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## **Executive Summary of the Evolution of the Groundfish Sectors Business Viability Model (July 1, 2012 through June 30, 2014)**

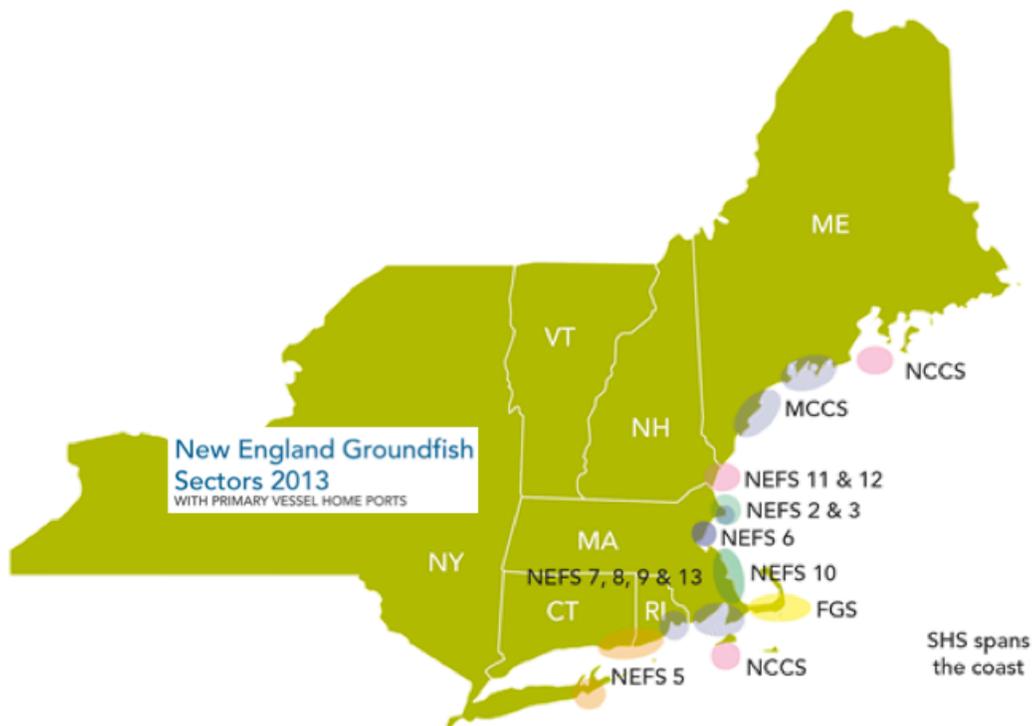
### **Executive Summary**

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## **Introduction**

When Amendment 16 passed in July 2009, the New England groundfish (GF) fishery faced a quick transition from a days-at-sea (DAS) effort control system to output controls with allocations to sectors in fishing year (FY) 2010. The sector management system induced cooperation amongst harvesters who formed 18 sectors across New England, with membership often grouped according to association/community affiliation, geography, gear type, business relationships, and the like. This major management shift led to a complete change in business practices for the industry, leaving them little time to prepare for this monumental change and without an individual or sector business model to ease the transition.

In response to this knowledge gap, the Gulf of Maine Research Institute (GMRI) was contracted by the Social Sciences Branch (SSB) of the National Oceanic and Atmospheric Administration's Northeast Fisheries Science Center (NEFSC) to evaluate the viability of sectors as business organizations (IRS 501(c)(5) nonprofit corporations). The impetus for this project stems from the impending reduction or elimination of federal funding for operational assistance and monitoring, on which sectors heavily rely. Without these funds, sectors will likely need to alter practices by modifying fishing/landing behavior, changing membership fee structures, and reducing operating costs in order to remain viable businesses.

The Sector Business Viability (SBV) project is assembled in three phases. **Phase 1's** focus was to gain an understanding of the economics of the New England GF industry and that of each individual sector by analyzing GF and non-GF catches of all 17 active sectors followed by an evaluation of individual sector viability through the development of business profiles. **Phase 2** further analyzed the seasonal landing patterns and market fluctuations of each GF and non-GF species to understand a sector vessel's ability to maximize the value of landed catch. Future work in **Phase 3** will analyze the relationship between fishing operations and allocation utilization as well as annual catch entitlement (ACE) trading efficiency in conjunction with the seasonality of landings and market prices. This report summarizes the research conducted in Phases 1 and 2, discusses their major findings, and provides insight into the current Phase 3 work.

**Phase 1** of the SBV project began on June 1, 2011 with the objective of gathering data from sectors on costs, revenues, fishing/leasing behavior, and to develop profiles for these sectors that would help inform their business planning for the next fishing year. Through the help of Andrew Kitts with the SSB, a significant extension of the scope of work was made possible by the acquisition of allocated ACE, landings/leasing history, as well as the associated revenue data. These data were compiled based on the individual vessel trip level data from FY 2007 through FY 2011. Information on sector operating costs was provided by each sector and supplemented by cost data GMRI had from serving as a pass-through of federal funds to the sectors. Since these data were confidential, individualized reports were produced for each sector and the draft reports were presented to the sectors in winter 2012/spring 2013. The final Phase 1 reports were presented to the sectors and members of the boards of directors by April 30, 2013. The

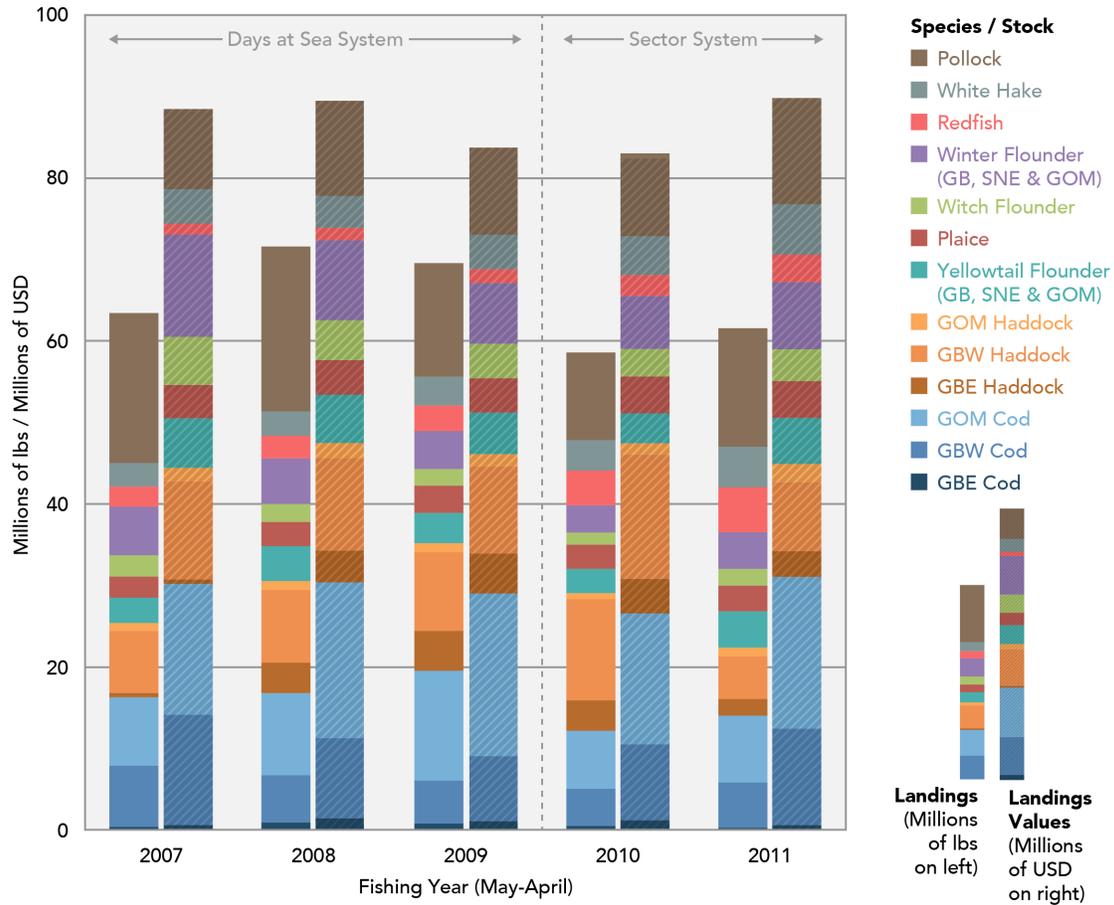
non-confidential sections of these reports are included in the Phase 2 project report, which is comprised of two subsections: *Economics of the New England Groundfish Industry* and *Sector Business Profiles*, each of which are discussed below.

### ***Economics of the New England Groundfish Industry***

In 2011, Northeast multispecies permit holders landed almost 69 million pounds (live weight) of GF, valuing over \$90 million (see Figure 1). This accounted for 19% of their total landings and 27% of their total landings values, both of which are at their lowest levels since 2007. The majority of their GF landings in FY 2007–2011 are made up of Gulf of Maine (GOM) cod, Georges Bank West (GBW) cod, GBW haddock, and pollock (see Figure 1). Cod and haddock were the most valuable GF species, accounting for less than one-third of total landings and more than half of their landings value (see Figure 1). Cod had average monthly landings of 1.5 million pounds with a value of \$2.4 million, while haddock had average monthly landings and value of 1.2 million pounds and \$1.4 million, respectively.

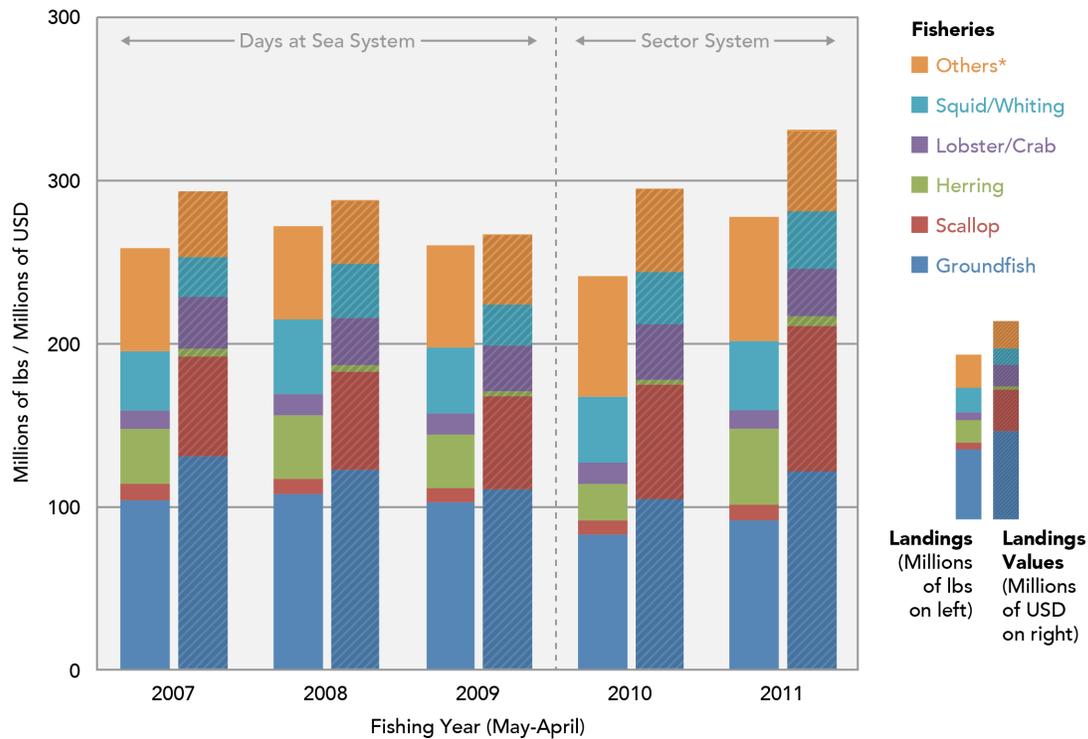
In 2011, New England GF fishermen utilized 40% of the total annual catch limits (ACL) for all 20 stocks (Murphy et al., 2012), however the utilization rate varies widely across species/stock. The ACL utilization rate for GOM cod and GB cod, are as high as 84.8% and 70.5% in FY 2011, respectively, before the 10% buffers were set by NMFS to ensure that catches stay below overfishing limits.

It is clear that the GF fleet depends on GF landings for a steady stream of revenue, yet has become increasingly dependent on non-GF species (see Figure 2), with their dependence fluctuating seasonally. In terms of landings value, scallop and lobster account for more than half of the total non-GF landings values on all trips (see Figure 2) and are more important than any other species to certain communities. While herring, whose landings account for more than 20% of the non-GF landings and rank higher than any other species, has considerably low landings values. It is believed that sector boats have diversified their landings portfolio to land a higher volume of non-GF during non-GF trips; in 2010 non-GF landings on GF trips equated to more than five times of that in 2011 (see Figure 2).



**Figure 1. Annual Groundfish Landings and Landings Values from Groundfish Trips\* by Northeast Multispecies Permit Holders**

\*A groundfish trip is defined as a trip where the vessel owner or operator declared, either through the vessel monitoring system (VMS) or through the interactive voice response system, that the vessel was making a groundfish trip.



**Figure 2. Annual landings and landings values from all trips\*\* by northeast multispecies permit holders**

\*The Others category is comprised of DMIS groupings with both low landings and landings value, which are listed below with their percent makeup of the overall landings and landings values from FY 2007-2011 in parentheses, respectively: Shrimp (1.9%, 1.0%), Fluke (2.3%, 3.0%), Scup (1.9%, 1.3%), Menhaden (5.3%, 0.3%), Carrier (0.3%, 0.02%), Hagfish (0.6%, 0.3%), Monkfish (0.004%, 0.002%), Outside (0.1%, 0.1%), P Charter (0.1%, 0.1%), Red Crab (0.3%, 0.2%), Surf Clam (0.01%, 0.1%), Tilefish (0.01%, 0.02%), Unknown (12.3%, 8.2%), Whelk/Conch (0.3%, 0.4%), Research (0.02%, 0.03%).

\*\*All trips is defined by any trip taken by a Northeast Multispecies Permit Holder

### ***Sector Business Profiles***

A sector business profile was developed for each of the seven participating<sup>1</sup> sectors to help identify important risk variables and provide options to maintain a viable sector organization. The following sectors participated in the project: Maine Coast Community Sector, Northeast Coastal Community Sector, and Northeast Fishery Sectors II, V, XI, XII, and XIII. The business profiles were tailored for each individual sector, and the information included in each profile is confidential. Therefore, these details cannot be shared in this report. The components that make up each profile are described below, illustrating the nature of the profiles and highlighting the major findings across all participating sectors.

When developing the business profiles there was an extensive outreach component. Each draft profile was presented to the respective sector manager and members of their board of directors to fill in data gaps and ground-truth the previously compiled information. These draft profiles consisted of a set of graphs that displayed sector GF and non-GF landings volume and value from FY 2007–2011, contrasted with pre-sector management as well as with the entire New England GF fleet. Sector organizational cost data, such as sector manager salary, legal and accounting fees, etc., was compiled primarily from operational cost invoices submitted to GMRI for federal reimbursement. Sector revenue information, such as membership fees and ACE trading fees, was provided by the sectors during the initial round of meetings.

The final profiles were completed with the addition of FY 2013 forecasts based on FY 2011 utilization rates and leasing history and sector sub-ACL reductions (from Frameworks 48 and 50). Also, a final profit and loss table was included in the profile and utilized costs from FY 2011 and also forecasted landings and leasing revenue for FY 2013. The final profiles were presented to sector managers and their boards of directors to help inform the sectors' business planning for the following fishing year. A variety of strategies were discussed related to fee structures, sector manager's salary and responsibilities, cost-sharing services, sector rosters, ACE rollover, and reductions in ACE.

It became clear in Phase 1 that no two sectors are alike, and therefore this work could not have been possible without meaningful participation of the sector manager and their board of directors. This sector-specific information was crucial to understanding these differences; without it the nuances of each sector, from their administrative operations, fee structures, landings and leasing behavior, affiliations with industry associations and permit banks, etc. would have been lost.

After a few years of operating, some sectors have a stronger sense of business acumen, vision, and coordination among their board of directors than others. Still, very few of the sectors have organizational business plans or have looked too far beyond the upcoming fishing year. This is likely a result of balancing the existing regulatory and reporting requirements with managing day-to-day sector operations, which leaves little time and resources for planning. Many are without reserve funds or a surplus from past years, and

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<sup>1</sup> All sectors were provided the opportunity to participate in this project, and ultimately seven were actively

may be struggling to maintain their viability in FY 2013 without federal assistance for operational costs.

There was little discussion about collective fishing efforts within a sector (aside from intra-sector leasing), and it appears members are still operating on the quota they contribute to the sector. Several sector members are directly marketing their catch or entering into forward contracts, although to our knowledge, none of the participating sectors have any sector-wide marketing initiatives. Therefore, at least in the near term, it appears as though it is more likely that sectors will be trying to reduce operating costs rather than increase landings and/or engage in marketing initiatives to get a higher ex-vessel value for their catch (both of which would generate higher revenue to the sector from landings fees).

There is acknowledgement among the industry that recent financial, regulatory, and biological changes in the fishery will necessitate changes to the current sector organization. While some of the larger sectors might remain viable without federal assistance, it is likely that some of the small and medium-sized sectors will end up merging in the near future. While this may alleviate some of the budgetary constraints, it is unknown whether this would facilitate or impede collaborative fishing efforts within a sector as membership grows and interests may become more diverse and/or divided.

**Phase 2** was conducted from July 1, 2012 through June 30, 2013 and provides the supporting information and a simulation template for each individual sector to evaluate how the membership profile, landings and leasing history, and ACL reductions in FY 2013 would affect a sector's viability. Information was also provided to identify risk management and income enhancement options for each sector. In addition, an overall summary of *Market Information by Port/Region*, and *Historical Price and Landings Volatility by Ports/Regions* are provided and discussed below.

### ***Market Information by Port/ Region***

GF prices in New England consistently fluctuate from month to month. Of all GF species, the price of cod seems to follow an increasing trend with the highest price over other GF species. While the price of Acadian redfish is lower, it is more stable, varying less than \$0.30 across the five-year period from FY 2007 to FY 2011. In contrast, prices for all species of flounders show great variation from month to month.

Ports in Massachusetts had the highest volume and value of GF landed in New England. Gloucester, MA landed the greatest volume of GF from 2007-2011. Across New England, the greatest total annual volume of GF landings for all ports occurred in 2008, with approximately 72 million landed pounds, while the lowest was in 2010, with approximately 60 million landed pounds.

Gloucester earned the highest annual GF value from 2007- 2011. The highest annual price per pound at a port occurred in 2007 in southern New England<sup>2</sup>, with an average of approximately \$1.90 per pound. The lowest annual price per pound at a port occurred in

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<sup>2</sup> The specific ports were not specified due to confidentiality.

2009 in ME and NH, with an average of approximately \$1.05 per pound. In recent years there was little variation of price between ports, with the largest variation of price per pound in 2007 with \$0.70 and the lowest in 2011 at \$0.20.

Of the non-GF species landed by sectors, scallops had the greatest landed volume and American lobster commanded the highest price per pound, ranging from \$3.00-\$6.00 per pound. Southern New England typically earned the highest total value of non-GF landings annually, followed by New Bedford, then other ports in MA. Ports in ME, NH, and Gloucester earned the lowest total value of non-GF landings annually. Gloucester had the highest average non-GF price per pound by port, while ports in ME and NH had the lowest average non-GF price per pound by port. The Phase 3 project will follow up and identify the possible explanations for these variances.

### ***Historical Price and Landings Volatility by Ports/Regions***

Price volatility measures the degree to which the landed value changes from one day to the next. Price volatility for GF and non-GF species was highest in FY 2010 with the introduction of sectors, yet it sharply decreased in FY 2011. It is important to identify whether this change is linked to fishermen becoming more accustomed to the new system and/or if there is an incentive to smooth out their landings to obtain more stable prices. Phase 3 will explore these questions.

After the introduction of the sector system, most GF species have low price volatility in the first quarter, or the early spring season. Of all GF species, cod generally has the most stable day-to-day prices across this period, though white hake appears to have very stable prices during the third quarter of each year. Redfish tends to have the least stable prices from day to day, but it is also the species with the most stability in average long-term prices.

Landings volatility measures the degree to which the amount of fish landed changes from one day to the next. Landings volatility for GF and non-GF species spiked sharply during the 2008 recession and remained at a high level from 2009 to 2011. Particularly for non-GF, landings volatility increased during 2010 when sector management started; however, it declined in 2011 and there is no way to predict if it is expected to continue in this direction in the future.

In contrast to GF prices, there is strong seasonality to the historical volatility of GF landings. Landings volumes appear to be most stable during the third quarter, late summer and early fall, and least stable during the winter, from the fourth to the first quarter. Cod tends to have the most stable landings across all seasons, while redfish tends to have the least. There does not appear to be any significant change in the seasonal pattern of volatility after the sector system was implemented.

### ***The Importance of Landing Price Volatility***

If ACE trading smoothed out the supply and therefore ACE price volatility, there could be a resulting decrease in landing price volatility. Independent of this, fishermen could explore other mechanisms for reducing landings price volatility by, for example,

maintaining a steady supply of fresh catch for high quality niche markets. Fresh catch tends to be consumed at a steady rate, but the seasonality in landings is problematic for many species, creating gluts in the market which result in lower prices. The ability to smooth out their landings and keep the price stabilized in markets will help sectors to negotiate higher prices given the promise of steady supply.

**Phase 3** of the project (July 1, 2013 to June 30, 2014) attempts to understand the structure and performance of the leasing market for groundfish quota traded between sectors and a predictive modeling tool that demonstrates the potential risks and opportunities for sector operations and ACE trading for each sector type. This phase will also include a dissemination process for industry and management.

### **Conclusions and Discussion**

The transition to annual catch allocations and communal accountability in the GF industry has been a difficult one. As fishermen adapt, the dialogue has shifted from whether sectors are a good management approach to how to make the system work effectively. In order to improve profitability and viability of the GF fleet and community, fishermen need to understand how to utilize their GF ACE in a cost efficient way and how to position their landings in the marketplace to maximize their landings value. The business profiles allowed sectors to forecast probable operational costs and income levels as well as work out strategies to deal with budget shortfalls, declining income, and impending monitoring costs. There is a need to analyze landings value by sector, including trading and the probable monetary value of lost income through unutilized allocation or landing at inopportune times in terms of market value. These profiles provided sectors with more complete information to make informed business decisions. GMRI plans to continue conversations around administrative and operational efficiency, both with individual sectors and with the Northeast Sector Services Network.

It is important that fishermen understand how their combined landings affect price and the strategies for dealing with volatile prices—such as diversification of their landings and timing of their ACE trading. The ACE leasing and marketing strategies could help both small- and large-scale fishermen; however, the majority of the fleet is small-scale and will count on the ability of the sector to coordinate the combined landings to be successful.

None of the participating sectors had a sector-wide marketing initiative to regulate their landings across time and offset some of their losses. Each of the individual sectors are too small to have aggressive long-term business planning that would have an impact in the marketplace. However, coordination across sectors could help develop generic marketing strategies to increase prices with efforts, such as branding GOM cod, to distinguish it from imports. The focus of phase 3 of the project is to utilize the sector profile compiled on Phase 1, along with the price volatility information of Phase 2, to advise each sector on how to optimize the timing of their ACE trading and diversify their groundfish landings to ensure the market is not flooded with a single species and higher quality fish are landed at a higher price.