can sometimes be permitted as both commercial and recreational. In such cases, the vessel is included solely under the commercial category. Thus, recreational permitted vessels are those which have only a recreational permit. This was done to avoid double counting vessels.

It should also be noted that, except for the limited access category under the Summer Flounder FMP with its landings requirement, there have always been more permits issued than were actually used. In the past it has been difficult to determine numbers of active permits because the NMFS landings database consolidated landings made by vessels under 5 GRT. With the advent of mandatory reporting via logbooks under limited access for the multispecies, sea scallop, and summer flounder fisheries, all vessels with these permits must report total landings, even for trips not landing any multispecies, sea scallops, or summer flounder. These three FMPs accounted for 70% of all permitted vessels in 1996. This has made it possible to obtain a much more accurate count of participating vessels.

For [Figure 10](#), 1987 was chosen as the base year, as it was the first year that annual permits were issued in the Northeast. Previous permits (beginning in the 1970s) were issued in perpetuity, making it difficult to judge annual change.

The most striking feature in [Table 9](#) and [Figure 10](#) is the decline in total numbers of permits with the advent of limited access. This trend appears to reflect a number of factors, such as the tendency of fishermen to apply for permits whenever the possibility of limited access for a particular fishery is raised (e.g. in 1990 for Multispecies). However, not all of these permits will be actively fished. Once limited access is implemented, the number of permits drops because not all of the later entrants will have met the qualifying criteria. It does not usually drop to pre limited entry discussion levels,

however, because the fishery may have gained in popularity; also, not all of those who qualified due to past participation will remain active, yet they retain their permits unless required to show landings because they do not want to lose limited access status.

This influx of people hoping to qualify for limited entry, combined with the problem of fully identifying active vessels from the commercial landings databases prior to 1994, has made it difficult to judge the true impact of limited entry on numbers of active fishermen and vessels. We can make some preliminary assessments, however, noting that some relevant issues are fishery-specific.

For the lobster fishery, there was some confusion among permit holders over who could or should apply for limited access status. Thus, many of those who eventually qualified did not apply until 1996. This accounts for the drop in 1995, when limited entry was implemented, followed by a substantial rise in 1996. For multispecies, the drop was relatively small in 1994 when limited entry came into effect. The larger drop was in 1996, when more restrictive measures were implemented for both limited and open access categories, though the most stringent reductions were in open access categories. For summer flounder, the large decrease is likely due to a combination of the landings requirement and the current state of the resource rather than simply the limited entry provisions. For tunas, there has been growth in all the open access categories from 1994 to 1996, but especially in the recreational or angling category. Some of the increase in commercial open access categories may be due to groundfish fishermen seeking alternative species.

Surf clams and ocean quahogs are a special case. Total numbers of surf clam and ocean quahog permit holders show a slight rise between 1994 and 1996. This occurred within the groups of those with ocean quahog only (from 131 to 164) and those with both surf clam and ocean quahog (from 986 to 1096). Numbers of those with only surf clam permits dropped over the period (from 384 to 343). Further, an overall increase appears to occur in numbers of Tonnage Class 2 vessels while other tonnage categories are stable. However, as of September, 1990, surf clams and ocean quahogs have been managed under individual transferable quotas (ITQs). Only quota allocation holders may fish under these FMPs. So while it is still possible to acquire and hold a surf clam or ocean quahog permit (which are not under a moratorium), these in and of themselves convey no fishing privileges. Therefore, perhaps individuals are holding and acquiring permits on the chance that either the ITQ system will be dismantled or that additional allocations may be granted by the federal government in the future at no cost. Certainly anyone desiring an allocation today has the opportunity to buy one from a current allocation holder. Conversely, it is possible to hold an allocation without holding a permit. This is because, unlike permits, allocations are solely to persons (individual or corporate) and are not tied to a specific vessel. In the surf clam and ocean quahog fisheries, the number of ITQ allocations has remained fairly stable. There were 114 surf clam allocation holders in 1994, 113 in 1995, and 115 in 1996. For ocean quahogs there were 70 allocation holders in 1994, 68 in 1995, and 67 in 1996. (These data are not shown in tabular form.)

With respect to impacts of limited entry by vessel size, as noted below under "Fleets and Fish", the majority of the vessels in the Northeast are under 50 GRT. For those fisheries with both limited and open access commercial categories, i.e., multispecies and sea scallops, the open access fleet tends to be comprised of smaller vessels on average than does the limited access fleet -- although there are a few very large open access vessels. In 1996, 80% of open access permitted vessels in the multispecies fishery were small (0-50 GRT) while only 68% of those under limited access permits fell within this range. For the sea scallop fishery, in 1996, corresponding figures were 73% and 1% respectively. While some of the disparity in both cases may be related to small vessels having initial difficulty in qualifying for the moratorium (though many gained limited access status later, on appeal) it is more likely that open access trip limits were sufficiently generous that owners of small vessels did not feel the need to apply for limited access status. In the lobster fishery, for instance, many Tonnage Class 1

and 2 lobster vessel owners did not initially apply for limited access in 1995, but subsequently secured limited access permits when they realized they could not fish outside of state waters without one.

The greater disparity for scallopers than for multispecies vessels is due to three factors. One is that, in all three years, vessels with scallop permits are larger on average than vessels with multispecies permits, in spite of the fact that these are overlapping sets, with some vessels holding both permits. (Average tonnages for scallop and multispecies permitted vessels in 1996 were 57 GRT and 42 GRT, respectively). Second, a number of inshore scallopers (who tend to be smaller), especially in Maine, did not apply for limited access permits for fear of having to follow federal gear regulations in state waters. Third, there was a minimum landings requirement in order to gain limited access under the sea scallop FMP (400 lbs. of scallop meats or 50 U.S. bushels of shell stock on any trip in the qualifying period). Under the multispecies FMP, the equivalent requirement was simply for landings (as little as one pound) during the qualifying period.

In the multispecies limited access fleet, the numbers of Tonnage Class 1 and, to a lesser extent, Tonnage Class 2 vessels increased from 1994-1996, while the numbers of Tonnage Class 3 and 4 vessels declined or remained the same. This may be related to more relaxed measures for the smallest vessels (in 1994 and 1995 those under 45 feet, and in 1996 those under 30 feet). Measures granting less restrictive limits to scallop vessels fishing with smaller dredges, however, have not had a similar effect in that fishery.

Another important measure of potential effort, including possible shifts between fisheries in response to regulatory changes or other factors, is the number and variety of permits held by individual vessels. In the Northeast, a given vessel can potentially be permitted simultaneously under all 7 FMPs. [Table 10](#) provides information on numbers of vessels holding common combinations of permits for 1994-1996. Because surf clam and ocean quahog permits do not convey fishing privileges they are not considered. Tuna permits are not considered either because of scale. In 1996, for example there were over 26,900 unique vessels with tuna permits included (an exact figure is not provided due to confidentiality considerations in [Table 9](#)), but 6,008 otherwise. Further, all of the 6,008 held tuna permits. The total number of unique permitted vessels for this analysis, therefore, was 5,896 in 1994, 5,939 in 1995, and 6,008 in 1996.

A large number of vessels were permitted under only a single FMP, e.g. in 1996, 1,083 held only lobster, 570 held only multispecies, 318 only Atlantic mackerel, squid and butterfish permits. In fact, statistically, the most common (modal) number of permits held by a given vessel in any of the three years is one. For those who did hold more than 1 permit, the most common group in 1996 was all 5 non-ITQ and non-tuna permits, followed by a combination of multispecies; Atlantic mackerel, squid and butterfish; American lobster and Atlantic sea scallop; and finally, the multispecies; summer flounder and Atlantic mackerel, squid and butterfish combination. These combinations all include a mix of higher and lower value species (re. discussions of landings and value above) and of fisheries under more and less restrictive regulations, indicating an attempt to balance risks and benefits. Over the three years considered, the American lobster only category has consistently increased in size, especially in 1996 when lobster limited access permit applications and appeals were finalized. This is not surprising given the high value of lobster landings in recent years. Numbers of multispecies permits increased from 1994 to 1995, but then dropped steeply in 1996, most likely due to implementation of stricter rules -- especially in the open access categories -- and continued low stock levels for this period. Numbers of those holding only Atlantic mackerel, squid and butterfish permits rose precipitously, probably due to relatively high abundance.

The size of the group with the most potential flexibility (those who held all five permits) dropped nearly 25% from 1994 to 1995, but then increased slightly from 1995 to 1996. Not all fisheries which

Northeast vessels are engaged in, of course, even have federal permits at this time. So, these figures cannot be taken as a strong predictor of levels of diversification within the Northeast fleet. Nonetheless, the change from 1994 to 1995 was statistically significant. The initial lessening of diversification in the variety of permits held within this subset of fisheries may be related to limited entry rules and/or to stock conditions. Review of data from the scup and black sea bass fisheries which come under limited entry in 1997 will be instructive in this regard.

Fleets and Fish

Tables 11-18 present condensed pictures of the activity of known vessels captured by the different data collection systems in effect during 1994-1996. The picture is complicated somewhat by the changes that occurred in our data collection system during these years and the consequent use of multiple data bases. Because of this, caution is urged in the interpretation of effort related measures. In the future, these problems will be resolved by explicitly linking the dealer and vessel logbook databases together.

All information relative to individual vessel activity has been aggregated into annual summaries on the basis of gear use, area fished, and tonnage class. Most information concerns effort, landings, and revenue. No cost information is reported.

Several caveats are in order concerning categorization of vessels by fleet. In general, if a vessel landed at least once in a port in a region, its total activity (i.e., all trips regardless of gear used) was ascribed to that particular region, defined as either New England, Mid-Atlantic and Chesapeake, or the entire Northeast. Hence, a vessel's activity may be represented in more than one table. The same multiple representation exists for gear use. For example, if a vessel gillnetted and longlined in the same year, its total activity will be represented in the total activity sections of both tables. Its "primary gear" activity, however, reflects only that activity which occurred while using one gear type (i.e., either gillnetting or longlining). For some gears no distinction is made between primary gear activity and total activity because a gear's use constituted the overwhelming majority of the activity of that fleet.

New England Otter Trawl: In 1996, the total revenue for New England otter trawlers was derived primarily from goosfish (14%), cod (12%), *Loligo* squid and American plaice (both 10%), winter flounder (8%), and witch flounder and lobster (both 6%). The total number of vessels using this gear in New England increased in 1994, 1995 and 1996 for the first time since 1988 (not visible in table), even after allowing for the addition of Tonnage Class 1 vessels to the database ([Table 7](#)). In 1996, the fleet was comprised of 934 vessels, with the greatest increase occurring among Tonnage Class 2 vessels, which comprise 55% of the total ([Table 11](#)). This may be related to Multispecies FMP regulations in effect during 1994-1996 which exempted smaller vessels from certain effort restrictions. Total revenue (in actual dollars) and effort measures increased for all four tonnage classes in 1996.

Mid-Atlantic Otter Trawl: In 1996, the total revenue for Mid-Atlantic otter trawlers was derived primarily from summer flounder (23%), *Loligo* and *Illex* squid (20% and 9%, respectively), whiting (14%), and scup (5%). The number of vessels using this gear in the Mid-Atlantic decreased to 356 in 1996, down from a high of 375 in 1995, the highest number since 1988 ([Table 7](#) shows vessel totals since 1991). The increase in vessel numbers since the early 1990s may represent displaced effort from New England in response to tighter effort controls and area closures. The increases in the number of vessels in 1995 and 1996 occurred primarily in Tonnage Class 2 ([Table 12](#)), with the addition of Tonnage Class 1 being negligible. All tonnage classes exhibited increases in revenue per day absent in 1995, that fell again in 1996, despite variations in the average number of days absent from port over the past few years. Average days absent increased in 1996, presumably in an effort to counteract poor landings.

Northeast Scallop Dredge: [Table 13](#) shows the activity of the Northeast sea scallop dredge fleet. A dramatic increase in the number of Tonnage Class 2 vessels is evident, partly due to part-time scallopers who did not use their permit in 1995 but did so in 1996. Total revenue (in actual dollars) rose over all three years in all size categories of vessels. Among Tonnage Class 2 and 4 vessels, revenue per day absent dropped off in 1996 while it rose slightly for Tonnage Class 3. Landings per day absent increased in 1996 for Tonnage Class 3 and 4 vessels.

Northeast Shrimp Trawl: The northern shrimp fishery is a seasonal (winter/spring) fishery. In 1996, 98% of shrimp landings were made by vessels using shrimp trawls and 94% of the fleet consisted of Tonnage Class 2 or 3 vessels. The principal gears used by shrimp vessels during the six month off-season are otter trawls, gillnets and lobster traps.

[Table 14](#) shows the activity of the shrimp fleet, both in- season and off-season. Shrimp trawl gear was used during 61% of the days spent at sea, and contributed 45% to the total fleet revenues. In 1996, revenue and landings per day absent declined.

Northeast Gillnet: This gear category excludes data for trips using large mesh drift net gear in the large pelagic fishery. In 1996, total revenue for small mesh drift and sink gillnets was derived primarily from cod (24%), goosefish (24%), spiny dogfish (16%), and pollock (10%). Gillnet vessels are for the most part Tonnage Class 2 vessels, which employ other gear (usually otter trawls and shrimp trawls) for approximately 15% of the year on average.

The total number of vessels in this fishery increased from 367 in 1994 to 472 in 1996 ([Table 15](#)). However, this reflects in part changes in reporting systems as mentioned above. For the fleet as a whole, average revenue per day absent and landings per day absent decreased in 1996 compared to 1995 levels.

Hook: This category of gear includes longlines, setlines, and line trawls. In 1996, 83% of the total revenue from these related gears was attributed to swordfish (26%), bigeye tuna (20%), cod (15%), yellowfin tuna (12%) and tilefish (10%).

Participation in this fleet increased from 316 vessels in 1994 to 362 vessels in 1995, before dropping to 278 vessels in 1996 ([Table 16](#)). Revenue per day absent for Tonnage Class 2 vessels increased over 1995 levels, although total revenue declined for Tonnage Classes 1, 2, and 3.

Surf Clam and Ocean Quahog Dredge: This fishery has stabilized in many respects due to the individual transferable quota (ITQ) management system implemented in 1991. In 1995, the number of vessels in the fishery declined by 16% (to 100, which includes Tonnage Class 1) after several years of stability, as vessel quotas were further consolidated. In 1996 the number of vessels remained stable (101, including Tonnage Class 1).

The activity summarized in [Table 17](#) is divided between the activity of all vessels in the Northeast region using surf clam/ocean quahog dredges and those vessels landing only in Mid- Atlantic ports. Of the 97 vessels operating in the region in 1996, 43 landed outside the Mid-Atlantic area.

During the last five years, some vessel owners agreed to harvest surf clams owned under another ITQ. These vessels received about half the market price of the catch. The lower price received by these vessels reflected the rental price for capital and labor services to harvest the resource, which was lower than the full market value of the clams. The ITQ owner then received the difference between the rental price and the full fair market value. The revenue for the surf clam fishery, as stated in [Table 5](#), was adjusted so that the prices paid to ITQ owners were taken into account. In the case of vessel performance, however, adjusted revenues are reported, reflecting what vessels actually earned ([Table](#)

17).

Offshore Lobster Traps/Pots: The delineation between offshore and inshore lobster fisheries is not precise, as many vessels fish both sides of the three mile line which divides inshore from offshore. Roughly 20% of the lobster revenue in 1996 was from offshore trips, while 80% was from inshore. A small portion of lobsters taken offshore is caught as bycatch by the otter trawl fleet.

The offshore lobster fleet is dominated by Tonnage Class 2 and 3 vessels. Activity by Tonnage Class 1 and 4 vessels was too limited for inclusion in [Table 18](#). The inshore fleet is dominated by Tonnage Class 1 and 2 vessels.

Total revenue (and landings) of offshore lobster increased in 1996, but revenue per day absent fell for the smaller vessels. Both Tonnage Class 2 and 3 vessels relied heavily on offshore lobster pots; it apparently was not worthwhile for these vessels to diversify to other gear types.

Aquaculture

Although aquaculture is growing and has potential for supplementing wild-catch fishery products in many seafood markets, aquacultural activities in the Northeast are mostly experimental. The success of Atlantic salmon farms, however, has sparked interest in the potential of raising alternative species. Salmon production in Maine rose substantially in 1995, as growers concentrated strictly on Atlantic salmon, while production of steelhead trout declined. The rate of growth of domestic farm-raised-salmon in the Northeast has since slowed, due to the lack of high quality sites and the cost of obtaining new farming permits. Almost all of the increase in production in the last several years has been at existing leases, as opposed to additional lease sites.

Considerable effort is in progress to examine the possibility of farm-raising a number of species that previously were only available in the wild. Recent restrictions on traditional fishing practices have greatly increased interest in raising cod, haddock, and summer flounder experimentally in the Northeast. Surf clams, soft-shell clams, mussels, oysters, bay scallops and sea scallops are also emerging as viable aquaculture shellfish projects.

Trade

Historically, the Northeast region has run a trade deficit in edible fishery products because of the large port of entry in New York and the region's proximity to Canadian fishing ports. Between 1994 and 1996, this deficit decreased by \$230.1 million. Imports declined by \$155.2 million (6.6%) in value between 1994 and 1996, while exports increased \$74.9 million (14%). (See [Tables 19](#) and [20](#).)

Increases in the value of product specific imports during this time period ([Table 19](#)) include fresh or frozen salmon (\$21.8 million), frozen groundfish blocks (\$31.8 million), fresh lobster (\$7.1 million), and other lobster products (\$9.0 million). These were offset by decreases in the value of imported fresh or frozen sea herring (\$1.8 million), frozen whole groundfish, halibut and other flatfish (\$2.5 million), ocean perch fillets (\$20.2 million), fresh groundfish and flatfish fillets (\$4.6 million), frozen groundfish and flatfish fillets (\$11 million), canned tuna (\$28.6 million), minced fish (\$12.6 million), crab products (\$10 million), frozen lobster (\$12.7 million), scallops (\$35.6 million), and shrimp products (\$151 million).

Product specific exports which increased in value between 1994 and 1996 included fresh or frozen herring (\$2.5 million), processed herring products (\$5.7 million), fresh or frozen salmon (\$10.6 million), fresh or frozen cod (\$8.2 million), fresh or frozen mackerel (\$2.6 million), fresh or frozen dogfish (\$8.1 million), fresh or frozen fish fillets (\$9.9 million), fish sticks and portions (\$1.7 million),

roe products other than sea urchin roe (\$1.9 million), fresh lobster (\$19.9 million), frozen lobster (\$2.9 million), fresh shellfish (\$2.6 million), and fresh or frozen scallops (\$1.5 million) ([Table 20](#)). These were partially offset by decreases in the value of exports of fresh or frozen tuna (\$9.3 million), live sea urchin (\$2.8 million), sea urchin roe (\$7.8 million), frozen shrimp (\$1.4 million), canned shrimp (\$1.1 million), crab products (\$1.8 million), and fresh or frozen squid (\$9.7 million).

Canada has traditionally been the largest trading partner for the New England states. Between 1994 and 1995, however, overall imports into New England increased, while Canadian imports declined ([Table 21](#)). This was followed in 1996 by both an increase in overall imports, and an increase in Canadian imports over 1995 levels. Overall Canadian market share dropped from 27% to 22% between 1994 and 1995, and then increased to 24% in 1996.

Because Canada closed several major fishing areas and implemented other restrictive harvesting practices over the last several years, the drop in Canadian imports is not surprising. Among the individual categories, Canadian market share of cod, other finfish and scallops increased during this time period, while market share of other groundfish and flatfish declined. The Canadian market share of scallops increased, even though the total imports of scallops from Canada declined. This was due to a general decline in scallop imports between 1994 and 1996. [Table 22](#) lists the top ten countries (by value) receiving exports of fishery products from the Northeast region during 1994, 1995 and 1996. Canada was the region's most important trading partner in terms of export value, followed by Japan. Six of the top ten countries belonged to the European Union, and as a block they accounted for more of the total export value than did Japan. Exports to the top ten nations increased in value 7% between 1994 and 1995, and 1% between 1995 and 1996. Together, the top ten nations accounted for 78% of the value of all fishery product exports from the Northeast Region in 1996.

Processing

Fish processing in the Northeast Region utilizes both domestic landings and, increasingly, imported products. Processing is defined as any activity that adds value to raw products, for example, filleting, cooking, breading, canning, or smoking. The most important processed products, by value, are fresh or frozen fish fillets, and breaded, cooked fish. In 1995, New England plants produced most (92%) of the fresh and frozen fish fillets, steaks, or other processed portions produced in the Northeast, while Mid-Atlantic plants produced 73% of the canned products and 91% of the cured products. Edible fish product processing of regionally caught species was led by surf clam processors, producing canned products of whole and minced clams, chowder, and juice.

The number of plants and their average annual employment levels, as identified in the annual processed product surveys during 1990-1995, are shown in [Table 23](#). In New England, the number of employees in processing plants increased in 1995, after two particularly low years in 1993 and 1994. Employment in Mid-Atlantic processing plants declined annually through 1994, but increased somewhat in 1995. The number of processing firms throughout the Northeast region has declined steadily through 1995, reflecting the shrinking supply of fresh domestic fish as well as the lack of substitution of imported product for domestic. The average number of employees per plant has increased, since the number of processing plants in the region is at a new low.

The level of plants and employees in wholesaling establishments in the region (both New England and Mid-Atlantic) showed a dramatic rise in 1995 (61% for number of employees; 42% for number of plants). The number of wholesaling plants in the Mid-Atlantic more than doubled in 1995.

Foreign Fishing and Joint Ventures

Foreign fishing operations in the U.S. Atlantic EEZ came under direct control of the U.S. with the passage of the Magnuson Act in 1976, and joint venture arrangements started in 1982. Since that time, directed foreign fishing has been phased out; and from 1992-1996, there were no joint ventures within this region.

IWPs (Internal Waters Processing) arrangements have been successful, stable operations for over 10 years. These programs are administered by the states (Maine, Massachusetts, Rhode Island, New York, and New Jersey in particular) which allow U.S. vessels to fish for herring (and some mackerel) in state waters and offload to foreign ships (Russian) for processing. In 1994, 1995, and 1996, a handful of vessels were involved and about 3,000, 9,000, and 11,000 mt of herring were landed, respectively, in each year under these agreements.

Recreational Fishing

Preliminary data collected by the Marine Recreational Fisheries Statistics Survey (MRFSS) indicate that the total number of finfish caught by recreational anglers in the Northeast Region declined to 109.8 million in 1996 (from 110.5 million in 1995; [Figure 11](#)). Catches in the Mid-Atlantic decreased slightly (from 88.5 million fish in 1995 to 86.4 million fish in 1996), while catches in New England increased 6% (from 22.0 million fish in 1995 to 23.4 million fish in 1996). Anglers in the Mid-Atlantic accounted for approximately 4 times the finfish catch of their counterparts in New England.

Striped bass, scup, Atlantic mackerel, bluefish and summer flounder were the most common recreationally-caught species in 1996 in New England ([Figure 12](#)). Together, these five species comprised roughly 75% (by number) of the total New England recreational catch. Of particular interest is the absence of Atlantic cod in [Figure 12](#). For the first time since 1992, Atlantic cod did not constitute one of the top five species caught in New England.

In the Mid-Atlantic, the five most common recreationally-caught species were the same as in 1995. Summer flounder, Atlantic croaker, black sea bass, weakfish and striped bass were the most commonly caught species, in order, in 1996 ([Figure 13](#)). These species accounted for approximately 63% of the total recreational catches in number (up from 59% in 1995).

Recreational fishing effort in the Northeast Region reached a 10-year high in 1996. Approximately 23.3 million trips were taken in 1996, a 5.2% increase from 1995 (22.1 million; see [Figure 14](#)). In the Mid-Atlantic, effort increased considerably (from 15.5 million to 16.5 million) to a new high, while effort in New England matched the ten-year high set in 1991 (6.8 million).

Shore fishing trips outnumbered private/rental boat trips for the second consecutive year in New England and accounted for the highest percentage of recreational fishing effort (48% of total fishing trips; [Figure 15](#)). Private/rental boat fishing was second (46% of trips) and party/charter boat fishing was third. Effort increased slightly in the shore mode (from 3.1 million trips in 1995 to 3.2 million in 1996). Private/rental fishing increased moderately (from 2.9 million trips to 3.1 million) and party/charter boat fishing trips declined to 0.4 million trips (from 0.5 million trips in 1995).

In the Mid-Atlantic, private/rental boat fishing accounted for the highest percentage of recreational fishing effort (53% of total fishing trips; [Figure 16](#)). Shore fishing was second (36% of trips) and party/charter boat fishing was third. Effort increased slightly in the private/rental boat mode (from 8.4 million trips in 1995 to 8.7 million in 1996). Shore fishing reached a ten-year high in 1996.

Approximately 5.9 million trips were taken in 1996, an 8.6% increase from 1995 (5.4 million). Party/charter boat fishing trips increased slightly to 1.9 million trips (from 1.7 million in 1995).

The NMFS has increased efforts to collect marine recreational economic and social data in the Northeast Region in recent years. A comprehensive economic survey of recreational anglers in the Northeast Region was conducted in 1994 in conjunction with the MRFSS and a similar survey will be conducted again in 1998. In addition, the MRFSS has recently begun to collect economic information as part of its baseline survey, and economic studies of the party/charter industry have been funded in Maine, Massachusetts, New York and New Jersey. Over time, social and economic data collected from these studies will help provide a foundation for evaluating marine recreational fisheries and future recreational policies.

Net National Benefits

Previous issues of this report have discussed how economics relates to the Magnuson Fishery Conservation and Management Act of 1976, and presented various economic concepts, including resource rents and the economic value of fish resources based on their ability to grow and reproduce. A recent report, "Our Living Oceans, The Economic Status of U.S. Fisheries" also provides a thorough discussion of this topic.

Many of the fisheries in the Northeast Region are moving towards various types of limited access that could lead to greater fleet efficiency. In the groundfish, summer flounder, lobster, and sea scallop fisheries, moratoria on entry are in place; in the surf clam and ocean quahog fishery, individual transferable quotas have been in effect since 1990.

To give a sense of how many vessels would have been double counted, 1996 data include 45 cases of a vessel holding both a commercial and a recreational permit in the summer flounder fishery, 20 cases in the lobster fishery, and 197 cases in the Atlantic mackerel, squid and butterfish fishery. Similarly, vessels in the latter fishery which held both "commercial" and "catcher/processor" permits are counted only once -- as commercial; there were 26 such vessels in 1996. (These data are not shown in tabular form.)

In 1994 multiple tuna permit categories were allowed. Beginning in 1995 a permit holder was required to choose one category only, according to specific guidelines. To facilitate comparison, 1994 permits were assigned to the category required under the new rules. Although numbers of allocation holders are similar to the numbers of Tonnage Class 1 permit holders, there is no correlation between these two groups.

[Return To Main Page](#)

Table 5. Important species landed or raised in the Northeast, their landings, L (mt, 000s), ex-vessel values, V (\$, million) and prices, P (\$/lb), 1993-1997¹.

Year	L	V	P	L	V	P	L	V	P	L	V	P	L	V	P
	American lobster			Sea scallops			Blue crab			Atlantic salmon ²			Oysters		
1993	26.3	160.4	2.77	7.4	97.9	6.03	57.1	69.5	0.55	6.7	42.6	2.86	4.2	35.9	3.90
1994	31.7	207.3	2.96	7.6	84.0	5.00	43.1	73.8	0.78	6.1	35.6	2.64	2.8	36.1	5.94
1995	31.8	214.6	3.06	8.0	91.1	5.16	56.7	101.2	0.81	10.0	56.7	2.56	3.1	38.0	5.48
1996	32.5	242.8	3.39	7.9	98.2	5.64	37.7	64.3	0.77	10.0	46.2	2.10	2.8	36.9	6.02
1997	32.3	223.6	3.14	6.0	87.4	6.60	43.0	79.4	0.84	12.2	49.5	1.84	3.2	39.4	5.61
	Goosefish			Hard clams			Surfclams			Menhaden			Squid (Loligo)		
1993	18.5	21.7	0.53	4.3	43.6	4.58	33.5	38.2	0.52	317.0	41.9	0.06	22.3	29.6	0.60
1994	21.1	26.2	0.56	3.5	35.3	4.61	32.4	45.7	0.64	252.3	34.0	0.06	22.6	31.9	0.64
1995	25.1	36.1	0.65	4.2	42.1	4.50	30.1	45.1	0.68	344.9	45.7	0.06	18.5	23.8	0.58
1996	25.3	32.3	0.58	3.2	35.1	4.94	28.8	41.3	0.65	283.1	37.9	0.06	12.5	18.6	0.68
1997	28.8	35.0	0.55	3.0	34.2	5.09	25.6	36.1	0.64	245.4	33.6	0.06	16.2	26.5	0.74
	Atlantic cod			Sea urchins			Ocean quahogs			Bluefin tuna			Winter flounder		
1993	23.0	45.0	0.89	19.2	27.2	0.64	26.2	29.3	0.51	1.0	19.3	8.92	5.3	15.3	1.31
1994	17.8	36.6	0.93	17.6	33.4	0.86	21.1	18.7	0.40	1.0	19.6	8.72	3.6	11.2	1.41
1995	13.7	28.6	0.95	15.6	35.7	1.04	23.2	21.7	0.42	0.9	20.4	10.66	4.0	12.7	1.43
1996	14.3	26.7	0.85	10.1	24.0	1.08	21.1	20.4	0.44	0.9	16.5	8.42	4.8	14.5	1.38
1997	13.0	24.5	0.86	8.5	20.5	1.09	19.8	19.8	0.45	1.0	16.4	7.40	5.3	15.7	1.34
	Summer flounder			Silver hake			Atlantic herring			Northern shrimp			American plaice		
1993	4.4	15.3	1.57	17.3	14.0	0.37	49.5	6.5	0.06	2.3	5.2	1.03	5.8	15.0	1.17
1994	5.0	18.3	1.67	16.0	13.7	0.39	45.2	5.7	0.06	3.7	6.5	0.79	5.1	13.5	1.21
1995	5.0	20.4	1.86	14.7	14.0	0.43	68.8	8.8	0.06	6.8	13.2	0.88	4.6	13.2	1.29
1996	4.0	14.3	1.64	16.2	13.6	0.38	87.7	10.9	0.06	9.5	15.1	0.72	4.4	12.3	1.27
1997	4.1	15.5	1.73	15.6	15.1	0.44	96.9	11.6	0.05	6.4	11.5	0.82	3.9	11.4	1.31
	Soft clams			Atlantic mackerel			Yellowtail flounder			Striped bass			Penaeid shrimp		
1993	2.1	20.5	4.47	4.7	1.3	0.13	3.6	10.4	1.30	0.6	2.7	2.05	0.0	0.0	3.00
1994	1.2	12.5	4.80	8.9	2.6	0.13	3.1	8.1	1.19	0.8	3.1	1.81	0.0	0.0	4.93
1995	1.1	10.7	4.48	8.4	2.7	0.15	1.9	6.0	1.42	1.8	6.2	1.54	0.0	0.0	2.27
1996	1.0	8.3	3.75	15.8	4.6	0.13	2.4	7.6	1.43	2.1	8.0	1.72	0.0	0.0	2.31
1997	1.0	9.9	4.31	15.4	9.5	0.28	2.9	9.5	1.50	2.3	7.5	1.46	1.0	7.4	3.23
	Witch flounder			Scup			Squid (Illex)			Spiny dogfish			Swordfish		
1993	2.6	9.0	1.57	4.4	5.7	0.58	18.0	8.5	0.21	15.8	4.6	0.13	1.5	9.9	2.92
1994	2.7	9.3	1.58	4.0	5.8	0.66	18.4	10.4	0.26	13.4	4.3	0.15	1.2	8.5	3.09
1995	2.2	8.4	1.73	2.9	5.8	0.91	14.1	8.1	0.26	16.3	7.1	0.20	1.2	7.7	2.89
1996	2.1	7.7	1.67	2.7	6.3	1.07	17.0	9.7	0.26	18.2	7.5	0.19	0.8	5.6	3.06
1997	1.8	6.6	1.69	2.2	6.4	1.32	13.6	6.1	0.20	17.6	5.8	0.15	1.0	5.5	2.60
	Pollock			Tilefish			Butterfish			Black sea bass			Yellowfin tuna		
1993	5.7	8.4	0.67	1.8	5.0	1.23	4.5	6.8	0.69	1.3	2.9	0.99	0.6	2.6	2.06
1994	3.7	6.8	0.82	0.8	3.4	1.96	3.6	4.1	0.51	0.8	2.2	1.18	0.6	2.0	1.52
1995	3.4	6.8	0.92	0.7	2.9	1.98	2.2	2.6	0.55	0.9	2.9	1.50	1.1	3.8	1.64
1996	3.0	4.5	0.69	1.1	4.2	1.68	3.6	5.2	0.66	1.5	3.6	1.13	0.4	1.9	2.14
1997	4.3	5.3	0.57	1.8	4.9	1.24	2.8	4.7	0.76	1.2	3.9	1.48	0.9	3.7	1.96

	Haddock			Skates			White hake			Bigeye Tuna			Weakfish			
	L	V	P	L	V	P	L	V	P	L	V	P	L	V	P	
1993	0.9	2.7	1.38	12.9	3.0	0.11	7.5	7.2	0.44	0.8	5.9	3.55	1.1	1.9	0.78	
1994	0.3	1.0	1.38	8.8	5.0	0.26	4.7	5.7	0.55	0.8	7.7	4.36	1.1	2.0	0.77	
1995	0.4	1.2	1.33	7.1	3.4	0.22	4.3	6.2	0.65	0.9	8.0	4.19	1.8	2.5	0.62	
1996	0.6	1.5	1.18	14.2	6.3	0.20	3.3	4.6	0.63	0.4	2.8	3.62	1.5	2.6	0.80	
1997	1.5	3.6	1.09	10.5	3.3	0.14	2.2	3.2	0.65	0.5	2.9	2.85	2.4	2.8	0.53	
	Bluefish			Mussels			Red hake			Windowpane flounder			Redfish			
1993	2.8	1.9	0.31	3.0	2.7	0.40	1.7	0.9	0.25	1.7	2.3	0.63	0.8	0.8	0.46	
1994	3.1	1.9	0.28	2.5	1.9	0.35	1.7	0.9	0.25	0.5	0.6	0.52	0.4	0.6	0.62	
1995	2.3	1.8	0.36	3.0	2.5	0.37	1.6	1.0	0.28	0.8	1.0	0.58	0.4	0.6	0.62	
1996	2.7	1.9	0.32	2.6	2.3	0.39	1.1	0.7	0.29	1.0	0.9	0.42	0.3	0.5	0.66	
1997	3.3	2.2	0.30	2.0	1.7	0.38	1.3	0.8	0.28	0.5	0.6	0.51	0.3	0.3	0.54	
	Total Shellfish ³			Total Finfish ³			Total ³									
	L	V	P	L	V	P	L	V	P							
1993	210.7	542.6		537.2	344.5		747.9	887.1								
1994	216.7	604.7		461.4	319.3		678.1	923.9								
1995	223.2	653.2		587.3	373.2		810.6	1026.4								
1996	194.5	623.9		555.3	335.8		749.8	959.7								
1997	189.8	612.8		531.3	348.5		721.1	961.3								

¹ North Carolina landings and price data not included for 1993-1996.

² Amounts raised and value at first sale

³ Price not meaningful for total figures

Table 6

Table 6. Landings (mt, 000s, landed weight) and ex-vessel revenue (\$, millions) for Northeast fisheries, by gear type, 1994-1996.

Gear Types	1994		1995		1996	
	Landings	Revenue	Landings	Revenue	Landings	Revenue
Pots traps- lobster	26.3	149.4	32.2	200.9	34.4	239.7
Otter trawl, bottom-fish	123.0	177.3	105.0	168.2	133.2	164.5
Dredge-sea scallop	10.4	85.0	9.9	88.8	9.2	96.8
Dredge-surf clam ocean quahog	51.6	56.2	52.9	62.5	49.9	58.7
Purse seine- menhaden	247.3	32.4	335.4	43.7	277.9	36.9
Sink gill net	26.2	31.4	29.6	35.8	30.8	34.9
Pots traps- blue crab	31.3	51.5	21.2	35.8	6.9	24.1
Diving gear	13.4	26.8	12.7	30.2	8.3	20.7
Long line, bottom and pelagic	6.7	28.1	7.3	26.8	5.4	18.7
Otter trawl, bottom-shrimp	3.6	6.2	7.0	12.9	9.2	14.6
Hand line, other	1.1	13.9	1.5	16.5	2.1	14.6
Rakes	1.2	13.0	1.2	15.3	1.1	13.4
Tongs and grabs	1.3	14.9	1.1	13.9	1.1	13.3
Hoes	1.3	12.9	1.1	11.0	0.9	7.8
Purse seine- herring	34.5	4.5	34.6	4.6	55.1	7.0
Otter trawl, bottom-scallops	0.7	5.8	0.8	7.2	0.7	6.6
Unknown ¹	24.6	142.5	44.7	162.3	64.2	128.0
All other gears	48.3	71.4	61.8	56.2	31.3	52.5
Total	652.9	923.2	759.9	992.6	721.7	952.8

¹ Includes oyster dredge

Table 7

Table 7. Number of identifiable vessels using otter trawls and scallop dredges, and total number of vessels regardless of gear type in the Northeast region by tonnage class (TC¹) and sub-region, 1991-1996.

Year/Subregion		TC1	Otter Trawls				Total	TC1	Scallop Dredges			Total	TC1	All Vessels ²	
TC4+	Total		TC2	TC3	TC4+	TC2			TC3	TC4+	TC2			TC3	
1991	Northeast ³		403	483	139	1025		32	114	153	299		808	735	
309	1852														
241	New England		368	339	115	822		29	65	126	220		628	469	
108	1338														
	Mid-Atlantic		36	170	34	240		4	72	52	128		192	335	
	635														
	Chesapeake														
1992	Northeast		422	473	117	1012		50	112	148	310		871	722	
298	1891														
227	New England		374	328	93	795		48	62	119	229		681	454	
106	1362														
	Mid-Atlantic		51	174	36	261		3	71	50	124		203	333	
	642														
	Chesapeake														
1993	Northeast		435	484	121	1040		69	100	136	305		923	731	
285	1939														
218	New England		341	327	98	766		67	50	110	227		677	452	
104	1347														
	Mid-Atlantic		96	189	41	326		2	60	40	102		256	338	
	698														
	Chesapeake														
1994	Northeast	34	502	446	131	1113	2	65	82	131	280	405	1622	673	
280	2980														
198	New England	31	419	299	94	843	2	64	29	89	184	389	1387	410	
149	2384														
	Mid-Atlantic	3	86	184	55	328	0	1	68	85	154	18	274	332	
	773														
	Chesapeake														
1995	Northeast	47	606	442	133	1228	3	64	80	134	281	442	1684	646	
283	3055														
221	New England	40	488	291	90	909	3	62	36	106	207	387	1395	408	
133	2411														
	Mid-Atlantic	7	122	190	56	375	0	2	59	71	132	62	349	318	
	862														
	Chesapeake														
1996	Northeast	47	624	424	134	1229	9	120	82	132	343	409	1863	607	
276	3155														
217	New England	44	510	284	96	934	9	118	43	105	275	379	1572	381	
113	2549														
	Mid-Atlantic	3	117	182	54	356	0	2	56	56	114	32	352	303	
	800														
	Chesapeake														

¹ TC1=less than 5 gross registered tons (grt), TC2=5-50 grt,TC3=51-150 grt,TC4=151+grt.

² The "All Vessels" columns provide a unique count of vessels regardless of gear used.

Table 7

³ Northeast vessels include those that landed at least once in Maine, Massachusetts, New Hampshire, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, or Delaware. New England vessels include those that landed at least once in Maine, Mass, New Hampshire, Rhode Island, or Connecticut. Mid Atl. Chesapeake vessels include those that landed at least once in New York, New Jersey, Maryland, Virginia, or Delaware. The "Northeast" row eliminates duplication of vessels which landed in both sub-regions.

Table 8

Table 8. Percentages of landings (by weight) by gear type for selected species in the Northeast, 1996.

Atlantic GEAR TYPE	Swordfish	Yellowtail		Haddock	Other multi- species ¹	Menhaden	Summer	American	Sea
		Cod	flounder				flounder	lobster	scallops
Bottom trawl	2.5%	57.4%	87.1%	66.3%	91.7%	0.1%	94.9%	1.6%	8.6%
1.9%									
Midwater trawl	34.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1.1%									
Hook gear	0.0%	9.1%	0.0%	17.0%	0.8%	0.0%	0.0%	0.0%	0.0%
87.7%									
Gillnet	0.0%	29.9%	10.8%	14.9%	7.0%	0.2%	0.3%	0.2%	0.0%
9.2%									
Pots/traps	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%
0.0%									
Lobster pot	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	98.2%	0.0%
0.0%									
Scallop dredge	0.0%	0.0%	1.5%	0.0%	0.1%	0.0%	1.1%	0.0%	91.2%
0.0%									
Other gear	62.9%	3.4%	0.6%	1.8%	0.4%	99.7%	3.3%	0.0%	0.2%
0.1%									
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%
100%									

Bluefin GEAR TYPE	Atlantic mackerel	Butter- fish	Loligo	Black sea bass	Scup	Goosefish	Northern shrimp
Bottom trawl	84.9%	94.2%	94.7%	51.1%	81.7%	51.7%	96.2%
0.0%							
Midwater trawl	8.3%	2.3%	3.6%	0.0%	0.0%	0.0%	0.0%
0.0%							
Hook gear	0.0%	0.0%	0.0%	0.1%	0.0%	0.2%	0.0%
2.5%							
Gillnet	1.3%	0.7%	0.0%	0.6%	0.3%	33.0%	0.0%
0.0%							
Pots/traps	1.4%	0.7%	0.6%	38.8%	13.1%	0.0%	3.8%
0.0%							
Lobster pot	0.0%	0.0%	0.0%	2.4%	0.3%	0.0%	0.0%
0.0%							
Scallop dredge	0.0%	0.0%	0.0%	0.0%	0.0%	15.1%	0.0%
0.0%							
Other gear	4.1%	2.1%	1.1%	7.0%	4.6%	0.0%	0.0%
97.5%							
Total	100%	100%	100%	100%	100%	100%	100%
100%							

¹ Includes pollock, winter flounder, witch flounder, windowpane flounder, American plaice, redfish, white hake, red hake, whiting, and ocean pout.

Table 9. Numbers of unique permitted vessels by tonnage class¹, permit, and category², 1994-1996 Vessels with both commercial and recreational permits under a single FMP are listed under commercial only, to avoid double counting.

Fishery Management Plan		Tonnage Class 1			Tonnage Class 2			Tonnage Class 3			Tonnage Class 4			TOTALS		
		1994	1995	1996	1994	1995	1996	1994	1995	1996	1994	1995	1996	1994	1995	1996
Multispecies³	Limited access	66	70	102	1090	1056	1107	450	437	427	139	132	127	1745	1695	1763
	Open access	867	839	415	1681	1762	877	308	319	227	122	123	114	2978	3043	1633
	Total	933	909	517	2771	2818	1984	758	756	654	261	255	241	4723	4738	3396
Sea Scallop³	Limited access	<3	<3	<3	22	16	15	167	170	159	170	163	154	N/A	N/A	N/A
	Open access	179	189	159	1230	1328	1308	454	445	430	110	112	101	1973	2074	1998
	Total	N/A	N/A	N/A	1252	1344	1323	621	615	589	280	275	255	N/A	N/A	N/A
Lobster⁴	Limited access commercial		217	321		1972	2453		465	489		182	201		2836	3464
	Limited access recreational		3	<3		16	14		<3	<3		0	0		N/A	N/A
	Open access commercial	495			2302			709			296			3802		
	Open access recreational	62			270			50			0			382		
	Total	557	N/A	N/A	2572	1988	2467	759	N/A	N/A	296	182	201	4184	N/A	N/A
Summer Flounder	Limited access commercial	58	49	41	410	388	358	512	500	480	226	218	207	1206	1155	1086
	Open access Charter/Party	108	99	67	545	530	448	99	103	93	<3	<3	<3	N/A	N/A	N/A
	Total	166	148	108	955	918	806	611	603	573	N/A	N/A	N/A	N/A	N/A	N/A
Atlantic Mackerel, Squid & Butterfish	Open access commercial	476	449	416	1616	1598	1641	691	662	656	289	276	265	3072	2985	2978
	Open access recreational	106	91	68	513	467	421	103	105	103	0	0	0	722	663	592
	Total	582	540	484	2129	2065	2062	794	767	759	289	276	265	3794	3648	3570

Bluefin Tuna ³	Open access recreational	2297	2908	7887	1019	1399	4419	16	31	126	0	7	30	3332	4345	12462
	Open access commercial	4441	5196	5531	6000	7451	7963	572	856	810	137	217	212	11150	13720	14516
	Limited access commercial	0	0	0	0	0	0	<3	<3	<3	4	4	4	N/A	N/A	N/A
	Total	6738	8104	13418	7019	8850	12382	N/A	N/A	N/A	141	228	246	N/A	N/A	N/A
Surf Clam and Ocean Quahog ⁵	ONLY surf clam open access commercial & recreational	41	41	28	199	186	182	99	88	92	45	43	41	384	358	343
	ONLY ocean quahog open access comm. & rec.	10	11	14	102	113	130	16	16	17	3	3	3	131	143	164
	BOTH surf clam & ocean quahog open access comm. & rec	74	71	82	429	459	535	312	317	324	153	156	155	986	1003	1096
	Total	125	123	124	730	758	847	427	421	433	201	202	199	1483	1504	1603

¹ Tonnage class (TC) 1 vessels are <5 GRT; TC 2, 5-50 GRT; TC3, 51-150 GRT; TC4, 151+ GRT.

² Where a category contains fewer than 3 vessels, the exact number is not reported, for purposes of confidentiality. Rows or columns containing such entries show no totals, but are labeled "N/A."

³ For these FMPs there are also multiple sub-categories within some of the categories listed here.

⁴ In 1994 there were two categories for American Lobster, open access commercial and open access recreational. In 1995 and 1996 these became limited access commercial and limited access recreational. For years when a given category did not exist, the cell is blank.

⁵ These two fisheries are under an ITQ system. Possession of a permit, therefore, does not convey harvest privileges (see text).

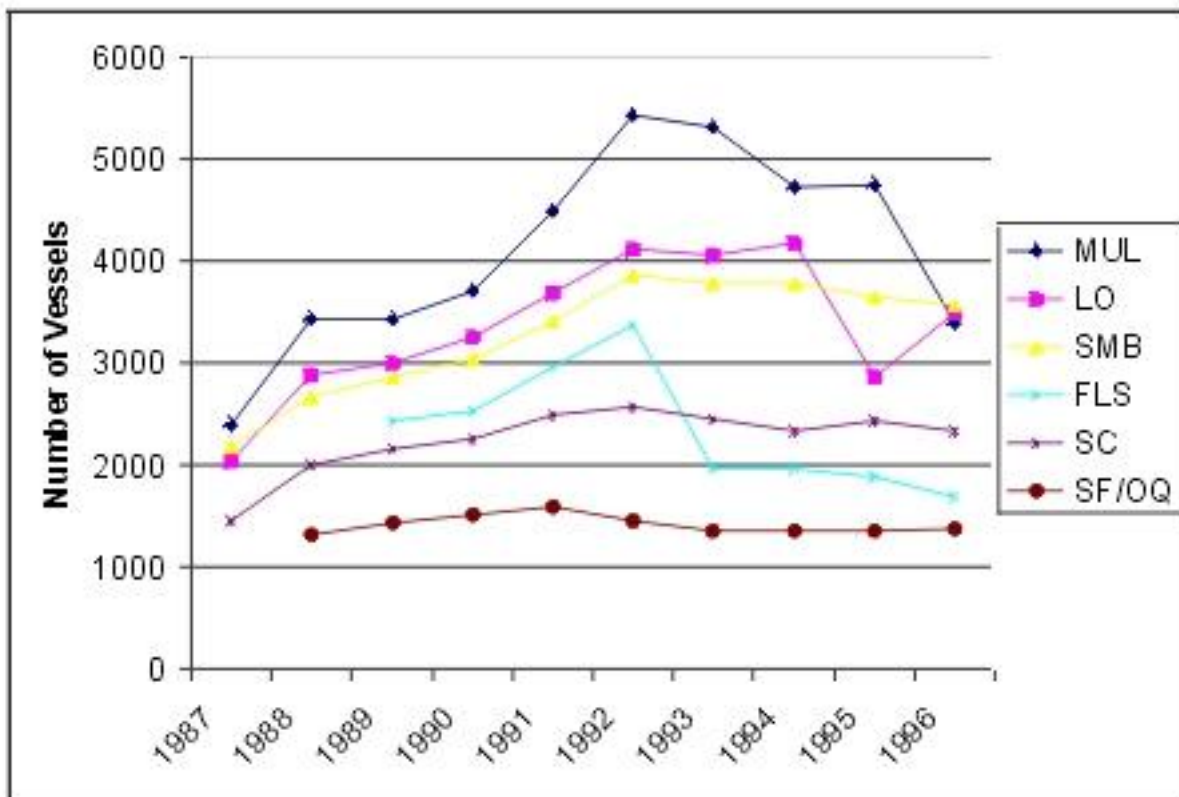


Figure 10

Numbers of unique permitted vessels, 1987-1996.
 (MUL=Multispecies; LO=American Lobster; SMB=Atlantic mackerel, squid and butterfish; FLS=Summer flounder; SC=Sea scallop; SF/OQ= Surf clam and Ocean quahog.)

Table 10. Number of vessels holding selected FMP permits or permit combinations in the Northeast fisheries, by year, 1994-1996 (Only the most common combinations are shown¹.)

Permit or Permit Combination	Number of Permits by Year		
	<u>1994</u>	<u>1995</u>	<u>1996</u>
American Lobster Only	457	646	1,083
Multispecies; Atlantic Sea Scallop; American Lobster; Summer Flounder; Atlantic Mackerel, Squid and Butterfish	951	718	743
Multispecies; Atlantic Sea Scallop; American Lobster; Atlantic Mackerel, Squid and Butterfish	790	517	581
Multispecies Only	634	697	570
Multispecies; Summer Flounder; Atlantic Mackerel, Squid and Butterfish	273	546	447
Multispecies; American Lobster	509	418	417
Multispecies; Atlantic Mackerel, Squid and Butterfish	343	539	396
Atlantic Mackerel, Squid and Butterfish Only	146	149	318
Multispecies; Atlantic Sea Scallop; Atlantic Mackerel, Squid and Butterfish	46	391	314
Multispecies; Atlantic Sea Scallop; Summer Flounder; Atlantic Mackerel, Squid and Butterfish	20	273	213
Multispecies; American Lobster; Atlantic Mackerel, Squid and Butterfish	444	193	206

¹ All combinations representing 5% or more of the total number of unique permitted vessels for a given year -- excluding permits for tunas and for surf clams and ocean quahogs (see text).

Table 11. Characteristics, activity and revenue data for New England otter trawl vessels by vessel tonnage class, 1994-1996. Data for all trips included, regardless of gear used.

Tonnage Class 3			Tonnage Class 1 ¹ Tonnage Class 4			Tonnage Class 2			
1995	1996	1994	1994	1995	1996	1994	1995	1996	1994
Number of vessels									
291	284	94	31	40	44	419	488	510	299
Average age									
28	36	14	14	15	15	24	22	21	22
Average GRT									
100	100	177	3	3	3	24	23	23	102
Average days absent									
126	128	136	-2	-2	-2	129	97	108	154
Average crew size									
4.0	4.2	6.4	2.3	2.2	2.3	2.5	2.5	2.4	4.2
Revenue per day absent (\$)									
2064	2148	4418	-2	-2	-2	488	707	621	1637
Landings per day absent (lbs)									
3121	3579	7739	-2	-2	-2	738	955	962	2583
Total revenue (\$,millions)									
75.7	78.1	56.5	0.8	0.9	1.1	26.4	33.4	34.2	75.4

¹ Tonnage Class (TC) 1 vessels, < 5 Gross Registered Tons (GRT); TC2 , 5-50 GRT; TC3, 51-150 GRT; and TC4 ,> 150 GRT.

² Less than 10 vessels available on which to base effort estimates

Table 12. Characteristics, activity, and revenue data for Mid-Atlantic otter trawl vessels, by vessel tonnage class, 1994-1996. Data for all trips included, regardless of gear used.

Tonnage Class 4			Tonnage Class 2 ¹			Tonnage Class 3		
			1994	1995	1996	1994	1995	1996
1994	1995	1996						
Number of vessels			86	122	117	184	190	182
55	56	54						
Average age			25	24	21	21	41	43
17	17	16						
Average GRT			30	26	24	104	108	108
180	177	180						
Average days absent			125	55	97	149	125	155
142	118	172						
Average crew size			2.4	2.2	2.3	4.6	4.7	4.8
7.1	7.5	7.3						
Revenue per day absent (\$)			286	1068	574	1291	1822	1569
3161	3846	2722						
Landings per day absent (lbs)			566	1736	762	3410	3832	3627
8260	8780	6895						
Total revenue (\$, millions)			3.1	7.2	6.5	35.4	43.3	44.2
24.7	25.4	25.3						

¹ Tonnage class (TC) 2 vessels, 5-50 Gross Registered Tons (GRT); TC3, 51-150 GRT; and TC4, >150 GRT. TC1 vessels omitted due to insufficient data.

Table 13 . Characteristics, activity, and revenue data for Northeast vessels using scallop dredges, by vessel tonnage class, 1994-1996. Data for all trips included, regardless of gear used.

Tonnage Class 4			Tonnage Class 2 ¹			Tonnage Class 3		
			1994	1995	1996	1994	1995	1996
1994	1995	1996						
Number of vessels			65	64	120	82	80	82
131	134	132						
Average age			22	21	19	21	44	34
18	18	17						
Average GRT			23	21	19	120	118	120
181	181	180						
Average days absent			73	70	61	195	220	218
198	242	295						
Average crew size			2.6	2.5	2.5	7.5	7.6	7.3
9.1	9.1	8.3						
Revenue per day absent (\$)			639	665	498	1580	1518	1586
2310	2011	1825						
Landings per day absent (lbs, live wt)			873	979	848	4499	2714	3865
3784	3191	3671						
Total revenue (\$ millions)			3.0	3.0	3.6	25.3	26.7	28.4
59.9	65.2	71.1						

¹ Tonnage Class (TC) 2 vessels, 5-50 Gross Registered Tons (GRT); TC3, 51-150 GRT; and TC4, >150 GRT. TC 1 vessels were omitted due to insufficient data.

Table 14. Characteristics, activity, and revenue data for Northeast vessels using shrimp trawls, by vessel tonnage class, 1994 - 1996. Data included for all trips and trips using shrimp gear only.

Tonnage Class 3			Tonnage Class 1 ¹			Tonnage Class 2		
			1994	1995	1996	1994	1995	1996
1994	1995	1996						
All Trips								
Number of vessels			8	15	20	202	237	258
36	49	52						
Average age			12	15	15	19	18	18
24	24	20						
Average GRT			3	3	3	22	22	22
77	80	85						
Average days absent			-2	-2	-2	37	34	39
-2	-2	-2						
Average crew size			2.1	2.3	2.1	2.3	2.4	2.3
3.4	3.2	3.3						
Revenue per day absent (\$)			-2	-2	-2	1952	2250	1781
-2	-2	-2						
Landings per day absent (lbs)			-2	-2	-2	2711	2720	2487
-2	-2	-2						
Total revenue (\$, millions)			0.5	0.8	0.8	14.6	18.1	17.9
7.5	12.1	13.5						
Trips Using Shrimp Trawls Only								
Average days absent			-2	-2	-2	28	-2	24
-2	-2	-2						
Average crew size			2.1	2.3	2.1	2.3	2.4	2.3
3.4	3.2	3.3						
Revenue per day absent (\$)			-2	-2	-2	752	-2	1310
-2	-2	-2						
Landings per day absent (lbs)			-2	-2	-2	971	-2	1834
-2	-2	-2						

¹ 1 Tonnage Class (TC) 1 vessels, < 5 Gross Registered Tons (GRT); TC2, 5-50 GRT; TC3 51-150 GRT; and TC4, > 150 GRT.

² Less than 10 vessels available on which to base effort estimates

Table 15. Characteristics, activity, and revenue data for Northeast vessels using gillnets, by vessel tonnage class, 1994-1996. Data included for all trips and trips using gillnets only.

Tonnage Class 3		Tonnage Class 1 ¹			Tonnage Class 2			1994
		1994	1995	1996	1994	1995	1996	
1995	1996							
All Trips								
Number of vessels		14	37	25	331	424	394	22
27	53							
Average age		17	17	16	19	19	17	16
18	17							
Average GRT		3	2	3	18	19	20	97
84	80							
Average days absent		43	24	55	150	105	121	-2
153	165							
Average crew size		1.9	1.8	2.3	2.7	2.7	2.7	4.2
3.8	4.0							
Revenue per day absent (\$)		448	1439	786	553	874	753	3230
2232	1112							
Landings per day absent (lbs)		1338	2844	1701	1061	1594	1532	3683
2031	1607							
Total revenue (\$, millions)		0.3	1.3	1.1	27.5	38.9	35.9	6.9
7.1	9.7							
Trips Using Gillnets Only								
Average days absent		38	17	36	140	94	104	-2
-2	116							
Average crew size		1.9	1.8	2.3	2.7	2.7	2.7	4.2
3.8	4.0							
Revenue per day absent (\$)		331	1463	661	472	718	632	-2
-2	402							
Landings per day absent (lbs)		1170	3358	1988	1000	1485	1488	-2
-2	694							

¹ Tonnage Class (TC) 1 vessels < 5 Gross Registered Tons (GRT), TC2, 5-50 GRT, TC3, 51-150 GRT; TC4 were omitted due to insufficient data.

² Less than 10 vessels available on which to base effort estimates

Table 16 . Characteristics, activity, and revenue data for Northeast vessels using hook gear, by vessel tonnage class, 1994-1996. Data included for all trips and trips using hook gear only.

Tonnage Class 3			Tonnage Class 1 ¹			Tonnage Class 2			1994
			Tonnage Class 4						
1995	1996	1994	1994	1995	1996	1994	1995	1996	1994
All Trips									
Number of vessels			58	70	19	184	217	184	61
59	58	13	16	17					
Average age			15	14	17	15	16	15	17
17	17	14	14	12					
Average GRT			2	2	3	20	20	20	94
95	95	173	168	167					
Average days absent			32	12	- ²	89	62	57	- ²
- ²	- ²	- ²	- ²	- ²					
Average crew size			2.2	2.0	2.2	2.5	2.6	2.6	4.6
4.5	5.5	6.2	6.4	5.5					
Revenue per day absent (\$)			262	2245	- ²	839	1240	1371	- ²
- ²	- ²	- ²	- ²	- ²					
Landings per day absent (lbs)			319	1895	- ²	934	1617	1983	- ²
- ²	- ²	- ²	- ²	- ²					
Total revenue (\$ million)			0.5	1.9	0.3	13.7	16.7	14.4	18.1
14.9	12.8	4.5	5.3	9.8					
Trips Using Hook Gear Only									
Average days absent			30	12	- ²	79	42	44	- ²
- ²	- ²	- ²	- ²	- ²					
Average crew size			2.2	2.0	2.2	2.5	2.6	2.6	4.6
4.5	5.5	6.2	6.4	5.5					
Revenue per day absent (\$)			122	1632	- ²	577	945	779	- ²
- ²	- ²	- ²	- ²	- ²					
Landings per day absent (lbs)			167	1035	- ²	491	1046	965	- ²
- ²	- ²	- ²	- ²	- ²					

¹ Tonnage Class (TC) 1 vessels, < 5 GRT, TC2, 5 -50 GRT, TC3 51-150 GRT, and TC4, > 150 GRT.

² Less than 10 vessels available on which to base effort estimates

Table 17. Characteristics, activity, and revenue data for Northeast surf clam and ocean quahog vessels and Mid-Atlantic vessels only, by vessel tonnage class, 1994-1996.

Tonnage Class 4			Tonnage Class 2 ¹			Tonnage Class 3		
			1994	1995	1996	1994	1995	1996
All Regional Surf Clam/Ocean Quahog Vessels								
Number of vessels			35	29	39	59	44	33
24	23	25						
Average age			20	20	13	25	23	21
20	20	20						
Average GRT			20	15	15	104	112	113
176	176	177						
Average days absent			31	60	51	80	106	87
-2	-2	-2						
2								
Average crew size			2.6	2.5	2.6	4.0	4.0	4.3
4.9	5.0	5.0						
Revenue per day absent (\$)			1409	1076	1201	6474	6422	
10228		-2	-2	-2				
Landings per day absent (lbs live wt.)			6524	4316	4433	73826	70176	
108811		-2	-2	-2				
2								
Total revenue (\$, millions)			1.5	1.9	2.4	30.6	30.0	29.4
22.9	21.3	23.2						
Mid-Atlantic Surf Clam/Ocean Quahog Vessels Only								
Number of vessels			9	3	2	49	36	31
24	22	21						
Average days absent			-2	-2	-2	65	109	66
-2	-2	-2						
Average crew size			3.0	3.6	3.5	4.0	4.3	4.3
4.9	4.7	5.2						
Revenue per day absent (\$)			-2	-2	-2	8490	7270	
14006		-2	-2	-2				
Landings per day absent (lbs live wt.)			-2	-2	-2	99727	78042	
145290		-2	-2	-2				
Total revenue (\$, millions)			0.6	0.7	0.4	27.0	28.5	28.7
22.9	20.8	19.9						

¹ Tonnage Class (TC) 2 vessels, 5-50 Gross Registered Tons (GRT); TC3 vessels, 51-150 GRT; and TC4 vessels, > 150 GRT. TC1 vessels were omitted due to insufficient data.

² Indicates less than 10 vessels available on which to base effort estimates

Table 18. Characteristics, activity, and revenue data for Northeast vessels using offshore lobster gear by vessel tonnage class, 1994-1996. Data included for all trips and offshore lobster trips only.

3	Tonnage Class 2 ¹			Tonnage Class	
	1994	1995	1996	1994	1995
1996					
All Trips					
Number of vessels	56	59	81	34	38
38					
Average age	20	21	18	15	14
13					
Average GRT	25	22	22	85	83
91					
Average days absent	48	35	35	199	184
221					
Average crew size	3.5	2.5	2.6	4.3	4.3
4.3					
Revenue per day absent (\$)	1844	2125	2061	1419	1471
1744					
Landings per day absent (lbs)	948	1282	1304	663	689
830					
Total revenue (\$, millions)	5.0	4.4	5.8	9.6	10.3
14.6					
Offshore Lobster Trips Only					
Average days absent	43	35	33	159	184
212					
Average crew size	3.5	2.5	2.6	4.3	4.3
4.3					
Revenue per day absent (\$)	1103	982	1477	1619	1361
1269					
Landings per day absent (lbs)	398	393	532	615	541
501					

¹ Tonnage Class (TC) 2 vessels, 5-50 Gross Registered Tons (GRT); TC3, 51-150 GRT. TC1 and TC4 vessels were omitted due to insufficient data.

Table 19

Table 19. Value (\$, millions) of imported edible fishery products the northeast, 1994 - 1996.

Product Category	1994	1995	1996
Fresh or frozen sea herring	3.4	1.6	1.6
Fresh whole groundfish, halibut and other flatfish	40.0	35.7	39.9
Frozen whole groundfish, halibut and other flatfish	18.3	20.1	15.8
Fresh or frozen salmon	68.1	70.9	89.9
Frozen groundfish blocks	120.7	157.0	152.5
Other fish fresh or frozen	69.9	71.3	74.9
Ocean perch fillets	61.2	53.6	41.0
Fresh groundfish and flatfish fillets	39.3	35.3	34.7
Frozen groundfish and flatfish fillets	287.2	296.4	276.2
Other fresh or frozen fillets	141.4	147.7	151.0
Salted or dried groundfish	35.2	34.3	35.0
Salted herring	3.8	3.4	3.2
Canned tuna	141.4	123.0	112.8
Canned sardines	29.2	32.2	28.7
Minced fish	25.4	12.1	12.8
Clam products	12.3	11.1	11.6
Crab products	87.1	86.0	77.1
Lobster, fresh	117.4	125.0	124.5
Lobster, frozen	161.7	168.0	149.0
Other lobster products	48.8	56.2	57.8
Scallops	158.4	134.5	122.8
Shrimp products	503.3	440.9	352.3
Squid	19.8	19.3	25.2
Other fishery products	164.7	182.8	212.5
Totals	2,358.0	2,318.4	2,202.8

Table 20. Value (\$, millions) of exported fishery products (including re-exports)¹ in the Northeast, 1994-1996.

Product Category	1994	1995	1996
Fresh or frozen herring	1.1	1.2	3.6
Processed herring products	9.8	11.1	15.5
Fresh or frozen salmon	25.6	36.1	36.2
Fresh or frozen cod	6.1	14.3	14.3
Fresh or frozen mackerel	2.1	2.3	4.7
Fresh or frozen dogfish	20.1	26.6	28.2
Butterfish	3.2	2.2	3.5
Fresh or frozen tuna	23.8	18.4	14.5
Other fish, fresh or frozen	74.2	95.3	96.0
Fresh or frozen fish fillets	22.5	30.0	32.4
Fish sticks & portions	3.1	4.3	4.8
Sea urchin, live	10.7	10.1	7.9
Sea urchin, roe	56.6	53.3	48.8
Other roe products	7.9	10.2	9.8
Shrimp fresh	3.1	2.0	3.2
Shrimp frozen	40.3	43.7	38.9
Shrimp canned	10.0	10.9	8.9
Lobster, fresh	107.7	109.7	127.6
Lobster, frozen	4.8	7.1	7.7
Other lobster products	0.2	0.4	1.0
Crab products	9.6	7.9	7.8
Fresh or frozen squid	22.4	21.1	12.7
Shellfish fresh	5.2	6.5	7.8
Clam products	4.4	4.4	4.7
Fresh or frozen scallops	14.0	15.1	15.5
Other shellfish	5.4	5.7	8.1
Other edible fishery products	40.8	37.8	45.5
Totals	534.7	587.7	609.6

¹ Re-exports consist of commodities of foreign origin which have entered the United States for consumption or into Customs bonded warehouses or U.S. Foreign Trade Zones, and which, at the time of exportation, are in substantially the same condition as when imported (U.S. Census Bureau, Guide to Foreign Trade Statistics. <http://www.census.gov/foreign-trade/www/sec2.html>)

Table 21

Table 21. New England imports (mt, 1000's) of selected fishery products¹ from Canada and all other countries 1994-1996.

Product	1994		1995		1996	
	Canada	Other	Canada	Other	Canada	Other
Cod	27.3	125.6	23.8	130.7	33.9	105.8
Flatfish ²	17.1	16.0	12.2	28.3	14.0	15.8
Other groundfish ³	58.3	185.4	49.9	204.2	44.1	244.5
Other finfish	28.1	44.1	23.6	45.5	31.6	39.4
Scallops	8.6	5.1	6.6	4.8	5.9	2.8
Total	139.4	376.2	116.1	413.5	129.5	408.3

¹ With the exception of scallops, product forms include whole fresh or frozen, frozen blocks, and fresh or frozen fillets. Finfish weights are expressed in live weight equivalents and scallops in meat weight equivalents.

² Includes halibut.

³ Includes cusk, hake, haddock, pollock and ocean perch.

Table 22

Table 22. Top ten countries receiving exports of fishery products from the Northeast region, ranked by value of exports (\$, millions), 1994-1996.

Country	Year		
	1994	1995	1996
Canada	151.4	180.5	189.1
Japan	118.2	106.7	96.7
France ¹	60.0	55.5	57.1
South Korea	19.7	31.6	27.2
Spain ¹	26.4	23.3	26.2
United Kingdom ¹	14.5	19.4	22.6
Italy ¹	23.9	23.3	21.1
Germany ¹	8.7	15.4	17.3
Hong Kong	7.9	9.0	11.6
Belgium ¹	10.8	9.2	8.8
Total	441.5	473.9	477.7

¹ Denotes European Union (E.U.) countries

Table 23

Table 23. Processing and wholesaling establishments for marine products and their employment levels for 1990-1995.¹

Year/Area Employees	Processing		Wholesaling		Total	
	Plants	Employees	Plants	Employees	Plants	
1990						
New England 8,760	247	5,832	689	2,928	936	
Mid-Atlantic ² 9,168	178	6,890	357	2,278	535	
Totals 17,928	425	12,722	1,046	5,206	1,471	
1991						
New England 8,506	245	5,530	685	2,976	930	
Mid-Atlantic 8,934	166	6,776	333	2,158	499	
Totals 17,440	411	12,306	1,018	5,134	1,429	
1992						
New England 8,279	232	5,367	698	2,912	932	
Mid-Atlantic 8,870	171	6,516	364	2,354	529	
Totals 17,149	403	11,883	1,062	5,266	1,465	
1993						
New England 7,768	221	4,727	670	3,041	891	
Mid-Atlantic 8,517	161	6,027	348	2,490	509	
Totals 16,285	382	10,754	1,018	5,531	1,400	
1994						
New England 8,265	206	4,794	614	3,471	820	
Mid-Atlantic 8,092	144	5,036	317	3,056	461	
Totals 16,357	350	9,830	931	6,527	1,281	
1995						
New England 10,874	194	4,952	625	5,043	819	9,995
Mid-Atlantic	127	5,385	697	5,489	824	
Totals 20,869	321	10,337	1,322	10,532	1,643	

Table 23

¹ Data for 1996 not available

² Mid-Atlantic region includes Virginia, Maryland, District of Columbia, Delaware, New Jersey, New York, and Pennsylvania

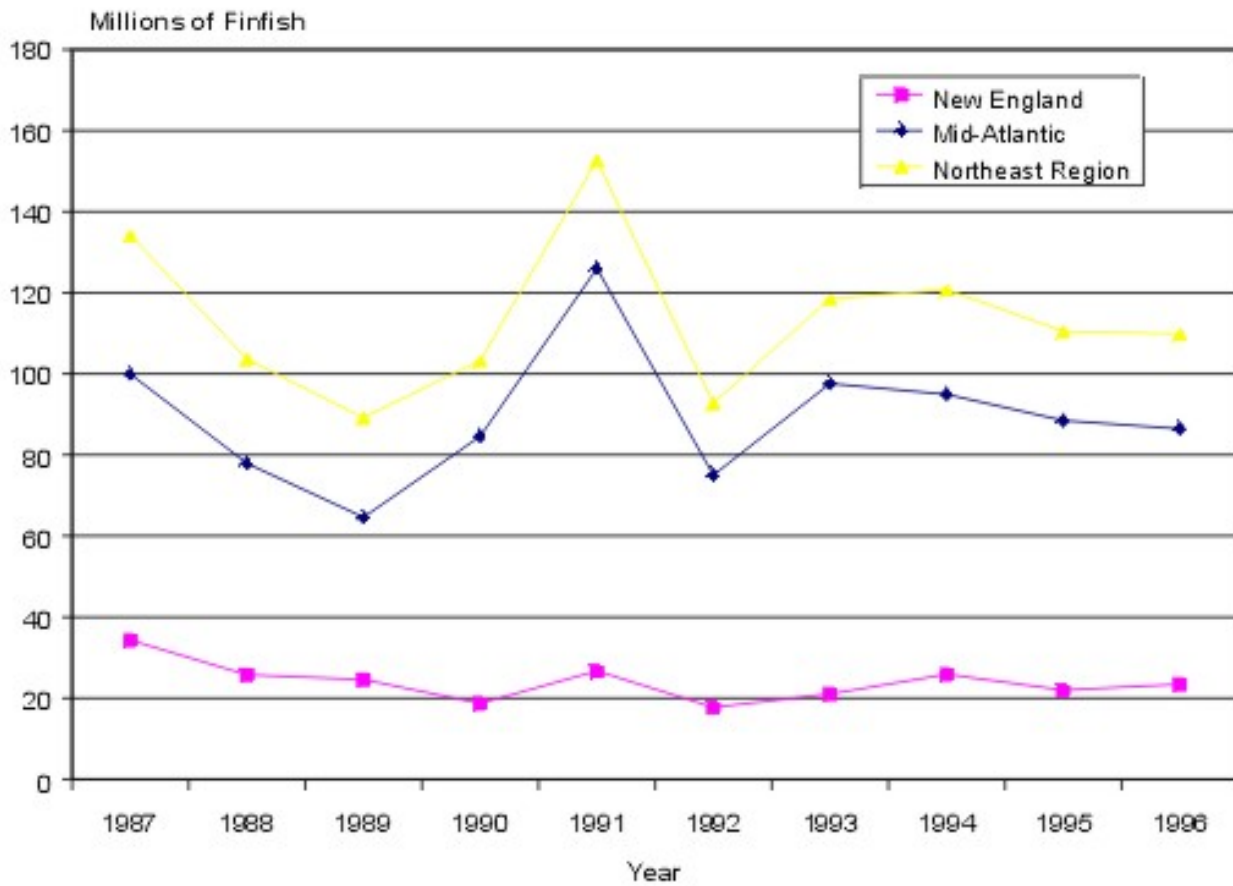


Figure 11

Estimated number of fish caught by recreational fishermen, by subregion.

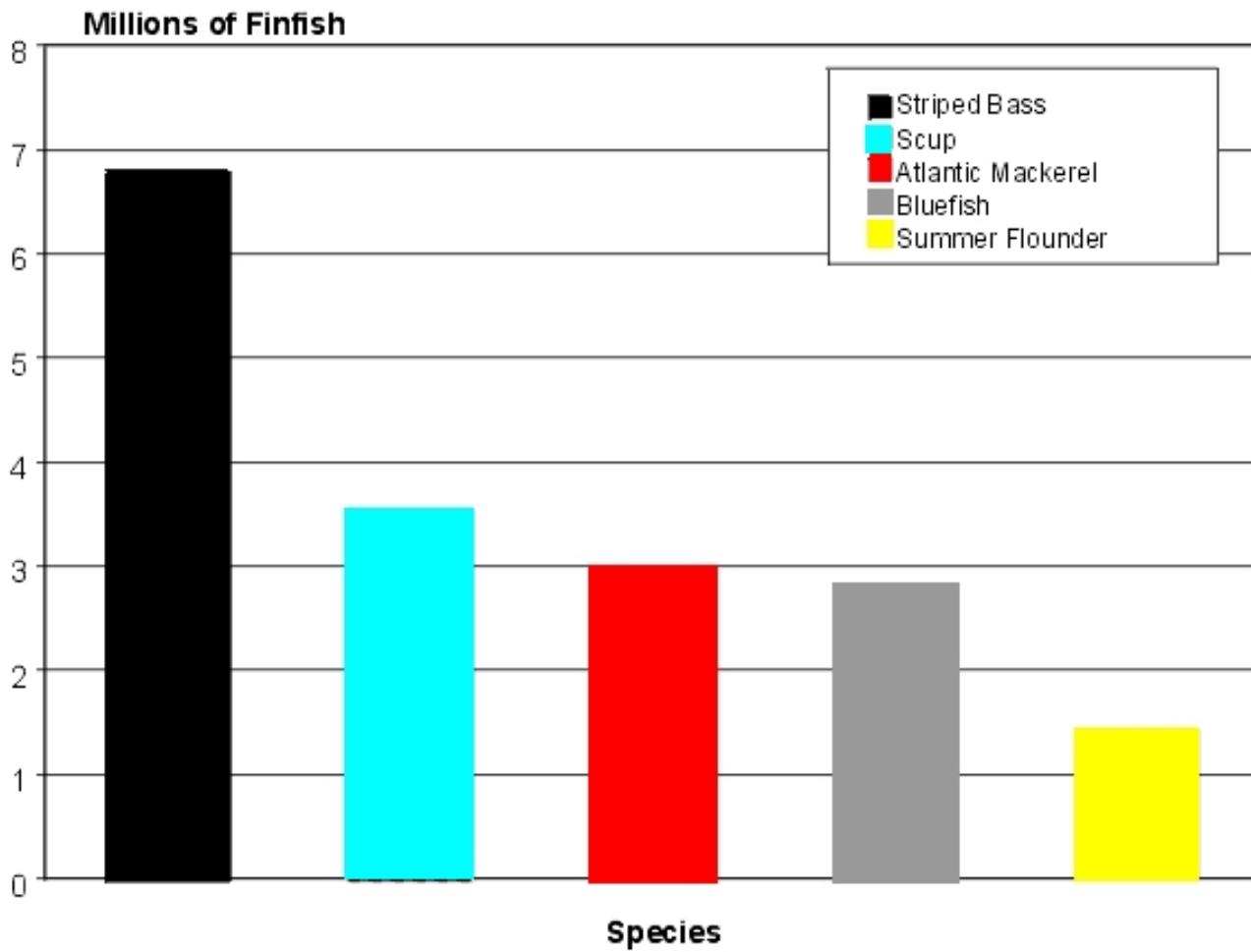


Figure 12

Top five species caught by recreational fishermen in New England in 1996.

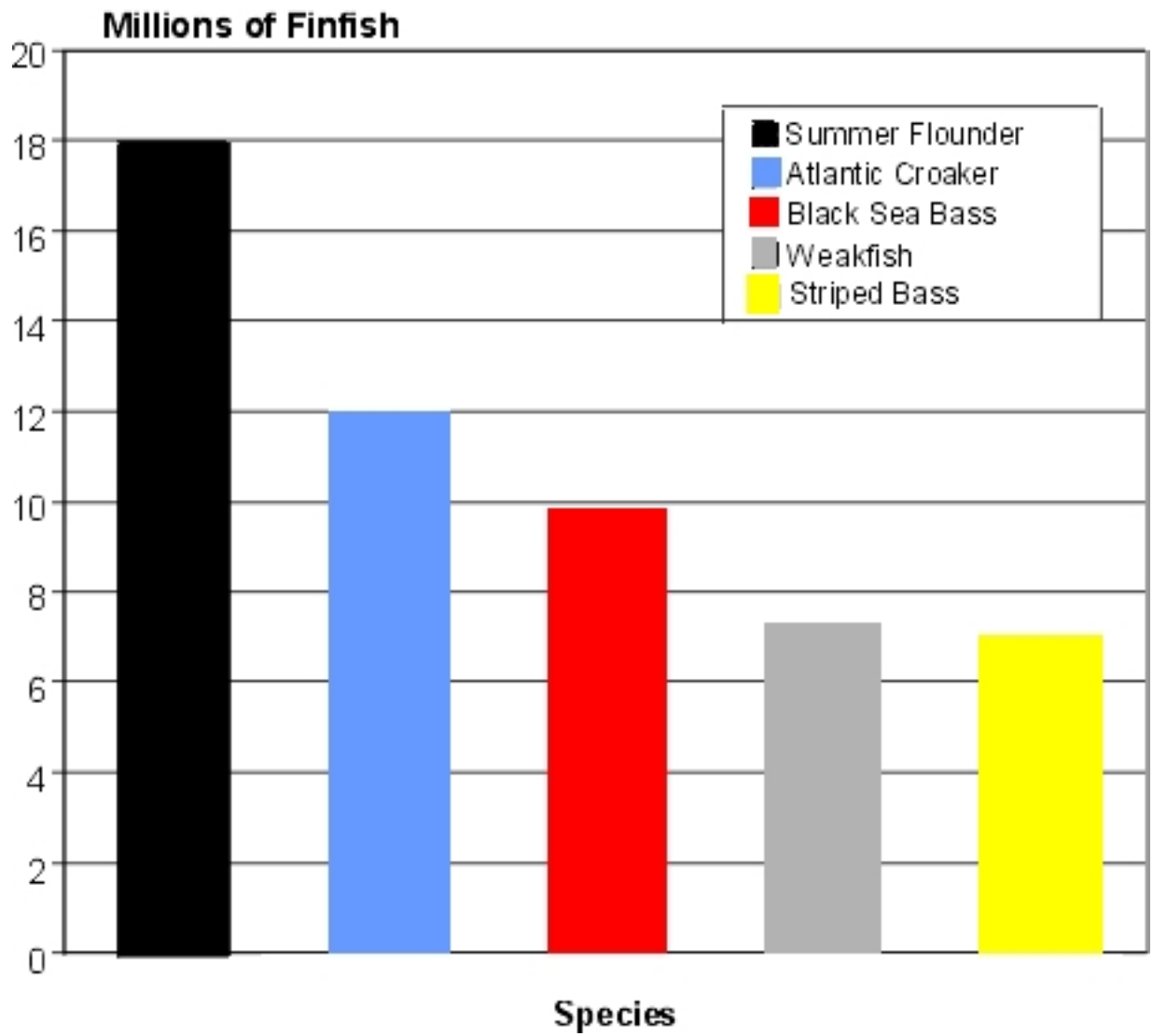


Figure 13

Top five species caught by recreational fishermen in the Mid-Atlantic in 1996.

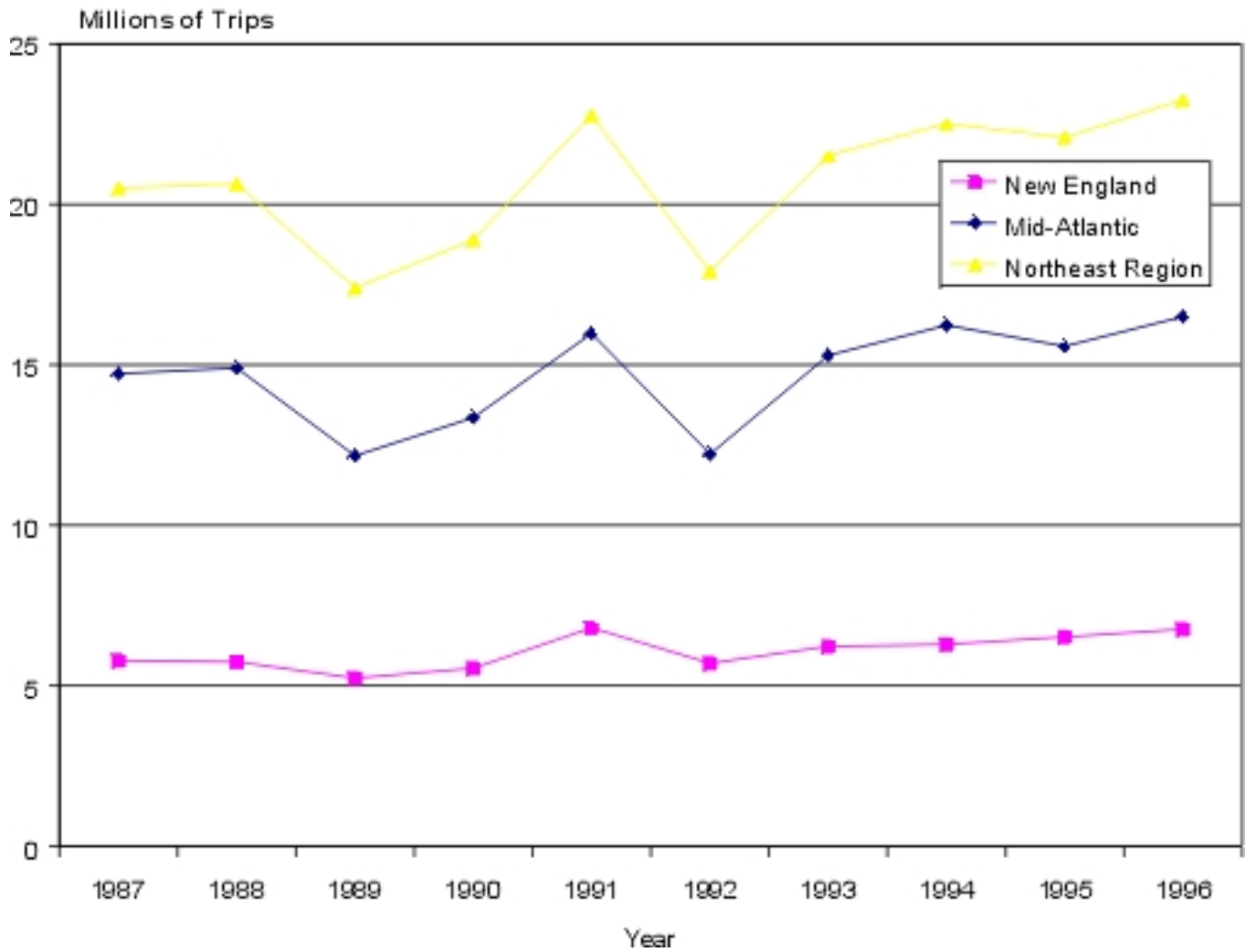


Figure 14

Estimated number of recreational fishing trips by subregion, 1987- 1996.

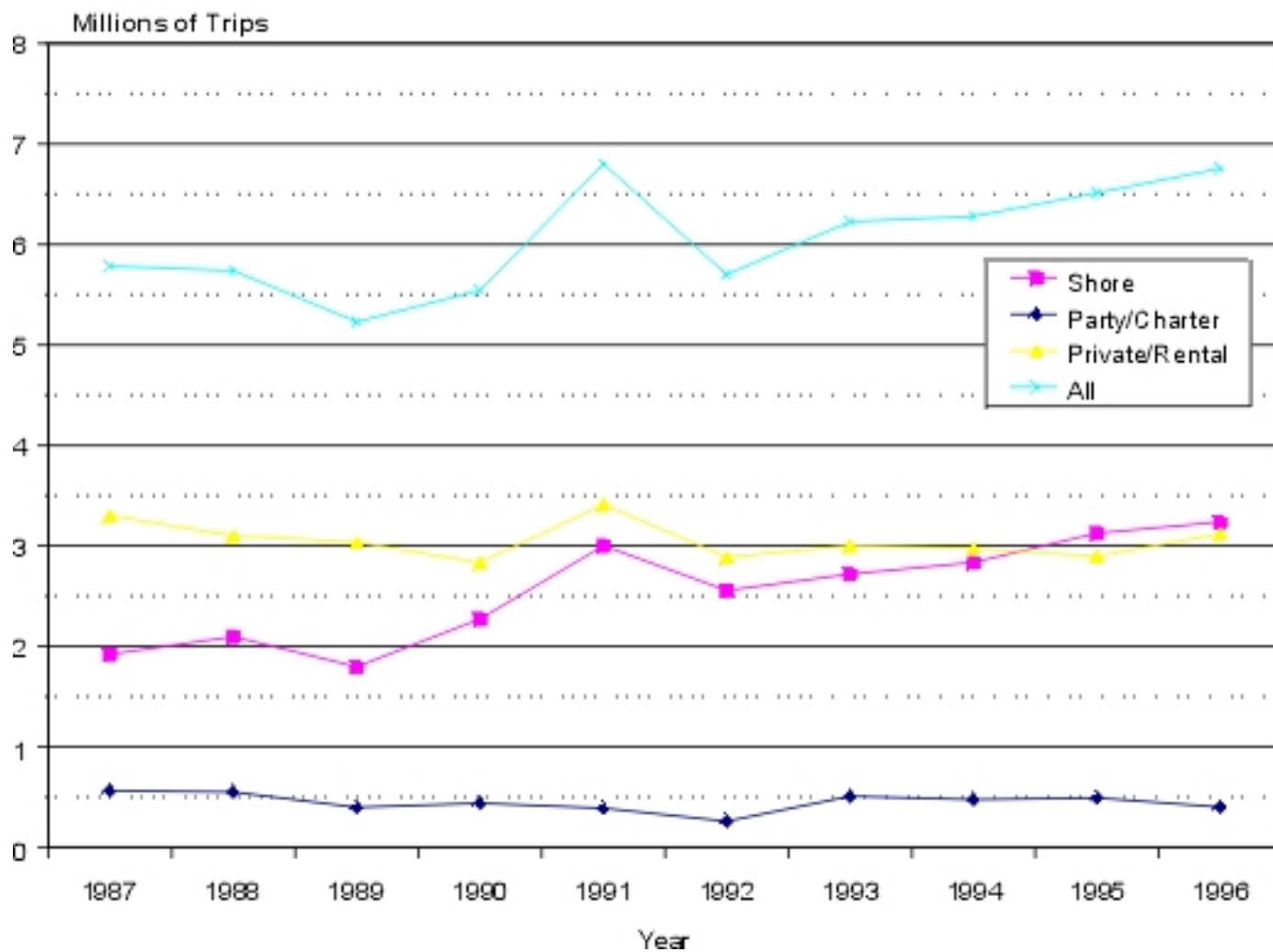


Figure 15

Estimated number of recreational fishing trips by mode in New England, 1987-1996.

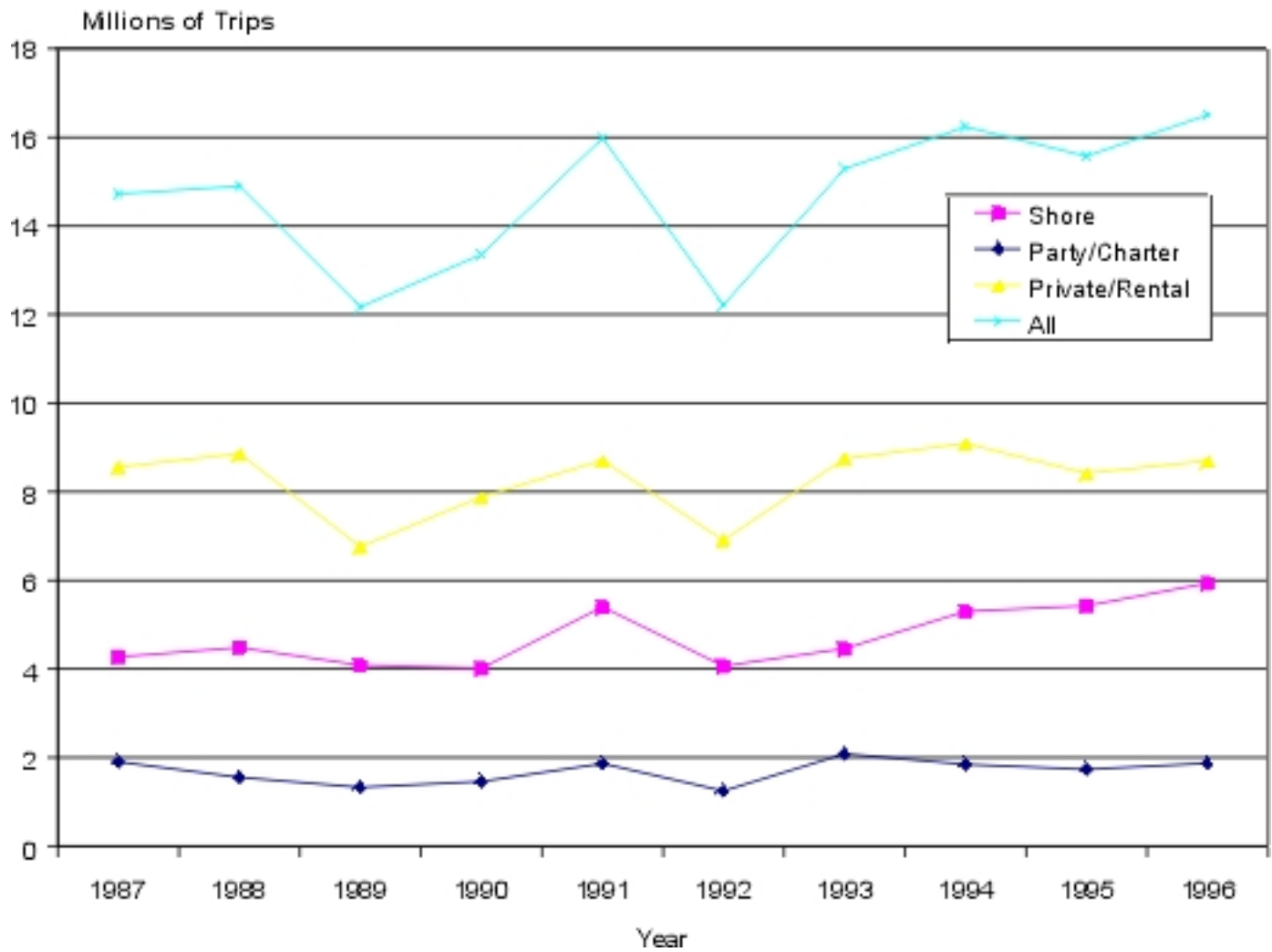


Figure 16

Estimated number of recreational fishing trips by mode in the Mid- Atlantic, 1987-1996.