by summing the combined ACE for all vessels (whether they fished or not) that were part of a common ownership group where ownership groups were determined by matching affiliated businesses with affiliated people (business owners) in the NERO permit application data.

During 2010, the 357 vessels included in the FY2010 break-even data caught (landings plus discards) a combined 13.5 million pounds over their initial allocations of ACE (See Appendix A, Table A9). The 13.5 million pounds represented 23% of total catch by our sample vessels would have had to been acquired either through monetary or in-kind trade. Gulf of Maine cod represented the largest need for all gillnetters, small longline, and for small otter trawl vessels. Georges Bank cod represented 84% of the ACE need for larger longline vessels. For mid-size and large otter trawl vessels the stocks with the largest trading needs were GB cod, GOM cod, GB winter flounder, white hake, and pollock.

Since not all vessels had an estimated overage during FY2010 for any given stock, or for any stock the average need was calculated as the total need divided by the number of vessels included in each category (See Appendix A, bottom half of Table A9). The average need to cover the gap between FY2010 ACE and catches ranged from 1,456 pounds of all stocks combined for longline vessels 40 feet and above to 207,586 pounds for large otter trawl vessels. The vehicle through which these needs may have been met is uncertain, as is the cost that may have been incurred.

Sectors submitted their phase 2 reports on September 2, 2011. The data contained in these reports offers some insight as to how vessels secured needed quota but less revealing about the price paid for quota. That is, the sector reports contain information on the type of compensation received (monetary, swapping fish for fish, gift without compensation, for example) for both inter- and intra-sector trades. These designations suggest that about 64% of all pounds in intra-sector transactions involved a monetary transaction whereas 81% of all pounds in inter-sector transactions were for monetary compensation (see Appendix A, Table A10). These data indicate that the majority of any ACE overage would most likely have involved a monetary transaction. Although, the sector reports do include some data on the value of some transactions there are a large number of transactions for which no lease price was reported or the transaction involved a block of stocks. In these cases the value of the entire trade may be reported which makes it difficult to ascertain how much any given stock may have been worth.

4.3 Effects of Subsidized Costs

The break-even analysis for FY2010 did not include costs of managing sectors not paid by vessel owners or crew. Some costs associated with the start-up and operation of sectors were subsidized by NOAA for FY2010. Each sector was given $18,824 for costs incurred from October 1, 2009 through December 31, 2010. This could be used for expenses such as manager salaries, office supplies, computers, printers, furniture, workers compensation, internet and phone services, and FishTrax maintenance. In addition, each sector received a grant for $46,305 for costs incurred from May 1, 2010 through June 30, 2011. This grant could also be used for the sector's operation costs. At-sea-monitoring was paid for by NMFS and dockside monitoring was also reimbursable up to $75,204. It is likely, in the near future, that these costs will be the responsibility of sectors, and their member vessels.

Interviews with sector managers indicated that the annual overhead costs to run one sector are expected to be $80,000 to $100,000. This amount covers items such as the sector manager's salary, insurance, workers compensation, office lease, internet, telephone, dockside monitoring, and other miscellaneous costs.

The cost of sector membership per vessel will vary depending on the composition of their sector, specifically how many vessels is the cost distributed among, and how much groundfish they catch. Currently the unsubsidized sector costs are paid as a per pound fee, members in sectors that have more boats and higher landings will pay less per pound and in total, less per year.

In addition to sector costs, vessels may be expected after FY2011 to pay for at-sea monitoring (ASM), which is a significant cost. The effect on specific individuals and sectors will likely vary. The potential cost of at-sea monitoring depends on the number of trips and trip duration. In FY2010 the target coverage rate for ASM was 30%. The combined ASM and Northeast Fisheries Observed Program (NEFOP) coverage rate was 38% (combined common pool and sector vessels). The realized rate for 2010 was 35% of trips and 35.9% of sea days. The coverage rate for trips varied by sector, ranging from 19.7% for the common pool to 45.2% for the Northeast Fishery Sector XII (NMFS, 2011). Approximately 76% of the overall coverage was provided by ASM which translates to an estimated 26.6% coverage rate for ASM alone. The target ASM coverage rate for FY2011 was the same as that for 2010, but the coverage rate over and above the 8% coverage planned by the NEFOP for 2012 (the year in which ASM costs would no longer be subsidized) was recently set at 17%.

In order to gauge the potential effect of observer costs on the fishery we estimated the average annual cost, which would have been paid by the vessels included in the break-even study in 2010, for ASM observers, if they had not been subsidized. The estimated cost for the at-sea monitors was based on the actual number of trips and trip duration by each of the vessels included in the break-even study that were covered by an ASM observer. It is probable that the number and duration of sector trips would have been different had the cost of at-sea monitors not been subsidized. Factoring these costs into trip planning may be anticipated to alter the expected net return from a sector groundfish trip as compared to a non-groundfish trip and may affect trip duration particularly as the cost of an ASM observer was based on a calendar day or any portion of a day. This means that using 2010 data as a measure of ASM costs may not be a predictor of what ASM costs may be once these costs become internalized to fishing trip economics.

Total sea days where an ASM observer may have been assigned to a trip was estimated by summing the number of groundfish day trips and the product of average trip duration rounded up to the nearest whole day for multi-day groundfish trips and the number of groundfish multi-day trips (see Appendix A, Table A11). This resulted in an estimate of 21,929 sea days taken by the vessels in the break-even analysis on 7,492 day trips and a total of 2,880 multi-day trips.

Given the estimated ASM coverage rate of 26.6% the estimated ASM costs during FY2010 was calculated as the product of the ASM coverage rate, the average cost per sea day ($630), and the total sea days. This calculation resulted in an estimate of $3.67 million which represents 4% of total groundfish revenue, 4% of total groundfish trip revenue, and 2% of total fishing revenue from all species including groundfish and non-groundfish trips (see Table 4.3.1). The impact of

having to pay for ASM may not have equal impacts on all segments of the groundfish fleet. Based on FY2010 activity, the ASM costs would have a greater impact on gillnet gear and small otter trawl vessels ranging from 7 to 10 percent of groundfish revenue. As a percentage of total fishing revenue, vessels in either small or large gillnet category would still be the most affected (5% of total revenue) since these vessels exhibit a high percentage of groundfish trip revenue of total revenue. This was not necessarily the case for small trawlers as the ASM costs were estimated to be 3% of gross revenue; as compared to 2% for both medium and large trawl vessels.

Table 4.3.1. Estimated ASM Costs as a Percent of Revenues for Vessels Included in the Break-Even Analysis

Vessel Category	Estimated ASM Cost	ASM Cost as % of Groundfish Revenue	ASM Cost as % of Groundfish Trip Revenue	ASM Cost as % of Total Revenue
Gillnet < 40 Feet	$356,443	10%	8%	5%
Gillnet >= 40 Feet	$723,778	8%	6%	5%
Longline < 40 feet	$39,381	5%	5%	3%
Longline >= 40 Feet	$39,549	5%	5%	2%
Trawl < 50 Feet	$259,749	7%	6%	3%
Trawl >= 50 and <= 65 Feet	$439,730	4%	3%	2%
Trawl > 65 Feet	$1,816,232	3%	3%	2%
Totals	$3,674,862	4%	4%	2%

Compared to the estimated costs for FY2010, the required 17% coverage rate for ASM would result in lower overall monitoring costs. At FY2010 activity levels for the vessels included in the break-even analysis the 17% coverage rate would have cost $2.35 million. This level would represent approximately 3% of FY2010 groundfish revenue and 1.4% of total fishing revenue.