Community Perspective: A Special Report

Report to NEFMC on 2019 Port Meetings for its Review of Sector Management

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Gulf of Maine Research Institute
Science. Education. Community.

I. Introduction

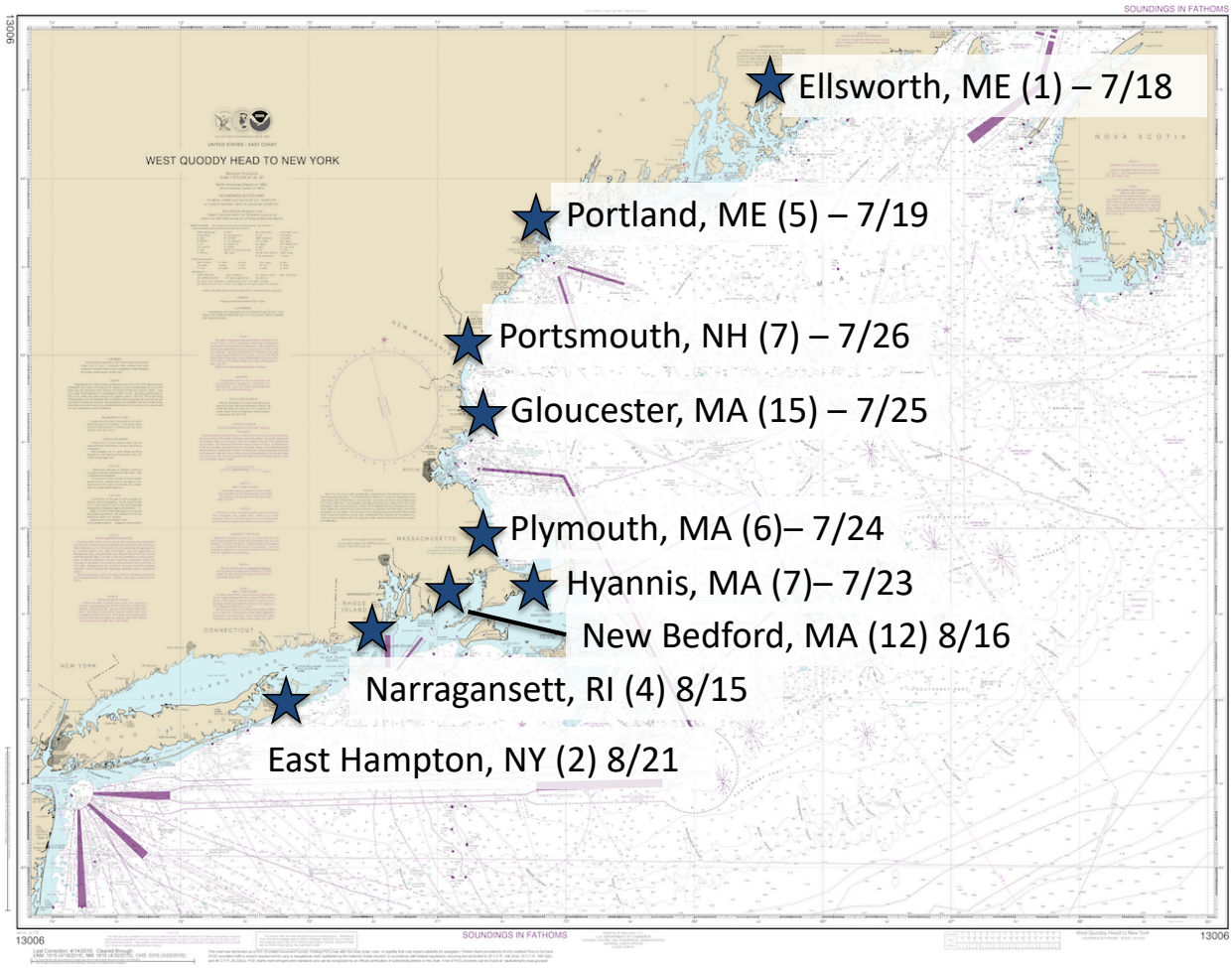
With the adoption of Amendment 16 to the Northeast Multispecies (Groundfish) Fishery Management Plan in 2010, the New England Fishery Management Council (Council) instituted sector management, a catch share program that allows all vessels with federal limited access permits to join a groundfish sector and get exempted from days-at-sea (DAS) limits. The National Oceanic and Atmospheric Administration's (NOAA) catch share policy tasks Councils with catch share programs to perform periodic reviews of those programs to evaluate whether the program is meeting its goals and objectives.

In 2019, the Council launched its first review of the Northeast Multispecies catch share program. As part of that process, the Council commissioned the Gulf of Maine Research Institute (GMRI) to conduct a series of port meetings to solicit public comment about the groundfish sector management system. These meetings provided a forum for stakeholders to share their perspectives, experiences, and on-the-water observations of changes to the fishery and to their communities since the implementation of the sector management system.

a. Logistics, Meeting Structure & Publicity

GMRI hosted nine port meetings, advertised through a press release by the Council, post-card mailings to permit holders, notices in *Commercial Fisheries News*, and collaborative efforts with local stakeholders (Appendix 1), in the following ports: Ellsworth ME, Portland ME, Portsmouth NH, Gloucester MA, Plymouth MA, Hyannis MA, New Bedford MA, Narragansett RI, and East Hampton NY, between July 18 and August 21, 2019. Some meetings were well attended, while others were quite sparsely attended. In Ellsworth ME, only one person who was not a participant in the fishery attended. Our meeting in Hyannis MA was intended to capture input from fishermen and fisheries stakeholders from Cape Cod, MA. However, the meeting coincided with a tornado that touched down in Cape Cod on July 23, 2019 and potential attendees from further down the Cape were prevented from attending. GMRI later reached out to fishing organizations in the area for input but was unable to schedule a follow-up meeting.

Meeting locations (with number of attendees) and date (all in 2019)



Meeting Location	Date	Number in Attendance
Ellsworth, ME	07/18/2019	1
Portland, ME	07/19/2019	5
Hyannis, MA	07/23/2019	7
Plymouth, MA	07/24/2019	7
Gloucester, MA	07/25/2019	15
Portsmouth, NH	07/26/2019	7
Narragansett, RI	08/15/2019	4
New Bedford, MA	08/16/2019	12
East Hampton, NY	08/21/2019	2

GMRI circulated meeting agendas and questions (Appendix 2) prior to meetings, focused on four potential impact areas of the sector management system: community, business, ecosystem, and future opportunities. Meetings took the form of round-table discussions, which touched on the four impact areas and focus questions within each area and provided opportunity for participants to give additional insight and comment. At some meetings, participants arrived with well-formulated responses to the focus questions in mind or written out, while other meetings flowed as a more free-form discussion. Participants included

fishermen, seafood dealers, sector managers, researchers and students, fisheries managers, NGO representatives, concerned citizens, and members of local government. Overall, approximately fifty people participated in meetings, with some attending multiple meetings. In addition, the Council directly received seventeen written comments from members of the fishing industry and citizens, fleet owners, commercial fishing associations, sector managers, municipal government, and state agencies (Appendix 4).

Commenter Category	**Number of Written Comments Received**
Individual	10
Commercial Fishing Organization	4
Sector	1
Municipal Government	1
State Agency	1

GMRI presented our preliminary findings to the Council (Appendix 3) at its September 2019 meeting in Gloucester, MA.

II. Major themes

In our port meetings over the summer of 2019, we heard comments from fishing communities that touched on both the specific characteristics of sector management and the ripple effects of the system on their ports, communities, and businesses. In this section, we present the major themes we heard, drawing from the conversations across the region. We note instances where comments from specific ports stood out as unique to that port. Otherwise, the narrative reflects multiple conversations in multiple ports.

a. Impact of the allocation formula

1. Relative value of permits under DAS v. ACE

Joining a sector, and therefore voluntarily leaving the days-at-sea (DAS) program, significantly altered the relative value of a permit. The DAS associated with a permit were no longer important. Instead the catch history tied to a permit determines its value based on its potential sector contribution (PSC), the amount of the annual catch limit (ACL) that gets assigned to that permit. The collective PSCs from its members forms a sector's annual catch entitlement (ACE), effectively its quota for each stock. We heard at virtually every port meeting that the switch from DAS to ACE upended the value of permits. An immediate impact was that some recently purchased permits, valued based on DAS, became almost worthless if those DAS had been leased to another permit, so the purchased permit did not accrue the catch history associated with those days. It appears that this impact was felt across the industry, with permit holders in all states with vessels of all sizes finding themselves with expensive, yet almost worthless permits.

During development of Amendment 16, the Council was considering alternatives for the allocation formula, some of which would have mitigated the effect of DAS leasing by accounting for vessel size and horsepower. During this period, fishermen were also trying to calculate the impact of the different formulas under consideration to the value of their permits. This proved difficult for permits they had acquired during or after the control period since catch history is confidential and proprietary to the owner at the time. Permit holders were desperately trying to track down their permits' previous owners (sometimes multiple owners) or their families. Then, in March of 2009, the Regional Administrator Pat Kurkul issued a letter allowing permit history to be shared with current permit holders without written permission. Despite access to their catch history, many permit holders found it difficult to calculate their PSC. Regardless, the uncertainty around the eventual formula suppressed the permit market, so there was little option for making adjustments.

2. Impact of closed areas and trip limits on ACE

Captains in certain ports, most notably in Massachusetts' South Shore, reported that in addition to the impact of DAS leasing on the relative value of permits, they felt the impact of differing regulations on their catch history prior to and after sectors. The intense effort to protect the Gulf of Maine (GOM) cod stock in Massachusetts Bay, for example, led to lengthy seasonal closures and tiny trip limits on cod, the most drastic of which was a 30-pound trip limit on cod that Framework 27 put into place in 1999, later raised to 100 pounds. Thus, the South Shore fleet felt they experienced reduced catch history, particularly for GOM cod, during the control period compared to other ports due to regulatory pressure. Vessels out of Marshfield, Scituate, or Plymouth that had been successful under DAS, even with small cod trip limits, found that their ACE was insufficient to remain profitable. Constraints on cod became particularly severe for these vessels, as described below.

b. Comparing sectors to DAS

1. Is the fishery better off under sector management than it would have been under DAS?

At most ports' meetings, there was a discussion about the relative merits of sector management versus the DAS system. With the exception of a couple of ports or individual captains who felt the switch impacted them significantly more than others, the general consensus across the region was that the DAS system would not have worked under the new provisions laid out in the 2006 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

Many felt that the need to adhere more strictly to scientific advice when setting ACLs and, particularly, accountability measures (AMs), in the MSA meant that trip limits alone may not have been sufficient to protect rebuilding stocks and would instead have resulted in large seasonal or year-round closures. In addition, fleet-level ACLs and limited DAS would have resulted in a race to fish, which is dangerous and bad for market prices. Further reducing DAS allocations, or further increasing differential counting ratios, to protect vulnerable stocks would have increased pressure to fish 24 hours and stay out under deteriorating conditions.

A recurring theme from many attendees was that the sector system itself is not the cause of distress for parts of the groundfish fleet (particularly the inshore fleet), but rather it is the demands of strict ACLs across a multispecies fishery, with some stocks undergoing rebuilding while others are significantly under-harvested, that create imbalances of allocation. In addition, many felt that potential benefits of the sector system were not fully realized due to regulations held over from DAS or managers' unwillingness to trust the self-regulatory features of sectors.

2. Remnant DAS regulatory constraints

Several fishermen felt that key regulations put in place under DAS ought to be removed to give the fleet more flexibility to take full advantage of the output-based controls under sectors. For example, some cited closed areas put in place for mortality controls or mesh-size restrictions that limit harvest of certain healthy stocks, such as haddock. Groundfish mortality closures were important to limit fishing pressure on certain stocks under DAS, but do not have the same impact under an output system where mortality is controlled through distributing allocation against a total allowable catch (TAC). While there has been movement to reopen mortality closures, several participants questioned whether the closures that remain are all strictly for habitat.

The most frequent comment on remnant DAS restrictions, however, focused on permit-based limits on vessel size and horsepower. These limits hit the inshore fleet particularly hard as they struggle to avoid cod and other constraining stocks. Several mentioned that their permit restrictions mean they cannot get a larger vessel to fish safely further offshore, where they have more options to avoid cod and find other target species. They are also left nursing old, tired engines that have outdated horsepower ratings. The general feeling is that new engines are lighter, less durable, and less powerful than similarly rated older engines. Vessel size and horsepower limits are clearly necessary under a system that limits effort, but not under an output system. Indeed, we heard that for an output system to function properly, permit holders ought to be free to make best use of their allocation and optimize their businesses.

c. Additional costs of sectors

The sector system imposes additional costs onto the fishery, which are largely borne by the vessels owners, captain, and crew. These include fees the sectors charge their members to cover its own costs, cost of leasing ACE, and the potential for monitoring costs.

1. Sector fees

Sectors charge their members fees to cover the costs of managing the sector, the largest of which is the sector manager. Most sectors have a full- or part-time manager who is responsible for the weekly reporting of catch and ACE traded into and out of the sector. Most managers also handle ACE balances for the sector, which includes internal distribution of ACE among members, informing members of their ACE balances, calculating discard rates that get applied to unmonitored trips, and handling most ACE trading both within the sector's membership and with other sectors. In some cases, the sector manager also manages the sector's books (if not, the sector contracts a bookkeeper), helps run board meetings,

keeps an eye on regulatory developments, and may support the sector members in other ways, such as helping with permit sales.

Few sectors can afford a full-time manager. Most sector managers work part-time for their sector, might manage more than one sector, or have other duties within an industry organization. Other sector costs include insurance, rent, utilities, bookkeeping, legal expenses, and technology.

2. Cost of leasing ACE

Most meeting participants acknowledged that under DAS, leasing days from other permit holders could be expensive, depending on permit category. Since larger vessels were restricted to leasing days from similar sized boats, the larger boats had a smaller supply of days on the market to lease, making a DAS for a larger vessel relatively more expensive. Smaller vessels tended to find the market more affordable, as there was a greater range of days available. This also had the effect of supporting the smaller vessels, as there was always a pool of DAS that were available only to them.

Regardless of the relative price differences among vessel classes, the cost of leasing days tended to be stable and predictable, and captains often had well-established relationships with the permit holders from whom they leased. We frequently heard that during the period of 800-pound trip limits for GOM cod, captains found they could reliably gauge the value of a DAS. That relative stability made it easier for captains to control costs and anticipate revenue.

Leasing ACE, however, happens within a completely different market than leasing DAS. For example, there are no restrictions on trading among vessel classes or among sectors (apart from internal right-of-first refusal, which most sectors instituted for trading ACE outside of their sector). ACE, therefore, tends to flow to the sectors and vessels who can most afford it.

In addition, the value of ACE reflects the relative abundance of the stock rather than the value of that species in the market. Since vessels need to have ACE for all species that they are likely to land on a trip to adhere to accountability measures, captains frequently find themselves paying more for ACE than they are likely to get at the dock for key constraining stocks, such as GOM cod or yellowtail flounder. We discuss this issue further in the next section on the impact of stock assessments, but heard across the region that the cost of ACE falls into three broad categories:

1. **Overvalued**: a stock assessment indicates a lower abundance than fishermen experience on the water, inflating the price of ACE compared to the likelihood of catching it.
2. **Undervalued**: a stock assessment indicates a higher abundance than fishermen experience, deflating the price ACE compared to its supply. This is compounded when stocks are under-harvested due to constraining stocks – that is, fishermen may feel a stock assessment is accurate, but they are unable to fully harvest their ACE because they run out of ACE for constraining stocks and limit their ability to fish for their remaining ACE.
3. **Correctly valued**: stocks for which the assessment reflects fishermen's experience of abundance, faces few harvesting constraints and is therefore valued to reflect dock price.

In addition to navigating the relative costs of ACE in the marketplace, captains often rely on their sector managers to find ACE for them through the informal communications and

relationships that managers share. We heard a range of opinions about the transparency and effectiveness of the ACE trading marketplace. Generally, attendees reported that the system worked well and were happy with the arrangements of working through their sector manager or, in some cases, making their own arrangements and having the sector manager conclude the deal.

Some, on the other hand, felt the difficulty of navigating the lease market, along with the layers of rights-of-first refusals, constrained the market and made it less efficient. There was a sense among some that this was an area where a key component of the system design – the ability to move ACE around the fishery for maximum returns – is not living up to its potential. A few felt that these constraints contributed to the under-harvest of ACLs across the fishery.

It is difficult, however, to disentangle the actual program design with its implementation at the sector level. For example, rights-of-first refusals that most sectors employ are not stipulated in Amendment 16. The Amendment is also silent on how ACE trades should occur, except that NOAA has to approve transfers between sectors to ensure the sector trading ACE away actually has that ACE available to trade (and is free from other regulatory actions). Thus, there is nothing to prevent the establishment of a more transparent ACE trading market or centralized platform.

While some cited rights-of-first refusal as a constraint, others felt they help the sector system meet another intended outcome, which is to support fishing communities. To the extent that most sectors represent ports or regions, having rights-of-first refusal over ACE trading supports those communities by maintaining access to the fishery rather than see ACE go elsewhere.

3. How sectors treat ACE

Although ACE technically is held by a sector and not its individual members, virtually all sectors assigned any ACE that a member's catch history brought to the sector (their PSC) back to that member. Once ACE was assigned to its members, we found that sectors and their members fell somewhere along a spectrum for how they treat ACE. While some fishermen saw the ACE that had been assigned to them as an asset they needed to either fish or to convert into revenue on the leasing market, it was clear that across the industry, most fishermen also wanted to ensure that their fellow sector members remain profitable, that their fishing ports remain viable, and that the entire industry survives and flourishes. To that end, we found that many fishermen would make ACE available to others in their sector who needed it, often at no or low cost. In some cases, a fishing business is structured to target specific species and while ACE for non-target stocks might be needed to cover incidental catch or might provide additional revenue, we heard several stories of that extra ACE going back into the sector to benefit other members.

4. Non-active permit holders

At most meetings, we asked what attendees thought of the practice of some permit holders to forego groundfish fishing and lease out all of their ACE. We received a mix of reactions. Some felt that a "use-it-or-lose-it" rule ought to apply to ACE. If someone is not actively fishing and earning revenue from past activity in the fishery (through catch history), it feels

unfair to those who remain active or are trying to get into the fishery. The majority of responses we got, however, felt that although there is some inherent inequity, many of those who are not active in groundfish are biding their time to get back in or holding on to a valuable asset to pass along to children or help fund retirement. In fact, attendees reported that at least some of the inactive permit holders they knew made their ACE available at low cost and tried to keep it within their sector or community.

d. Stock assessments not accurate or timely

By far the most common complaint we heard was focused on the stock assessment process. At every meeting with someone from the fishing industry in attendance, the vast majority of the discussion was devoted to strong perceptions of inaccurate stock assessments. Complaints fell along several themes: assessments that are too low; assessments that are too high; year-on-year swings in ACLs that disrupt markets; lack of accountability; any uncertainty costs fishermen fish; and lack of accuracy and stability, disrupting the fishery and its markets. Concerns from industry about problems with assessments are well documented in other Council processes, most notably the Northeast Trawl Advisory Panel, but feelings are so strong and pervasive, that we present a summary of concerns and what we heard were the causes of inaccuracies.

1. Assessments that are too low

Under estimation of stock status compared to fishermen's experience on the water leads to choke stocks: stocks that are difficult to avoid due to high abundance relative available ACE and therefore constrains the ability to harvest more abundant stocks. With all catch counting against a vessel's ACE, the danger of running out of ACE for a choke stock drives virtually all fishing activity, particularly for the inshore fleet that has limited options for where they fish. Trawl fishermen began using net minders early in the sector system to reduce the chances of a large bag of a species they needed to avoid. Fishermen spoke of going from 3-hour tows to 30-minute ones and keeping a close eye on sonars and net minders. Gillnetters and long-liners are reducing set times to avoid choke stocks at the cost of more productive trips.

Some choke stocks, such as GOM cod, have such low allocations compared to what fishermen experience that avoiding those stocks has come to dominate all other aspects of the fishery. For a species that was once the backbone of the region's economy to become the one fish the fleet avoids at virtually all cost had most of the meeting attendees shaking their heads in sad disbelief. In some ports, we heard that fishermen sought only a modest increase in ACE for choke stocks, just enough to make the lease price more attainable or reduce the tremendous risk of one bad tow. Anxiety and frustration were palpable during these conversations.

Attendees pointed to several causes of the problem, ranging from unsuitability of the gear and fishing technique of the survey vessels for catching bottom-dwelling species to changes in seasonal trends in location and timing of concentrations of the species, skewing the time-series comparisons. Many dated the low accuracy of the assessments to the switch from the *R/V Albatross* to the *R/V Bigelow*, maintaining that despite NOAA's calibration efforts, the

fishing characteristics of the two vessels are too disparate for such calibrations to work effectively.

At several locations, we heard frustration that NOAA was not adopting new survey and assessment methods. For example, experiments with video-based surveys appear to be showing greater abundances of certain stocks, such as yellowtail flounder and cod. Fishermen from several of the port meetings had participated in a variety of research programs testing new approaches. They wanted to see those results included in assessments, as they felt those programs were showing abundances that better reflected their experience on the water.

Another consistent theme was that the ACL-setting process overly protects fish stocks and does not adequately incorporate other objectives laid out in Amendment 16 or the National Standards, such as viability of fishing communities and broad attainment of optimal yield. Unlike the process used to determine overfishing limits, which is based on the stock assessment process, biomass targets, and probabilistic risk analysis, there is no quantified method for assessing assessment advice against socio-economic objectives in a way that actually influences the ACL.

2. Assessments that are too high

In several instances, fishermen felt assessments for some stocks were too high. Assessments well above what fishermen experience on the water lead to significant undervaluation of ACE. Such a situation reduces the value of a vessel's overall portfolio and reduces a captain's options for specializing or targeting certain species over others. Undervalued ACE can also lead to unreasonable expectations and lead some – particularly those trying to enter the fishery – to make risky business decisions. For example, one method that new entrants are using to get into the fishery is to purchase an inexpensive permit that has little or no catch history and then lease inexpensive quota for species such as pollock, only to discover that species is difficult to harvest consistently. Fishermen who have been in the fishery long enough to experience swings in assessments have seen stocks go from under- to over-valued mid-season, making such strategies risky. Assessments that are perceived to be too high can result in almost as much uncertainty and lack of overall efficiency as ones that are seen as too low. This is particularly true if an ACL increase is implemented mid-season, when fishermen may have already purchased ACE when a stock value is high only to see the value drop and end up with over-valued ACE.

3. Use (and pay for) fishing data

Even as there was universal disagreement with many (but not all) of the stock assessments, there was an equal and universal eagerness to help improve assessments. Virtually every fishing industry member we met wanted their data and experience to be factored into the assessment process. Some were willing to share their data without charge if it would improve the situation. Others felt they should be compensated for any data they supply that is beyond what regulations require.

The two major areas that industry members felt their data and input could improve assessments were in abundance estimates and the impact of regulations on catch data. The issue of choke stocks in certain areas is so severe that industry members who fish those areas are convinced that if they were able to document what they know is out there, it would lead

to better assessments. Fishermen now do all they can to avoid stocks, such as GOM cod, so they fear their landings data simply reinforces the low assessments. But if they were allowed to fish normally, they would be able to document an abundance well above assessments.

In addition, the strict limits have led to significant changes in their fishing practices. For example, where hours-long tows may have been common a decade ago, most inshore trawlers are now hauling back after a half-hour or less. Many are using net sensors and limiting the weight in given tow out of fear that a full bag could have an abundance of a choke stock, such as cod.

An added obstacle to engaging industry more effectively in stock assessments is the general opacity and complexity of the assessment process. There is a lack of understanding of the basics of assessment science and, particularly, how surveys are designed, implemented, and interpreted. Captains generally do not trust that their data are being used because it is not clear which data NOAA uses and how they incorporate the industry's data into assessments.

e. Loss of markets and infrastructure

At every meeting with fishing industry attendance, we heard grave concerns about the loss of market access and the decline of onshore infrastructure. Exacerbating the decline in landings has been a decline in dock prices across the board and an increase in costs, such as ice and dockage.

1. Loss of markets

As their landings have dropped, vessel owners are seeing fewer buyers showing up to auctions, with the resulting declines in price. Inconsistent landings, particularly by the inshore fleet, have meant that purchasers are no longer assured of finding enough product to fill their orders at the traditional auctions. With fewer buyers, demand has become as unpredictable as supply. The result has been a downward spiral that is self-reinforcing, forcing captains to pare operating costs to a bare minimum, defer routine maintenance, and put off investments that could help fish handling and quality improvement.

For some in the sector system – particularly the inshore fleet operating on one- or two-day trips and facing impacts from constraining stocks – the limited markets and unpredictable landings have prevented them from realizing the potential market benefits of a catch share system. In theory, knowing they have an annual allocation of various stocks, captains could plan their activity to maximize profits or even enter into buying agreements with purchasers that could yield some predictability to their dock price. Offshore vessels, with larger, more consistent landings and generally more options for avoiding constraining stocks, have been able to do just that – establishing relationships with buyers that reduce uncertainty in their businesses. But the impact of constraining stocks mean owners of smaller vessels cannot enter into those arrangements with any certainty that they could honor the terms for supply.

Several small vessel captains compared the situation (unfavorably) to DAS, when the cod trip limits created consistency and predictability in landings that both they and buyers could rely upon. While trip limits, of course, suppressed landings for cod, the steady supply kept prices reasonable and predictable since the market could count on those landings.

Captains from several ports also talked about how sensitive the market has become to even small fluctuations in landings. With so few buyers showing up at auctions, relatively small spikes in offloads can lead to drastic reduction in prices. One Gloucester fisherman related how he could land 1,500 pounds of grey sole and get a decent price, but if another vessel came in and also landed that amount, the price would tank by half. A total of 3,000 pounds of one stock landed in Gloucester – the US's oldest fishing port – is more than the market can bear. While that might lead captains to time their trips for when others are not out, doing so creates a significant safety risk: with reduced crews and strained resources, captains do not want to be on the water alone.

As supply from New England waters has declined, major seafood buyers in the region have sought – and found – more consistent supplies from overseas. The steady, predictable supply of high quality, traceable product from countries such as Iceland and Norway are outcompeting New England. Even if landings come back, the region's fishery will be hard-pressed to regain market access. Many of the region's dealers and processors have built product offerings and developed contractual relationships with major retailers and restaurant chains around the foreign product. Working their way back into these long-term, high volume supply relationships will be very difficult for New England harvesters.

Making matters worse for the region's fishery – again, primarily the inshore fleet – is the difficulty in providing the market with consistent quality as well as quantity. As foreign fleets get updated with on-board processing and freezing equipment, the quality of their product has improved. Meanwhile, New England's fleet consists mostly of older vessels that are difficult and expensive to modernize. With such small landings, captains who do take great care in providing the market with a high-quality product rarely see a price increase, since their catch gets blended with others' that may have been handled poorly or not even been stored in ice.

2. Loss of infrastructure

As the fleet has dwindled and landings have dropped, there has been a concurrent loss of onshore infrastructure. Meeting participants at virtually every port, including Gloucester and New Bedford, bemoaned the declines in infrastructure. People spoke of lack of icehouses, reduced capacity for handling landings at offload sites, and reduction in services, such as gear manufacturing and boatyards capable of maintaining steel vessels.

Where physical infrastructure remains, reductions in staffing and lack of upgrades mean that, in many ports, facilities are not capable of handling large offloads quickly enough to be worthwhile. In smaller ports, there has been such a loss of services that captains find they have to do it all themselves. One vessel owner/operator from the South Shore of Massachusetts spoke of offloading his own catch to his truck, hauling it to Boston to sell, driving to New Bedford to get a load of ice, then driving back home to get some sleep and start all over again before dawn the next day.

The degradation of infrastructure makes it even more difficult to deliver high quality product to the market. Many ports have no or reduced ice-making capability. Under-staffed offloading stations mean it is more difficult for those businesses to handle product properly, even if it

comes off the vessel in pristine shape. Lack of trucking and other services make it difficult to get product from smaller ports to market in a timely way, further compromising quality.

f. Disruption of succession

Although not connected with sectors directly, there was widespread concern about the lack of young people coming into the fishery to take over the wheelhouse. Few captains were encouraging their daughters or sons to take over. Finding young people outside fishing families is particularly difficult because there is so much to learn to run a successful fishing business. People who did not grow up in fishing families, hearing stories of how hard it is to be at sea, may be ill-prepared for the rigors of the profession. The age of the vessels makes attracting new crew even more difficult, due to limited facilities, equipment, and accommodations on board.

Even if someone did want to enter the fishery, the financial realities make it extremely difficult to afford. Prices for permits with decent allocation are very high. Some are getting into the fishery by purchasing permits with little or no history and entering the lease market to find affordable allocation. But this approach depends on avoiding non-target species completely and even then, having at least some quota for every species to cover assumed discard rates that reflect the landings of the sector as a whole.

The depth of concern about who will succeed the current captains was particularly striking. Again, we did not hear a direct connection to the sector system, but we did hear deep-seated and heartfelt concern about the future of the fishery. The tone of the conversations on the topic of succession was notably different from other topics. It shifted from being matter-of-fact or frustrated when discussing choke stocks, allocations, or assessments to being one of despair and disbelief that even if the industry were to regain its footing, there were just too few people with the skills and inclination to carry its traditions and knowledge forward.

g. Impact of sectors on large versus smaller boats

Most of the attendees at the meetings were operators of smaller, inshore vessels. As a result, much of what we heard came from that perspective – although we did get a couple people who represented larger vessels or multi-vessel companies. Generally, there is a recognition that the sector system has played out differently for larger boats than smaller ones. The difference is mostly due to the impact of choke stocks and the limited range – and therefore limited ability to avoid constraining stocks – of small boats. The participants with larger vessels recognized this differential impact and generally felt that any changes to the system ought to serve the smaller boats that are struggling.

We did, however, hear frustration that early in the sector system some larger vessels seemed to take advantage of the elimination of trip limits to come inshore to fish in areas they previously avoided. Some owners of smaller vessels felt there should have been an inshore/offshore division from the outset to protect the smaller, more vulnerable inshore

stocks. More recently, either because of a rumored agreement within the industry or due to economics, the larger vessels have tended to stay offshore.

We heard several concerns about the impact of uncertainty stemming from the stock assessment process from owners of multiple vessels and political leaders from major ports. Those reflections trace a direct connection between uncertainty in assessments to uncertainty in allocations, making investments and buyer contracts difficult and risky. Larger vessels that are able to fish offshore, primarily on Georges Bank, have generally been able to build on the benefits of the sector system. Many of those vessels have been able to assemble allocation to cover their trips, can fish in areas or use gear to avoid constraining stocks, and invest in onboard systems to improve and maintain quality of their catch. In general, these companies either have direct contracts themselves or sell to dealers who can attract buyers due to a more consistent supply. Recent investments in the fishery indicate that with sufficient capital, groundfish businesses can be profitable.

h. Monitoring and Enforcement

1. Co-management and self-enforcement

In several ways, the sector system is designed to co-manage the fishery by shifting some of the reporting, monitoring, and enforcement responsibilities to sectors. For example, a key stipulation in the sector system is that sector members are jointly liable for ACE overages, illegal discards, and misreporting of any other members. Sectors, therefore, take any rule-breaking extremely seriously, as bad behavior from any one member puts them all at risk. At several port meetings, we heard that sector managers and members express frustration that NOAA does not fully appreciate the self-enforcement procedures within sectors. Industry members and sector managers expressed a desire for NOAA to trust the system and allow sectors to handle some enforcement cases internally.

2. Catch monitoring

The initial provision that mandated dockside monitoring of 50% of groundfish trips was not popular. Most felt that it did not accomplish anything, and no-one seemed to be using the reports that monitors submitted. In addition, the provision created logistical problems for vessels, particularly in smaller ports. As the cost was covered through grants from NOAA, the primary concerns were around logistics and lack of purpose.

GMRI held the port meetings during the period that NEMFC was considering Amendment 23 to the Multispecies plan, which focused on making adjustments to catch monitoring in the commercial fishery. The topic of at-sea monitoring (ASM) was, therefore, top of mind for many meeting participants. Most – not all – attendees understood the need for some level of ASM. But the amount necessary, the type of monitoring and, particularly, who should shoulder the cost was the subject of much discussion. Several attendees were already using electronic monitoring and having the cameras running 100% of the time. Those captains generally were involved in electronic monitoring pilot programs to demonstrate that their vessel trip reports are accurate and to prove to NOAA that their catch data is reliable. Other captains, who were taking at-sea monitors when required generally expressed great concern

that the added cost, inconvenience, and risk of increased monitoring could be the final straw for them and their businesses.

Several attendees wanted increased monitoring to be coupled with more flexibility in allocations to allow time for the fishery to adjust to the added provision. Most attendees were not convinced that higher monitoring levels would result in stock recovery and even if it does, it will take too long for improvement to result in higher catch limits.

In addition to concerns about the increased costs and other impacts of at-sea monitoring, many meeting participants expressed frustration at the complexity and perceived inconsistency of the pre-trip notification system. There was concern that there are not enough trained monitors and the rapid turnover means that captains frequently have to introduce their vessels to new monitors. Inexperienced monitors also tend to be less efficient on board, get in the way more often, make costly mistakes, and can question fishing practices.

i. Lack of trust in NOAA

At many of the port meetings, participants expressed profound doubt that their comments would make any difference. That doubt stemmed from having participated in forums, public input sessions, and meetings over the years and not seeing their concerns and ideas taken into consideration or reflected in ultimate decisions.

Yet, fishermen, their families, and supportive community leaders showed up and spent several hours sharing their concerns and offering ideas for improving the system. One attendee, a vessel owner/operator, said he had not been to a meeting in 20 years out of frustration with the process but came to a port meeting because the he felt the industry was at a breaking point. The overriding tone of the meetings was of a passionate devotion to the fishing industry and a commitment to ensuring its future.

Most felt NOAA's management of the fishery would improve significantly if they took the time to listen and engage with industry, not just through the official Council process, but in sessions that allowed a deeper exchange of ideas and reactions. Several pointed to the Marine Resource Education Program as a good starting point, but felt that while those trainings started a dialogue, it did not continue.

Another consistent message from industry was frustration that they get blamed for every problem that arises. The current move to increase at-sea monitoring felt to many like a great example. We heard many comments that rather than questioning the accuracy of their own surveys, NOAA responds to low assessments by imposing further restrictions on fishing. We heard that not only will they cause hardship for many vessels, but it does not address the root cause of the problem. Essentially, industry feels that while responsibility may exist across the industry-science-management spectrum, only they get held accountable. Adding to the indignation is the sense that NOAA does not respond to ideas from industry or make adjustments in its approach.

III. Has Amendment 16 met its stated goals and objectives?

During the meetings, many participants reflected on whether Amendment 16 had met its stated goals and objectives. We present those thoughts here for the goals and objectives that were discussed. During the meetings, participants referenced Goals 1, 2, 3, and 4 along with Objectives 1, 3, 4, 6, 7, and 8. Given the interconnected nature of the goals and objectives, there were similar and overlapping comments, which we attempt to minimize in this summary. While Section II summarizes comments heard from meeting participants, this sections summarizes our reflections on Amendment 16's goals and objectives with respect to participants' comments.

a. Goals

1. Goal 1 – maintain sustainability

Goal 1 of Amendment 16 was, consistent with the National Standards and other required provisions of the Magnuson-Stevens Fishery Conservation and Management Act and other applicable law, to manage the northeast multispecies complex at sustainable levels.

Comments regarding stock assessments were wide-ranging and dealt mostly with the inherent impossibility of managing 20 different stocks at sustainable levels all the time. Ecosystem dynamics that fall outside fishing effort have significant impact on biomass, such as predator-prey and natural fluctuations in recruitment and productivity. The ever-changing ecosystem conditions and the constant interplay between fishermen adapting to new regulations and a shifting marketplace led most meeting participants to believe that achieving sustainability across all species was too difficult and an unwavering adherence to that principle created such situations as choke stocks.

2. Goal 2 – Fleet capacity

Goal 2 of Amendment 16 was to create a management system so that fleet capacity will be commensurate with resource status to maintain economic efficiency and biological conservation while encouraging diversity within the fishery.

While the switch from DAS to sector management was regarded by many as necessary to conserve the resource and mitigate the high pressure and hectic fishing strategies used to maximize profits under DAS, meeting attendees identified certain flaws in its execution that have precluded full achievement of Goal 2.

Through the change from input-based control to output-based management and the carry-over of permit-based limits on vessel size and horsepower, the industry has struggled to maintain a diverse and economically efficient groundfish fishery. Permit-based restraints have prevented some captains from diversifying their fishing operations to adjust to the changing ecology of the groundfish resource and, in some cases, left them fishing with outdated, inefficient and expensive engines or gear. For many, input based restraints such as these

impede their ability to make the best use of their allocation to optimize revenue and market opportunity.

The switch in "currency" from DAS to catch history shifted access to the fishery, leaving some fishermen with allocations that were insufficient to sustain their businesses. Everyone agreed that overall capacity had declined significantly, but most felt it had dropped well below benchmarks for economic efficiency and biological conservation. Indeed, most pointed to the degree of under-harvested ACE to show the fishery could sustain more capacity (and livelihoods).

3. Goals 3 & 4 – maintaining a directed fishery & minimizing adverse impacts

Goal 3 of Amendment 16 was to maintain a directed commercial and recreational fishery for northeast multispecies, and Goal 4 was to minimize, to the extent practicable, adverse impacts on fishing communities and shoreside infrastructure. Most meeting participants discussed these two goals together, as maintaining a directed fishery is dependent on maintaining shoreside infrastructure.

Of all the comments heard at port meetings, remarks on declining infrastructure and participation in the fishery were the most universal and solemn.

Many in the industry feared that the feedback loop between declining infrastructure and reduced fishery participation would lead to the elimination of a commercial Northeast multispecies fishery altogether, or at the very least end their own participation in the fishery. In many ports, fishing cooperatives, NGOs and commercial organizations described efforts to preserve or expand working waterfronts and support the industry. However, these descriptions were closely followed by reflections on the difficulty of rebuilding when choke stocks and inconsistent or low landings inherent to the catch share program inhibit fishermen's ability to provide a predictable and high-quality supply to the marketplace. To effectively meet Goals 3 and 4, some ports suggested that relief funds were needed to revitalize shoreside infrastructure and nurture the remaining fleet into a robust and modernized industry.

4. Objective 1

Objective 1 was to achieve, on a continuing basis, optimum yield (OY) for the U.S. fishing industry.

Briefly, OY is defined in the Amendment as the amount of fish that will provide the greatest overall benefit to the nation, taking into account the protection of marine ecosystems, and is prescribed on the basis of the maximum sustainable yield from the fishery, as reduced by relevant economic, social or ecological factors. Similar to responses to Goal 1, most attendees felt the process does not adequately consider economic and social factors and thus do not meet the objective to achieve OY. They felt that a method for evaluating assessment advice against its socio-economic implications must be better developed and incorporated into the process of setting ACLs. Finally, there was strong motivation among attendees to participate in improving stock assessments, but many felt that their efforts on collaborative research or in providing fisheries dependent data have had little-to-no effect on how the stock assessment and associated analyses are conducted. Many urged further promotion of collaborative

research and better incorporation of those results into the stock assessment, as outlined in Objective 6.

5. Objective 6 – promote research

Objective 6 was to promote research and improve the collection of information to better understand groundfish population dynamics, biology and ecology, and to improve assessment procedures in cooperation with the industry.

Captains and vessel owners across the region are eager to participate in research and participate in analysis to improve stock assessments. They would like to see increased funding for collaborative research and several suggested paying fishermen for fisheries-dependent data they collect.

6. Objective 7 – maintain diversity

Objective 7 was, to the extent possible, to maintain a diverse groundfish fishery, including different gear types, vessel sizes, geographic locations and levels of participation.

As the inshore owner-operator fleet has shrunk in response to pressure from choke stocks, dwindling markets, and uncertain allocations, groundfish fishing has becomes a less and less desirable career to young entrants to the fishery. With few ready to take over the wheelhouse and a mountain of challenges facing the fleet, soon only a small number of inshore owner-operators will remain to maintain the commercial fishery and steward the resource into the future. However, as companies invest in offshore fishing fleets, the landscape of the groundfish industry is changing. With the fate of the inshore fleet so uncertain, many participants worried that the future commercial groundfish fishery and its stewards lie in fishing corporations and those that crew the offshore fishing fleets.

7. Objective 8 – measures of success

Objective 8 of Amendment 16 was to develop biological, economic and social measures of success for the groundfish fishery and resource that ensure accountability in achieving fishery management objectives.

Sectors have been designed with both social and economic measures to ensure accountability in achieving fishery management objectives. These measures include but are not limited to: joint and several liability, self-enforcement procedures, and socio-cultural ties. During meetings we heard that these measures, although effective in holding members accountable and minimizing allocation overages, were under-utilized and potentially poorly understood by fisheries managers and law enforcement. Comments regarding management and enforcement indicated a strong desire among sectors to more actively steward the fishery and manage its participants and also to be more trusted and engaged in this role by NOAA.

It was clear from our port meetings that members of industry measured success in different ways, just as they managed their sectors, ACE allocations, and businesses differently. To most, economic and social measures were not effectively considered by fisheries management, but they were felt daily in their sectors, businesses, and personal lives. Some sectors cannot afford full time managers, or the costs of insurance, rent, utilities or

bookkeeping and join with other sectors to share responsibilities. Some fishermen feel that those who are not actively fishing should give up their ACE to support active fishermen and new entrants, while others need critical revenue from leasing to support their retirement. Most made efforts to distribute ACE amongst the wider groundfish fleet in order to support communities and relationships throughout the region. But most attendees felt that it is left up to the fishing industry to achieve economic and social success only after the biological measures of success had been met.

IV. Looking to the future:

We heard a number of suggestions from participants regarding the future of the groundfish fleet. While opinions varied across and within ports, we heard comments and suggestions regarding: the revitalization of the groundfish fleet, improving stock assessments and ACE management, the impact of offshore wind development on assessments and allocation, and utilization of fisheries dependent data.

a. Revitalizing the groundfish industry

1. Invest in shoreside infrastructure

a) Fund programs so working waterfronts are able to compete against better funded, non-commercial development.
b) Support efforts to improve the quality of product from vessel all the way through the supply chain.

2. Invest in seaworthy boats and trained crew

a) Fund programs that support the design and construction of new vessels.
b) Support initiatives to train new crew.

3. Support fair transfer of permits

a) Compensate permit holders who take a lower price for their permit to keep it in their community.
b) Make a portion of those permits available to new entrants who commit to the fishery.

b. Improve assessments & consider economic impacts

1. Improve the stock assessment science

a) Institute an industry-based survey to augment the trawl survey, especially for choke stocks.
b) Incorporate new survey methodologies, such as exploring video or acoustic approaches.

c) Solicit feedback early-on from industry when it matters in the process and in a manner that invites participation.

2. **Incorporate economic impacts more deliberately into catch advice**
   a) Minimize large swings in catch limits.
   b) Test incremental increases for constraining stocks (to allow greater access to other stocks while monitoring risk to the depleted stock).
3. **Increase funding collaborative research & use results**
   a) Build trust and buy-in through more collaborative research.
   b) Invest in the industry's innovation.

c. Adjustments in regulations to consider:

1. **Remove effort-control-based regulations, such as length and horsepower limits on permits.**
2. **Limit swings in TAC-setting – both up and down – to minimize economic impacts.**

d. Plan for impact of wind development by addressing:

1. **Impact on stock assessments;**
2. **Impact on quotas (e.g. through mortality during construction, lack of access for survey); and**
3. **Impact on ACE for vessels dependent on affected areas.**

e. Invest in & use fisheries-dependent data.

1. **Fisheries-dependent data hold the key to the future.**
2. **Data sharing could be a hugely profitable tool to both fishermen and management.**
3. **Create a network of fishermen's data to get a comprehensive picture and tell the "story" of fish populations from the decks of fishermen.**
4. **Fishermen are currently on the losing side of data; if they were paid for their proprietary information, owners/operators would be more willing to share their data and it would probably be more accurate.**

V. Conclusion

The introduction of sector management into New England's groundfish fishery in 2010 changed virtually every aspect of the fishery, from how individual vessels operated to how they interacted with each other, federal regulators, and the marketplace. While segments of the industry are not happy with the introduction of sectors, most everyone we spoke to felt the system is functioning better than DAS would have and that with some improvements, could function better.

A passionate commitment to the industry permeated all of our meetings and came from industry members and their families, along with their neighbors, suppliers, community leaders, and political representatives. All were there because they see a future for the industry despite the list of hurdles it now faces.

GMRI is grateful to the New England Fishery Management Council for funding the work and its commitment to solicit this feedback. We also deeply appreciate those who took time out of their evenings to attend the meetings and share their ideas, frustrations, visions, and emotions. We hope we have captured those thoughts and feelings adequately here and that this collective effort results in a deepening commitment from all sides to build trust, seek knowledge, and engage all perspectives to ensure the industry's future.