

Generally, the price index was lower in 2013 than in 2012. However, the decline in 2013 is in relation to prices that reached a six-year high in the fourth quarter of 2012.

3. NUMBER OF VESSELS AND EFFORT

Effort indicators provide information about the amount of fishing that occurred to produce the landings. In this report, three indicators were used to measure fishing activity and effort: the number of active fishing vessels, the number of fishing trips, and the number of days absent from port.

3.1. Number of Vessels

The number of active vessels in the groundfish fleet continued to decline in 2013, and was at a four-year low for the 2010-2013 period. Both the number of vessels with revenue from any species and the number of vessels with revenue from at least one groundfish trip continued to fall. The total number of groundfish limited access eligibilities fell by 61 eligibilities in 2010-2013. The percentage of inactive vessels with a limited access groundfish permit has remained around 34-39% from 2010 to 2013, with 2013 having the lowest percentage of inactive vessels (34%) in the four-year span. Both the number and the percentage of groundfish limited access eligibilities placed in CPH have grown over the 2010-2013 period. In 2010, 94 eligibilities (6.5% of total eligibilities) were placed in CPH. In 2013, 45 additional eligibilities were placed in CPH, a 19.7% increase from the number of eligibilities in CPH in 2012 (228 eligibilities), for a total of 273 eligibilities in CPH, accounting for 19.7% of the total number of eligibilities (Table 10).

The number of vessels with revenue from any species fell from 763 in 2012 to 735 in 2013 (-3.7%). Since 2010, the number of vessels with revenue from any species has fallen 14.0%, with the fishery losing 120 active vessels (Table 11). The number of vessels with revenue from a groundfish trip declined 18.3% from 2012 to 2013 (400 to 327 vessels). From 2010 to 2013, the number of vessels with revenue from a groundfish trip fell from 446 vessels in 2010 to 327 vessels (-26.7%) This suggests that the contraction of the limited access groundfish fleet is being driven partially by the declines in the number of vessels that take groundfish trips (Table 12).

The reduction in the number of active vessels in the groundfish fleet should be interpreted carefully. Amendment 16 implemented a number of measures that induced the fishery toward fewer vessels, without necessarily requiring owners of non-active vessels to leave the fishery entirely. For example, an owner with a groundfish permit on each of three vessels is now allowed to stack all three permits onto one active vessel to reduce costs. In addition, Amendment 16 allows owners of permits held in CPH, which are not associated with an actual fishing vessel, to participate in sectors (i.e., allows the owner of permits in CPH to contribute the landings history for permits in CPH as PSC toward a sector's yearly allocation of ACE). Alternatively, if the eligibility in CPH is in the common pool, the holder of that eligibility can lease DAS to other vessels, with some restrictions. Clearly, fewer vessels now actively fish under a limited access groundfish permit, and fewer vessels within the total groundfish fleet are earning revenue on groundfish trips. However, we cannot conclude that all owners of inactive vessels are no longer participating in the fishery at all; some are gaining revenue as lessors of PSC/ACE or DAS.

Others have likely stopped actively groundfishing and are targeting other species. Some have left the commercial fishing industry entirely.¹⁷

3.1.1. *Number of Active Vessels by Home Port*

From 2012 to 2013, most home port states in the Northeast region experienced declines in the number of vessels with revenue from any species, with the numbers of active vessels at four-year lows for Maine, New Hampshire, Massachusetts, and New York. In absolute terms, Massachusetts lost the greatest number of active vessels, 16 vessels (4.3%: 371 to 355 vessels); in percentage terms, Maine experienced the greatest decline (8.5%: 95 to 97 vessels). New Jersey and Rhode Island each gained one active vessel from 2012 to 2013, while the number of active vessels homeported in Connecticut remained unchanged from 2012 at 10 vessels (Table 11).

Five of the six major home ports in the region lost active vessels from 2012 to 2013, with Gloucester, New Bedford, and Chatham at four-year lows. In absolute terms, Gloucester lost the greatest number of active vessels, falling from 88 vessels in 2012 to 83 vessels in 2013 (-5.7%). Over the four-year time period, the number of active vessels homeported in Gloucester has fallen 22.4% (-24 vessels). Chatham experienced the largest decline from 2012 to 2013 in percentage terms (7.9%: 38 to 25 vessels). Chatham's active groundfish fleet fell by 18.6% (-8 vessels) from 2010 to 2013. The number of active vessels homeported in New Bedford remained constant at 69 vessels from 2010 to 2012 before falling to 66 vessels in 2013. Boston also lost one active vessel (47 to 46 vessels) in 2013 from 2012, with one more active vessel than in 2011 (45 vessels) and six fewer than in 2010 (52 vessels), for an overall decline of 11.5% from 2010 to 2013. Portland's number of active vessels declined from 18 to 17 vessels in 2013 from 2012 but remained higher than the number of active vessels homeported in Portland in 2010 and 2011, 16 vessels. Point Judith's number of active vessels increased by one vessel to reach 45 vessels in 2013, the same number of active vessels that were homeported in Point Judith in 2010 (Table 11).

From 2010 to 2013, the number of vessels with revenue from a groundfish trip fell 26.7% (446 vessels to 327 vessels), with an 18.3% decline occurring from 2012 to 2013 (400 vessels to 327 vessels; Table 12). The number of vessels that had revenue from a groundfish trip fell in Maine, Massachusetts, New York, and Rhode Island in 2013 from 2012. Massachusetts experienced the greatest decline in absolute terms, losing 34 vessels (-16.5%). In percentage terms, New York saw the greatest loss; there was a 31.0% decline (42 to 29 vessels) in 2013 from 2012. The number of vessels that took a groundfish trip that were homeported in Maine fell from 51 vessels in 2012 to 39 vessels in 2013 (-23.5%). Rhode Island saw an 18.5% decline (54 to 44 vessels) in the number of vessels that took a groundfish trip in 2013 from 2012. The homeport states of Connecticut, New Hampshire, and New Jersey saw no change in the number of vessels that took a groundfish trip from 2012 to 2013, but they experienced overall declines over the four-year time span of 28.6% (-2 vessels), 21.9% (-7 vessels), and 52.4% (-11 vessels), respectively (Table 12).

In 2013, all six major home ports in the Northeast region saw declines from 2012 in the number of vessels with revenue from a groundfish trip, with Boston, Chatham, Gloucester, and New Bedford at four-year lows. Gloucester lost the greatest number of vessels with revenue from

¹⁷ The Northeast Fisheries Science Center has been conducting ethnographic research over the past year on the different ways that New England groundfish fishermen have responded to the changes in the fishery. Contact economist Tammy Murphy at tammy.murphy@noaa.gov for more information on this project.

a groundfish trip in absolute terms, eight vessels, a 13.1% decline from 2012. In percentage terms, New Bedford experienced the greatest decline between 2012 and 2013, a 13.9% drop in the number of vessels that had revenue from a groundfish trip (36 to 31 vessels). From 2012 to 2013, the number of vessels that had revenue from a groundfish trip also decreased in Portland, Maine (16 to 14 vessels), and Point Judith, Rhode Island (33 to 30 vessels; Table 12).

3.1.2. *Number of Active Vessels by Vessel Size*

Declines in the number of active vessels with revenue from any species on all trips occurred each year between 2010 and 2013 within all vessel length classes, except for the <30' vessel length class. The largest percentage decline in the number of active vessels between 2010 and 2013 occurred in the <30' vessel size category (21.5%: 65 to 51 vessels). However, from 2012 to 2013, this vessel length class gained two vessels, increasing to 51 vessels from the 2012 low of 49 vessels. The <30' length class was the only vessel length class that grew from 2012 to 2013. The overall decline is likely influenced by the presence of skiffs in this vessel length category; permit holders may be transferring quota associated with these skiffs onto other vessels they own, or leasing their quota to other fishermen. The 30' to <50' vessel size category, which has the largest number of active vessels with revenue from any species on all trips, experienced a 16.3% decline (459 to 384 vessels) during the past four years. The 50' to <75' vessel size category, containing the second largest number of vessels, experienced an 11.5% reduction from 2010 to 2013 (218 to 193 vessels). Finally, the ≥75' vessel category experienced a 5.3% reduction in the number of active vessels between 2010 and 2013 (113 to 107 vessels; Table 13).

The number of vessels with revenue from any species on at least one groundfish trip also declined each year from 2010 to 2013 within all vessel length classes, except for the <30' class. The largest percentage decline in the number of active groundfish vessels between 2010 and 2013 occurred in 30' to <50' vessel length class (34.3%: 242 to 159 vessels), the class that contains the most vessels that has revenue from at least one groundfish trip. The <30' vessel length class gained one vessel (16 to 17 vessels) from 2012 to 2013 but declined 29.2% over 2010-2013. The 50' to <75' vessel size category, containing the second largest number of active groundfish vessels, experienced a 15.7% reduction from 2010 to 2013 (121 to 102 vessels). Finally, the ≥75' vessel category experienced a 16.9% reduction in the number of active groundfish vessels between 2010 and 2013 (59 to 49 vessels; Table 14).

3.2. **Number of Trips, Days Absent, and Trip Length**

Numbers of fishing trips, days absent from port, and average trip lengths by active vessels were analyzed, in the aggregate and by four vessel length classes, to evaluate vessel activity patterns during 2010-2013 (Table 15). Vessel trip report (VTR) data were used to determine the number and length of trips taken in each fishing year.¹⁸

Effort on groundfish trips generally decreased in 2013. The fleet is taking fewer groundfish trips, with fewer total days absent on these trips. However, when a groundfish trip is taken, most vessels are taking lengthier trips than in prior years. Both the number of groundfish trips taken and total days absent on groundfish trips were at four-year lows in 2013, across all

¹⁸ For some trips, there were missing values for days absent. This means that for some trips, trip length was not available.

vessel length classes. However, for the groundfish trips taken, average trip length for all vessels was slightly longer in 2013 than it was in 2012. The groundfish fleet took a total of 10,056 groundfish trips in 2013, declining 29.8% from 2012 (-4,272 trips). The fleet as a whole had 2,826 (-14.2%) fewer days absent on groundfish trips in 2013 than they did in 2012. From 2010 to 2013, average groundfish trip length for the fleet has increased steadily from its low of 1.35 days per trip in 2010 to its 2013 level of 1.68 days per trip, a 25.2% increase overall. Average trip length on groundfish trips increased in 2013, by 21.6% (+0.30 days absent) from what it was in 2012. By vessel length class, average groundfish trip length increased for all vessel length classes but for vessels $\geq 75'$ in length, for which average trip length on groundfish trips fell very slightly by 0.3% (-0.02 days absent) (Table 15).

Effort measures for non-groundfish trips show that the groundfish fleet overall took slightly more non-groundfish trips, with a slight increase in total days absent on these trips, in 2013 than it did in 2012. The average trip length for non-groundfish trips taken by the fleet fell very slightly in 2013 from 2012 but was at its second highest point in the 2010-2013 time series (Table 15).

The total number of non-groundfish trips taken by the fleet in 2013 was 33,317 trips, a 0.9% (+293 trips) increased from 2012. Overall, the number of non-groundfish trips taken by the fleet has decreased 13.5% over the period from 2010 to 2013. The total number of days absent on non-groundfish trips in 2013 was higher than it was in 2012, with 288 (+1.0%) more days absent. However, the total number of days absent on non-groundfish trips taken by the fleet has decreased 6.1% over the 2010-2013 period. Average trip length on non-groundfish trips has increased overall from 2010-2013 by 4.7% (+0.04 days absent) but fell very slightly by 1.1% (-0.01 days absent) in 2013 from 2012 (Table 15).

For vessels $< 30'$, the number of non-groundfish trips taken and the total days absent on these trips both increased in 2013 from 2011-2012 but were not as high as they were in 2010. The number of non-groundfish trips taken by the smallest vessels increased in 2013 by 138 trips (+12.5%) from 2012. Over the four-year time period, the total number of non-groundfish trips taken by these vessels has decreased by 222 trips (-15.2%). The total number of days absent on non-groundfish trips followed a similar pattern, increasing by 74 days (+22.1%) in 2013 but remaining lower than it was in 2010 and declining 13.0% for the period overall. Average trip length for non-groundfish trips was at a four-year high of 0.34 days absent in 2013 for the smallest vessel length class but has had a narrow range of 0.32 to 0.34 days absent from 2010 to 2013 (Table 15).

Effort measures for vessels 30' to $< 50'$ in length were similar to those for vessels in the smallest vessel length class. Both the total number of non-groundfish trips taken and the total number of days absent on those trips increased in 2013 from 2012, by 656 trips (+3.2%) and 354 days absent (+4.2%), respectively. However, for this vessel class, the number of non-groundfish trips taken decreased 10.1% from 2010 to 2013, and the total number of days absent on non-groundfish trips decreased 5.3% over the same time period. Average trip length on non-groundfish trips remained unchanged in 2013 at 0.43 days absent, the same as it was in 2010 and 2012, after increasing very slightly to 0.42 days absent in 2011 (Table 15).

Vessels in the 50' to $< 75'$ length class took fewer non-groundfish trips in 2013 than at any other point in the four-year time span, with a 3.8% decline (-348 trips) from 2012 and a 20.9% decline (2,317 trips) from 2010. The total number of days absent on non-groundfish trips was higher in 2013 than it was in 2011 and 2012 but lower than it was in 2010. Total days on non-groundfish trips for these vessels declined 2.9% overall from 2010 but increased 1.8% (+218

days absent) from 2012. Average trip length on non-groundfish trips for these vessels has increased since 2010, increasing in 2013 by 0.26 days absent (+22.0%) from 2010 and by 0.08 days absent (+5.9%) from 2012 (Table 15).

The largest class of vessels, $\geq 75'$ in length, took fewer non-groundfish trips, with fewer days absent on these trips in 2013. However, when these vessels did take a non-groundfish trip, they were generally longer in length than they were in 2012. Both the number of non-groundfish trips taken and the total days absent on these trips were at four-year lows in 2013, decreasing 7.2% (-94 trips) and 4.5% (-613 days absent) from 2012, respectively. Overall, the number of non-groundfish trips taken decreased 11.7% from 2010. The total number of days absent decreased 11.4% over the same time period. Average trip length on non-groundfish trips taken by the largest vessels increased by 0.12 days absent to 3.91 days absent (+3.2%) in 2013 from 2012 (Table 15).

4. ECONOMIC PERFORMANCE

A complete assessment of fishery economic performance requires information from all vessels on all fishing-related costs and on all fishing-related revenues to determine profits. Actual annual financial profit is the sum of the owner's share of net revenue for all trips made over a year less annual fixed costs.¹⁹ This information would include the cost of purchasing additional ACE or DAS and the revenues from the sales of fish and ACE. Although progress is being made to address critical data gaps, at this time the Social Sciences Branch (SSB) does not have sufficient information to estimate profitability for various segments of the groundfish fleet or at a finer level (e.g., at the vessel affiliation or the individual vessel level). The primary obstacles to this estimation are (1) a lack of data on fixed costs and crew payments²⁰ and (2) incomplete data on ACE trading and DAS leasing.

This report uses three metrics to evaluate financial performance: (1) revenue per vessel and day; (2) total factor productivity, and (3) net revenue. None of these measures alone provides a complete assessment, but taken together they allow insights into important aspects of economic performance and provide some indication of trends in the economic efficiency of the active groundfish fleet.

¹⁹ Fixed costs are typically those that do not vary with the amount of fishing effort such as insurance.

²⁰ Fixed cost and crew payment data were collected through a voluntary survey in 2006-2008. However, vessel owner response to that fixed cost survey was poor and the resulting data quality was insufficient. In 2012, SSB implemented a redesigned cost survey to collect information about fixed costs and crew payments incurred in 2011 from approximately 50% of the commercial fishing vessel owners in the Northeast, according to vessel size and primary gear type. The survey was repeated in 2013, surveying the remaining half of vessel owners in the Northeast for fixed costs and crew payments incurred in 2012. These more recent surveys have resulted in higher response rates than the 2006-2008 efforts, with response rates of 30% and 21%, respectively, and the SSB now has fixed cost and crew payment data for 741 commercial fishing vessels in the Northeast. These data are being analyzed now as the SSB strives towards a more complete understanding of profitability for various segments of the fleet. At this time, both the Northeast Fishery Observer Program (NEFOP) and the At-Sea Monitors (ASM) Program collect some of fishing-related costs, and these data can be used to evaluate financial performance. Information contained in VTR and dealer data can also be used to derive additional performance measures.