

12 July 2010

**Goals and Concerns of Fishery Stakeholders in the Development of Catch Share
Management in New England**

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Table of Contents

Executive Summary

Introduction

 Purpose of Study

 New England Fisheries and Catch Shares

 Definitions of Catch Shares

 Draft National Catch Share Policy

 Moving Towards Catch Shares

Goals and Concerns of Fishery Stakeholders in the Development of Catch Share Management in New England

 Methods

 Characteristics of Respondents

 Advantages

 Advantages with Catch Shares by State

 Advantages with Catch Shares by Position

 Disadvantages

 Disadvantages with Catch Shares by State

 Disadvantages with Catch Shares by Position

 Suggested Ways to Address Concerns/Disadvantages of Catch Shares

 Suggested Ways to Address Concerns/Disadvantages with Catch Shares by State

 Suggested Ways to Address Concerns/Disadvantages with Catch Shares by

 Position

 Disadvantages and recommended ways to address concerns/disadvantages

Conclusions

Recommendations

References

Annex 1: Questionnaire: Catch Shares in New England Fisheries

Annex 2: Design Solutions

Annex 3: Q4 - Advantages to Catch Shares (The group into which each response was placed is highlighted).

Annex 4: Q5 - Disadvantages to Catch Shares. (The group into which each response was placed is highlighted).

Annex 5: Q6 - Suggest ways to address concerns/disadvantages about catch shares? (The group into which each response was placed is highlighted).

Annex 6: NOAA's Draft Catch Share Policy

Executive Summary

Many concerns have arisen among stakeholders in New England fisheries about the design and implementation of catch share management. The purpose of this paper is to summarize and categorize the concerns that stakeholders expressed in a Sea Grant survey commissioned by EDF to facilitate joint problem-solving. In this report, we summarize and categorize stakeholder concerns as articulated in the survey and then offer a preliminary evaluation of the application of solutions based on experience from other catch share programs. These solutions can be introduced and vetted at appropriate times during the suggested participatory process. It should be noted that opinions concerning catch-shares seem to be changing rapidly among New England fishermen. Our survey was conducted from October 2009 through February 2010, and the results may not reflect current understandings. Nevertheless, the findings can represent a baseline to evaluate changes in opinions concerning catch-shares.

Methods An open-ended survey questionnaire was prepared and pre-tested. The survey had 10 questions about catch shares and an additional 10 background questions. Fishermen (owner/captain, owner, captain, crew) and other fishery stakeholders (processors) were interviewed in person and by telephone (only in Maine). Interviews were conducted in 35 ports in five states – Maine, New Hampshire, Massachusetts, Rhode Island and Connecticut. All fishing types were interviewed, not just ground fishermen. The total sample size was 172 giving us a maximum error of plus or minus 7.47% (95 percent confidence interval).

Summary Findings Analysis of the data, revealed a large number of distinct responses to questions concerning advantages, concerns/disadvantages and ways to address concerns/disadvantages. In order to facilitate analysis, individual responses were grouped into categories which capture the essence of the original response.

Perceived advantages of catch shares Table 1 indicates the percent distribution of the categorized advantage types. Most frequently mentioned categories are 1) Social and Community—these advantages refer to the social gains created by catch share management; namely, preserving sea communities, requiring less time at sea, a more congenial relationship with the Coast Guard, and an increased necessity for fishermen to work together. A fisherman noted that catch shares force fishermen to work together, to join forces and act as a cohesive unit. Catch shares have mobilized this fishing fleet for the first time in long time. 2) Increased Ability

| Table 1. Percent distribution of advantage types | |
|---|----|
| Social and Community | 16 |
| Flexibility and Decision Making | 16 |
| Allocation | 13 |
| Economic and Profitability | 13 |
| Environmental and Ecological | 10 |
| Increased Safety | 9 |
| Regulatory Improvements | 8 |
| Other | 2 |
| No advantage | 25 |
| Total > 100% due to multiple responses | |

for Decision Making and Flexibility—this grouping covers the opinions that quotas will allow for better business decisions and an increased flexibility on when to fish. A monkfish fisherman commented that, “under days at sea fishermen are going out and hauling fish but motoring around for another 12 hours so that they can use up the day [as required by current regulations].” Another fisherman stated, under catch shares you would spend less time at sea and be safer.” 3) Allocation advantage—these address the consistency and stability of output regulations versus input regulations. Also grouped in this category are opinions that allocations are given fairly to the active fishermen who deserve them. As one fisherman said, “We are getting a good allocation so that is good.” 4) Economic and Profitability Advantages—this grouping includes opinions expressing the economic advantages to catch shares, these perceived advantages are better control of market prices, less fuel consumption, higher returns on investments. As a fisherman noted, “you can catch fish at your discretion, go when you know the fish will be around, when you can get a decent price and when the weather doesn’t suck.”

Perceived disadvantages of catch shares Table 2 indicates the percent distribution of the categorized advantage types. The majority of respondents said in response to this question that there are no advantages to catch shares. Most frequently mentioned disadvantage categories are 1) Inequity of effects disadvantage—this grouping includes opinions that catch shares will unequally affect profitability across gear type, size, location, and position. One fisher noted that, “[it] doesn't capture the fishing effort of the boats that worked on other species when groundfish were depleted. NMFS asked us to stop working on groundfish, so we moved on to dogs [dogfish], and whiting. This system only rewards the guys who never stopped working on groundfish. Big boats are going to force the small boats out, and this fishery will be run by corporations. It is already tough to find a reliable crew, and with less to catch, guys won't be able to keep crews on. You need to make money.” Another stated, “It will really hurt the smaller boats who didn’t have strong landings during those years. I was forced to have a ground fish permit during that time because I was a scalloper. Now if I wanted to enter a sector, they would look at that and say I didn’t have any landings during those years so I wouldn’t get a good allocation because I was fishing for scallops. The government made me hold a groundfish permit to fish for scallops. Now that permit is worthless.” Another suggested that, “Smaller boats are going to get smaller shares and the ones stuck in the common pool are in trouble.... It [catch shares] will be good for a few big boats but will be tough to make a profit for many small boats.” 2) Design disadvantage—this grouping includes opinions associated with the current structure of catch share management, most of which concern the incompatibility of species specific quotas with New England multispecies fishing. Another concern was the belief that the

| Table 2. Percent distribution of disadvantage types. | |
|---|----|
| Inequity of Effects | 57 |
| Design | 39 |
| Social and Community | 35 |
| NOAA-Fishermen Gap | 34 |
| Allocation | 31 |
| Economic and Profitability | 31 |
| Implementation and Information | 28 |
| Ecological | 9 |
| By-Catch | 9 |
| Other | 2 |
| Total > 100% due to multiple responses | |

end of 2:1 Days at Sea will lead to over fishing near shore. One fisher said that, "Catch shares will hurt the crew them most. This boat has a small groundfish quota, and the owner is leasing it out to boats in New Bedford. Now the crew won't have those trips to Georges." Another noted that catch share management, "Doesn't account for fact that DAS and catch shares are apples and oranges: if you have no history, you have no allocation." Another noted, "Catch shares make is so you can't work your way into the fishery anymore. Young guys can't afford to buy an allocation." Finally, a fisherman in Maine stated, "It takes away from Maine's fishing culture, where you can work your way into the fishery." 3) Social and community disadvantage—this grouping ranged in scope, but were generally focused on (a) a decline of the “fishermen” mentality—defined rather loosely as a cowboy atmosphere in which greater risk and extreme effort create greater rewards; (b) comments addressing the adverse effects catch shares will have on coastal communities, namely that consolidation will hurt, fishermen, shipyards, and local business. Some fishermen refer to this consolidation as the Wal-Mart effect, in that it will put many small scale operations out of business; (c) concerns about the increasing difficulty for new guys and younger generations to enter the business, which in some cases may end a long family tradition. A Provincetown fishermen stated: "To join a Sector, you are forced to enter into a binding contract with other fishermen that I do not know. As it stands, I'll be in business with boats from Maine and North Carolina." 4) NOAA/Fishermen gap—this grouping refers to the disparity in beliefs and practices that exists between NOAA and active fishermen. This category also covers the general aversion to being regulated by NOAA and other government agencies, identifying reasons such as lack of accountability, excessive inefficiencies, and perverse incentives. Comments that reflect the adversarial relationship of fishermen and NOAA/ EDF are grouped into this category. As a fisherman noted, "Until the science is corrected you can't fix the regulations. NMFS doesn't have a good feel for what the stocks are really at because they don't know what they are doing when the go out there and do survey trawls. They trawl at night in areas when we all know there are never any fish in that area at night. They use the wrong equipment and figure when they don't catch anything, then there must not be any fish out there. This is most fish I have seen in 20 years now."

Perceived solutions Table 3 indicates the percent distribution of fishermen's suggested solutions to the problems associated with catch shares. Most frequent solution categories are 1) Change

| Table 3. Percent distribution of perceived solution types. | |
|---|----|
| Change Allocations | 27 |
| Keep Days at Sea | 19 |
| Share Information | 18 |
| Replace Management System | 17 |
| Obtain New Information | 15 |
| Slightly Modify Sectors | 13 |
| Regulate Markets | 10 |
| Implementation Process | 9 |
| Fix ByCatch Issues | 8 |
| Introduce Subsidies or Incentives | 6 |
| Introduce Systems for Permit Buying/Selling | 5 |
| Revisit Policy | 3 |
| Monitor System | 3 |
| Increase Industry Influence | 2 |
| Introduce Systems for Quota Buying/Sharing | 1 |
| Gear Modifications | 2 |
| More Government Accountability | 1 |
| Do not Introduce Subsidies | 1 |
| Permit Banks | 1 |
| Total > 100% due to multiple responses | |

allocations—allow sector members to choose years used as baseline, craft management that can account for shifts in stock biomass, allocations to historic ports and fishermen, allocate shares by areas fished not species or history, raise quota. 2) Keep days at sea 3) Share information—better communication between managers and fishermen, better education on catch shares, better information on closed areas) 4) Replace management system—go go to ITQs, point system, Magnuson-Stevens law flawed.

Specifically we will address solutions recommended by the respondents for the top four disadvantages. Concerning inequity effects the most important solution proposed was to create an allocation design that will be fair for small boats. As a fisher suggested, " Give the same allocation to everyone. The small boats are the ones the support the infrastructure and community because there are more of them, but more of them will go out of business with the current sector plan. The small boats are also the ones that cause the least impact on stocks and environment. Take into account what we were fishing for back then. Like I mentioned, the government urged me to go catch monk, so I have hardly any groundfish landings during that time they are using as catch history." Another stated that, "They really need to consider the smaller boats when creating regulations. The reason the created Magnuson-Stevens was because off all the large vessels depleting stocks. Now with the this new management plan they will kill off all of the small boats, and only the huge boats will be left."

With regard to design disadvantages, a common comment was "stay with days at sea." Another fisherman stated, "Do not use Hook Sector as an example of how Sectors work, the Hook Sector only deals with 2 species, not 15 in the multispecies complex." Another fisherman suggested, "The only way that I can see to correct the entire system is some sort of buy back plan, and not an industry buy-back plan. Take like 1% of what they used to bail out the banks and use that for buy back. You have guys that have invested \$10-\$15,000 in a trawl net and they don't even get to used them for most of the year because of the regulations. They end up sitting in the parking lot all year." Others were dissatisfied with the influence of environmental NGOs on management design. Turning to solutions provided for social disadvantages, we need a mechanism to allow for new entrants. For example, put a percentage of the TAC ion to the pool for these new entrants. Secondly they suggested limiting consolidation. As a fisherman suggested, "Permit banks are necessary to prevent runaway consolidation and the resulting crop

sharing....Permit banks need more initial capital to prevent big company buyouts." Finally with regard to the NOAA/fisherman gap, it was suggested that there should be increased industry input and influence. As one fisher noted, "[we] won't support [sectors] until they start making policies that come from people who understand the industry." Another stated, "[we] need more of a democracy [in regulations]. Let us [fishermen] be heard. Everything is so screwed up and we are the ones who can barely make a living." It was also suggested that there should be increased accountability for fisheries managers. As suggested by one fisher, "The best thing they can do is fix the science. They [NMFS] really don't know what is going on out there, and there are no repercussions for getting things wrong."

Recommendations Our findings indicate that the most important actions necessary to ensure the success of catch share management in New England fisheries are increased education and community outreach, increased fishermen input, and a method to produce equity of impacts among active fishing boats. These suggestions arise from not only the disadvantages that fishermen identified during the interview process, but also from the great disparity of knowledge among fishermen. The pace of implementation of catch shares is too fast and may require more engagement with fishermen, which takes time if done properly. Many fishermen are frustrated because they do not fully understand catch share management. They also feel that regulations change too frequently to make rational business decisions. A concerted effort to increase industry participation and education is required to minimize future altercations and lawsuits. . Many of the above issues could be addressed with increased information and community outreach. In that vein, the following are some specific recommendations:

Explain Research and Stock Survey Methods and Allow for Adaptation - This is especially important considering the great number of fishermen who believe stock surveys to be highly inaccurate.

Establish a New and Efficient Way to Elicit Input from Fishermen - Fishermen feel largely disenfranchised from fishery management officials. Many individuals feel the NEFMC is not responsive to their suggestions and has hidden motives. Creating a healthy give and take from the community is essential. Possible solutions to this problem are increased workshops that stress joint accountability and fishery objectives, more easily understood letters and regulations, periodic surveys either by mail or in person.

Increase Overall Information Prior to Implementation - Respondents express concern over the lack of information about key issues, including common pool regulations, closures, and

method of quota transfers. Possible solutions include simple and practical brochures and fact sheets.

Create a Participatory Process - Currently, the relationship between fishermen and regulators is most accurately defined as adversarial. Creating a department or official whose primary concern is promoting participation and transparency could go a long way in creating a less hostile environment.

Create a Catch Share Working Group - Have the NEFMC create a catch shares working group comprised of fishery managers and stakeholders charged with assessing the catch share program and recommending improvements. This group can meet outside of the Council setting to have in-depth discussions on catch share goals, implementation, and design.

Incorporate Mechanisms to Limit Fleet Consolidation - Many fishermen expect corporations and high capital entities to buyout local boats. This expectation leads to a fear that coastal communities will be devastated.

Consider Allocation Changes and Bycatch Flexibility - Many stakeholders are concerned that their quotas for certain species—specifically pollock and cod—are too low. Since certain fish swim together, it becomes impossible to catch one species without the other and reaching one quota prevents fishermen from catching the other.

Keep Costs Low - Many fishermen feel that increased monitoring costs and management costs will negatively affect the profitability of an industry that is already in trouble.

Consider Environmental Incentives - Create incentives that reward boats which minimize their impact on stocks and the environment. Unless sectors are correctly managed, they may favor the bigger, more environmentally damaging boats. Provide incentives for less selective gear types to transition to more selective gears.

Introduction

Purpose of Study

The overall objective of this study is to identify and address the goals and concerns of fishery stakeholders in the development of catch share management in New England. Environmental Defense Fund commissioned this study in order to provide fishery managers with constructive recommendations on how to improve the design and process of implementation of these programs.

New England Fisheries and Catch Shares

In New England, fisheries managers, fishermen and other stakeholders are in the process of developing catch shares as an alternative management measure in a range of commercial fisheries in the region. This shift is based on several concerns, including: (1) the status of stocks and health of fisheries resources, (2) problems with the existing fisheries management system,

such as regulatory discards, and (3) reduced profits and livelihoods for fishermen. Since 1996, New England groundfishermen have seen their number of days allowed to fish drop from 116 per year to approximately 24 days per year in 2010. Results of the GARM III indicated that overfishing continued to occur under DAS (GARM III).

A catch share system is reported to offer a number of benefits over effort regulations in order to achieve improved stewardship and more sustainable, profitable and safe fisheries in the future (Johnston and Sutinen 2009). Catch shares have been implemented in over 300 fisheries around the world from New Zealand to Namibia to Norway, in fisheries large and small, multispecies and single species. Today there are over a dozen U.S. catch share systems in place, with more under development.

Studies demonstrate several benefits of catch shares, including the reduction of the probability of fishery collapse (Costello et al. 2008), increased catches (Heal and Schenk 2008), and improved management performance with respect to conservation targets (Essington 2009). Conversely, catch share systems have caused adverse impacts such as excessive consolidation of the fishery, loss of small fishing operations and community heritage, a sense of privatization of a public good that leads to a false sense of security among fishermen, and high costs and other barriers to entry into fisheries (Ecotrust Canada 2009, Pew 2009, Macinko and Whitmore 2009, Meridian Institute and MRAG Americas, Inc. 2010).

The performance of catch share systems in terms of conservation, economic, and social outcomes varies considerably, depending on design, enforcement, and other factors. The flexibility of catch shares means they can—and should be—designed to meet the specific economic, social, and conservation goals of a fishery so that the program will promote the many public benefits healthy fisheries can provide. As noted below in the Draft National Policy on Catch Shares, these alternative management systems are not a one-size-fits-all solution in fisheries management.

Definitions of Catch Shares

The National Oceanic and Atmospheric Administration (NOAA) defines catch shares as:

“... a general term for several fishery management strategies that allocate a specific portion of the total allowable fishery catch to individuals, cooperatives, communities, or other entities. Each recipient of a catch share is directly accountable to stop fishing when its specific quota is reached” (NOAA 2009, p.i).

It is further stated that:

“The term includes specific programs defined in law such as "limited access privilege" (LAP) and "individual fishing quota" (IFQ) programs, and other exclusive allocative measures such as Territorial Use Rights Fisheries (TURFs) that grant an exclusive privilege to fish in a geographically designated fishing ground” (NOAA 2009, p.i).

A limited access privilege (LAP) program is a term used in the reauthorized Magnuson-Stevens Fishery Management and Conservation Act (MSA, Public Law 109-479) for a system whereby entities are granted the privilege to harvest a specific portion of the total allowable catch (TAC). The term includes both individuals and groups or communities that may qualify to receive an allocation or an allotment of the commercial quota or TAC.

Different Type of Catch Shares:

1. Individual catch shares allocate shares to individual entities, such as fishermen or vessels. Common forms of individual catch shares are Individual Quotas, Individual Transferable Quotas, Individual Fishing Quotas, Individual Vessel Quotas, and Enterprise Allocations. Often individual catch shares are transferable among participants.
2. Group based catch shares allocate shares to clearly defined sets of people to manage together. These are commonly called cooperatives, sectors or community-based approaches. Other group-based approaches to managing fisheries are also beginning to emerge, including permit banks and community fishing associations. Under certain applications these would also be considered catch shares. The New England Fishery Management Council adopted Amendment 16 to the groundfish management plan, which establishes a group based catch share system that allocates shares of total allowable catch to sectors.

3. Area-based catch shares, often called Territorial Use Rights for Fishing (TURFs), specify and assign an area to an individual, group or community. Area-based catch shares may also have a catch limit.

A Draft National Catch Share Policy

(The following information was obtained from NOAA. 2009. Draft NOAA Catch Share Policy. Department of Commerce. (For excerpts from NOAA's Draft National Catch Share Policy, please see APPENDIX.)

http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/docs/draft_noaa_cs_policy.pdf

In 2009, NOAA issued a draft catch share policy. The draft policy states:

“Given the challenges facing U.S. fishery managers, the best available science and practical experience support the conclusion that it is in the public interest to encourage and support the evaluation of catch share programs authorized under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). In addition, Congress, in its 2006 amendments to the MSA, and national experts have recognized catch shares are a tool that should be available for use in any fishery, subject to general guidelines for their design” (p.i).

The draft policy further states:

“Catch share programs have been used in the U.S. since 1990 and now include 13 different fisheries from Alaska to Florida managed by six different Councils. Four additional U.S. fisheries are in the process of adopting a catch share program over the next year. Both here and in other countries catch shares have shown they can effectively achieve annual catch limits, reduce the negative biological and economic impacts of the race for fish, and when properly designed can eliminate overfishing and result in safer and more profitable fisheries while also addressing other social objectives. This draft policy provides a foundation for facilitating the wide-spread consideration of catch share fishery management plans while empowering local fishermen to be part of the process” (p.ii). “Catch shares may not be the best management option for every fishery or sector. NOAA will not require the use of catch shares in any particular fishery or sector, but it will promote and encourage the careful consideration of catch shares as

a means to achieve the conservation, social and economic goals of sustainable fishery management” (p.ii).

Moving Towards Catch Shares in New England

The transition to sectors in the groundfish fishery has come at a time of very low catch limits for a few of the highly targeted stocks due to decades of ineffective management, tremendous distrust and polarization between NMFS and the fishing industry, and new MSA requirements of establishing ACLs and AMs.

NOAA Fisheries Service strongly supports the transition of the groundfish fishery to sector management. To assist with the transition, NOAA has dedicated \$47.2 million to the groundfish fishery and the transition to sectors. This funding includes support for sector startup costs, NEPA document development, dockside monitoring, at-sea monitoring and observers, training workshops, and outreach. This funding also includes \$13 million for collaborative research. Five million dollars will go directly to the commonwealth of Massachusetts and the states of New Hampshire, Rhode Island and Maine to set up permit banks. A permit bank is a collection of fishing permits purchased and held by an organization to provide access rights for qualifying fishing vessels. These permit banks are expected to provide owners of fishing vessels with limited or no groundfish history an opportunity to lease additional fishing days or allocation at reasonable costs. This will make it much more economically viable for small fishing vessels and local communities to remain a vital part of New England fisheries.

<http://www.nero.noaa.gov/sfd/sectordocs/SpendingToDate21910.pdf>;

http://www.noanews.noaa.gov/stories2010/20100301_support.html)

The New England Fisheries Management Council has concluded that the current system of managing effort regulations has not rebuilt groundfish stocks to levels mandated under the M-S Act. Effort control systems tend to artificially raise the cost of fishing, likely leading to less profitability for fishermen, higher prices for consumers, and increased environmental degradation since fishermen are discarding overages and bycatch, and also operating boats for longer periods than necessary to catch the same amount of fish with different gear. Since fishermen must catch as much as possible during their allotted time, the Days-at-Sea system also

encourages less safe work conditions and an atmosphere that directly contradicts ocean stewardship because it forces wasteful regulatory discards.

Many fishermen complain that regulations are so complicated and change so frequently that it is nearly impossible to tell if they are breaking the law and equally as difficult to make informed business decisions for the future.

In order to meet fish stock rebuilding deadlines under the MSA and the new MSA requirements to establish annual catch limits (ACLs) and accountability measures (AMs), the New England Fisheries Management Council (NEFMC), after considering various options, approved sector management in Amendment 16 to the Northeast Multispecies Fishery Management Plan (FMP). While not defined in the MSA, NOAA (2009, p.20) defines sectors as:

“An exclusive assignment of some portion of the TAC to a group of three or more individuals holding permits in a fishery that have fulfilled Council eligibility and participation criteria, and have agreed to collaborate, voluntarily and for a specified period of time, in order to achieve a common set of objectives. The group may be organized around a particular gear type, species or geographic area with its purpose being the receipt of an exclusive privilege to fish.”

Each Sector agrees not to exceed their combined allocation in any species, but is internally responsible for dividing up the catch among its members. The sectors have been required to develop operations plans and self-administer their catch share, and began operation in May 2010.

(The following information was obtained from NOAA Fisheries Service Fact Sheet http://www.nero.noaa.gov/nero/hotnews/mulamend16pr/Am16%20Proposed%20RuleSummary12_17_09.pdf)

The Northeast Multispecies (groundfish) Fishery Management Plan (FMP) specifies management measures for thirteen groundfish species off the New England and Mid-Atlantic coasts. The most recent amendment to the FMP is Amendment 16, which the NEFMC approved in June 2009. Amendment 16 implements a broad range of measures designed to achieve mortality targets, provide opportunities to target healthy stocks, mitigate (to the extent possible) the economic impacts of the measures, and improve administration of the fishery. Amendment

16 includes measures to adjust the level of fishing mortality to avoid overfishing, continue rebuilding of overfished stocks and establish ACLs and AMs for the fishery. The reauthorization of MSA includes a firm deadline to end overfishing in the U.S. by 2011. For stocks that are currently experiencing overfishing, which includes 14 of the 20 groundfish stocks, the deadline is 2010. In order to achieve this, the reauthorization requires the use of ACLs to prevent overfishing. Every management plan must contain an ACL for all stocks, which is set at a level to ensure that overfishing does not occur in the particular fishery. The reauthorization also requires every management plan to establish AMs that detail what actions will be taken if overfishing does occur.

ALCs (known elsewhere as TAC) are an important shift in management in and of themselves, separate from the move to catch shares and sectors. Macinko and Whitmore argue that “the success of catch share programs lies simply in the fact that a TAC has been established (and credibly enforced) and then each vessel fishing pursues a subsequently assigned share of the TAC” (Macinko and Whitmore, 29).

Amendment 16 establishes 17 new sectors and modifications to the two existing sectors. A sector is defined as a group of vessel permit holders who voluntarily agree to fishing restrictions and procedures in exchange for a share of the total catch allocated to the industry. Under Amendment 16, a sector is required to be composed of at least 3 persons, none of whom have an ownership interest in the other’s businesses in the sector. Sectors receive allocations for most groundfish stocks based on participating vessel landing histories (1996-2006). For vessels that previously signed up to participate in either of the existing two sectors, their contributions towards a sector’s allocation of GB cod would be based on their historic landings (1996-2001). Sectors have the ability to trade stock allocations with other sectors. All sectors are exempt from the following regulations: Georges Banks May seasonal closed area; trip limits; groundfish Days at Sea (DAS) restrictions; portions of Gulf of Maine (GOM) Rolling Closure Areas; and some mesh requirements when using selective gear on GB. Sectors may request exemptions from other restrictions on a case-by-case basis.

In March 2010, the General Category (Day Boat) Scallop fishery implements an IFQ program via Amendment 11 to the scallop FMP. Before the catch share, this was an open access fishery. Day boat scallopers had been fishing quarterly hard TACs, which created fishery-wide derbies, along with DAS and daily possession limits. With the IFQ, individual fishermen receive their own share of the catch, which they can fish year-round. The 400-pound daily possession limit was kept in the design of the catch share in order to preserve the day boat identity of this fishery.

In September 2010, the NEFMC (in coordination with the MAFMC) is scheduled to start a catch share amendment for the New England and Mid-Atlantic monkfish fishery. This presents an opportunity to apply lessons learned from the groundfish sector and scallop IFQ process to make the monkfish catch share design and selection process as fair and effective as possible.

Methods

An open-ended questionnaire was prepared and pre-tested (Annex 1). The questionnaire had 10 questions (and an additional 10 background questions). Fishermen (owner/captain, owner, captain, crew) and other fishery stakeholders (processors) were interviewed in person and by telephone (in Maine) during the period of October 2009 to February 2010. Interviews were conducted in five states – Maine, New Hampshire, Massachusetts, Rhode Island and Connecticut. The total sample size was 172. Interviews were conducted in 35 ports (Maine (18), New Hampshire (3), Massachusetts (9), Rhode Island (3) and Connecticut (2)). The specific breakdown of interviews conducted in each port is presented in Table 1.

Table 1. Interviews conducted by port/location

| Code | Port/location | Interviews |
|-------------|-----------------------------|-------------------|
| PJ | Point Judith, RI | 35 |
| NPT | Newport, RI | 3 |
| SKP | Sakonnet Point, RI | 1 |
| NB | New Bedford, MA | 6 |
| PLY | Plymouth, MA | 4 |
| GLOU | Gloucester, MA | 19 |
| MTK | Montauk, NY | 1 |
| PVT | Provincetown, MA | 6 |
| CHT | Chatham, MA | 2 |
| MFLD | Marshfield, MA | 4 |
| BOS | Boston, MA | 12 |
| NL | New London, CT | 2 |
| STO | Stonington, CT | 10 |
| SCI | Scituate, MA | 5 |
| RYE | Rye, NH | 5 |
| SEA | Seabrook, NH | 6 |
| CUT | Cutler, ME | 2 |
| BEL | Belfast, ME | 1 |
| PORT | Portland, ME | 11 |
| SPHD | Spruce Head, ME | 1 |
| STON | Stonington, ME | 5 |
| SEB | Sebasco, ME | 1 |
| WISC | Wiscasset, ME | 1 |
| GOUL | Gouldsboro, ME | 1 |
| YORK | York, ME | 2 |
| CHBR | Cundy's Harbor, ME | 4 |
| SPOR | S. Portland, ME | 1 |
| LGIS | Long Island (Casco Bay), ME | 1 |
| BBHR | Boothbay Harbor, ME | 1 |

| | | |
|-------|-----------------------------|---|
| EAST | Eastport, ME | 3 |
| STHO | S. Thomaston, ME | 1 |
| BRHR | Bar Harbor, ME | 1 |
| BUHR | Bucks Harbor, ME | 1 |
| WELL | Wells, ME | 1 |
| FHV | Fairhaven, MA | 4 |
| PORTS | Portsmouth, NH | 3 |
| PTCL | Port Clive, ME | 3 |
| FAL | Falmouth, ME | 1 |
| NH | New Hampshire (unspecified) | 1 |

Table 2. Interviews conducted by state

| State | Interviews |
|---------------|------------|
| Maine | 43 |
| New Hampshire | 15 |
| Massachusetts | 62 |
| Rhode Island | 39 |
| Connecticut | 12 |
| New York | 1 |

In conducting the analysis of the data, it was found that there were a large number of distinct responses to questions 4 (advantages (71 responses)), 5 (concerns/disadvantages (158 responses)) and 6 (ways to address concerns/disadvantages (117 responses)). The detailed raw responses to each question are presented in Annexes 3, 4 and 5. In order to facilitate the analysis, the individual responses to each question were grouped into similar types of response.

For the advantages, there were nine groups:

- **Allocation** - These comments refer to increased stability and consistency associated with output regulations like allowable catch limits and catch shares compared with input regulations. This grouping also includes responses from stakeholders who felt that the allocations were fair.
- **Social/Community** - These advantages refer to the social gains created by catch share management; namely, preserving fishing communities, requiring less time at sea, a more congenial relationship with the Coast Guard, and incentives for fishermen to work together.
- **Ecological** - These refer to reductions in the environmental impacts of fishing, including less discards, more efficient fishing trips, a dispersion of fishing fleets, and other general advantages associated with the end of derby-style fishing.
- **Increased Ability for Decision Making and Flexibility** - This grouping covers the opinions that catch shares will allow for better business decisions and an increased flexibility on how and when to fish.
- **Increased Safety** - This grouping broadly covers the opinions that catch shares will lead to safer working conditions for fishermen.
- **Economic and Profitability Advantages** - This grouping includes opinions expressing the economic advantages to catch shares, such as better control of market prices, less fuel consumption, and higher returns on investments.
- **Regulatory improvements** – These advantages include easier and more concise regulatory practices with catch shares, eliminating per trip limits, opening closed areas, and a belief that catch shares will lead to more accurate surveys and fish numbers.**Other advantage** – This grouping includes a range of comments that indicated ambivalence about whether catch shares have advantages. **No advantage** – This grouping includes respondents comment that there were no advantages to catch share. .
- For the concerns/disadvantages, there were 10 groups: **Allocation concern/disadvantage** – This grouping focused mainly on low catch limits and the allocation formula. **Inequity concern/disadvantage** – This grouping includes opinions that catch shares will unequally affect profitability across gear type, size, location, and position.**Implementation/information concern/disadvantage** – This grouping includes the opinions that fishermen have not received enough information and the information they have received is difficult to decipher; as well as a general disapproval about the process of how catch share management has been implemented thus far. The lack of regulatory stability and contradicting information makes it very difficult for fishermen to make decisions.**Social concern/disadvantage** – This grouping ranged in scope, but were generally focused on (a) a decline of the “fishermen” mentality—defined rather loosely

as a cowboy atmosphere in which greater risk and extreme effort create greater rewards;

(b) comments addressing the adverse effects catch shares can have on coastal communities if they are not designed properly, namely that consolidation can adversely impact fishermen, shipyards, and local business; and (c) concerns about the increasing difficulty for new guys and younger generations to enter the business, which in some cases may end a long family tradition. **Economic concern/disadvantage** – This grouping includes concerns about economic impacts of catch shares and the belief that they will hurt the profitability of fishermen and buyers. Many of these concerns revolve around fees, fines, and regulatory constraints. This group also contains responses from fishermen who are worried that more rigorous domestic regulations will simply lead to more imported fish, driving the local fishermen out of business.**Ecological concern/disadvantage** – This grouping includes issues such as increased pressure on underutilized or less regulated fish; favoritism toward large boats; and other unintended ecological effects. **Bycatch concern/disadvantage** – Bycatch concerns typically address the fear that fishermen are going to be held accountable for every fish caught, since all discards count against a fisherman’s catch share. Since different species of fish swim together, hitting one quota may put someone out of operation for the year. For instance, once a fisherman hits his or her cod quota, he or she will be unable to catch their quota of haddock because it is difficult to catch one without the other. In this system, some fishermen are concerned that having a single low quota in a given species may severely affect the profitability of many fishermen if they are not able to find ways to fish more selectively or acquire additional quota.**Design concern/disadvantage** - This grouping includes opinions associated with the current structure of catch share management, most of which concern the incompatibility of species specific quotas with New England groundfish. Another concern was the belief that the end of 2:1 Days at Sea counting will lead to overfishing in near shore waters.**NOAA/Fishermen gap** – This grouping refers to the disparity in beliefs and practices that exists between NOAA and active fishermen. This category also covers the general aversion to being regulated by NOAA and other government agencies, identifying reasons such as lack of accountability, excessive inefficiencies, and perverse incentives. Comments that reflect the adversarial relationship of fishermen and NOAA and between fishermen and EDF/ Pew are grouped into this

category. **Other concern/disadvantage** - This grouping includes a range of other disadvantages that were different from the above groupings, including general opinions that catch shares won't work.

For ways to address concerns/disadvantages, there were 19 groups (some examples of responses are presented in parentheses):

- Replace management system (go to ITQs, point system, rebuilding provisions of the MSFCA are flawed)
- Slightly modify sectors [examples?]
- Share information (better communication between managers and fishermen, better education on catch shares, better information on closed areas)
- Obtain new information (better science, concerns of crew need to be considered, more collaborative research)
- Implementation process (allow time for new regulations to be implemented, implement as pilot program, Hook sector not good example as only two species, have coordinated plans not “piecemeal” plans)
- Monitor system (new monitoring strategy)
- Fix by-catch issues
- Change allocations (allow sector members to choose years used as baseline, craft management that can account for shifts in stock biomass, allocations to historic ports and fishermen, allocate shares by areas fished not species or history, raise quota)
- Regulate markets (laws to protect fish prices)
- Increase industry influence (talk to fishermen for ideas, work with fishermen associations)
- Introduce subsidies or incentives (help small boats)
- Introduce systems for permit buying/selling (will reduce overfishing)
- Introduce system for quota buying/selling (allow quota trading)
- Gear modifications (use larger mesh size)
- Keep days-at-sea
- More government accountability

- Revisit policy (better consistency of regulations)
- Do not introduce subsidies
- Permit bank (respondents differed on whether or not to allow trading)

Characteristics of Respondents

The mean age of the 172 respondents was 47.5 years old. Respondent ages ranged from 17 to 81, the largest concentration of which were in their forties. Of these fishermen, 88 were owner-captains, 9 were owners, 10 were captains, 58 were crew, and 7 were involved in the industry in another capacity (processors, buyers, Harbor Masters, etc.). The most common fishing gears used by respondents were otter trawls (55%), lobster traps (19%) and gillnets (12%).

Advantages

Advantages of Catch Shares by State

The respondents were asked the question: “Based on your knowledge about catch shares (or based on what you learned from what I just explained), could you tell me five advantages or good things about catch shares?” Table 3 presents the advantages of catch shares identified by state.

| (%) | | | | | | |
|---------------------------------|--------------|----|----|----|----|-------|
| Type of advantage | State | | | | | |
| | RI | MA | CT | NH | ME | Total |
| Allocation | 20 | 13 | 33 | 0 | 5 | 13 |
| Environmental and Ecological | 10 | 11 | 33 | 0 | 5 | 10 |
| Flexibility and Decision Making | 25 | 17 | 8 | 0 | 14 | 16 |
| Increased Safety | | | | | | 9 |
| Economic and Profitability | | | | | | 13 |

| | | | | | | |
|--|--|--|--|--|--|----|
| Regulatory Improvements | | | | | | 8 |
| Other | | | | | | 2 |
| No advantage | | | | | | 25 |
| *Column percent totals do not sum to 100 because respondents can give multiple responses | | | | | | |

The respondents identified Increased Flexibility and Decision Making (16.3%) as having the highest advantage of catch share management. Social and Community, Economic and Profitability, and Allocation also ranked relatively high as identified advantages. Additionally, 25 percent of all respondents answered that there were No Advantage to catch share management - the largest number of these responses came from New Hampshire and Massachusetts, 64 percent and 32 percent, respectively.

There was a difference in identified advantages to catch shares by state. In Connecticut, Social and Community, Allocation, and Environmental and Ecological advantages were the most commonly identified advantages. In Rhode Island and Massachusetts, the most commonly identified advantages were Allocation, Social and Community, Economic, Flexibility and Decision Making. Respondents in Maine identified Regulatory improvements and Flexibility and Decision Making benefits as the most acknowledged advantages to catch share management. The New Hampshire respondents only identified Social and Community as an advantage.

These differences between states suggest an asymmetry of knowledge being disseminated to the fishing community, and identify areas where additional education on catch share management may be needed.

Advantages of Catch Shares by Position

Table 4 presents the advantages about catch shares identified by position (captain/owner, owner, captain, crew, other).

| Type of advantage | Position | | | | | |
|---------------------------------|---------------|-------|---------|------|-------|-------|
| | Captain/Owner | Owner | Captain | Crew | Other | Total |
| Allocation | 15 | 0 | 0 | 16 | 0 | 13 |
| Social and Community | 10 | 0 | 30 | 22 | 29 | 16 |
| Environmental and Ecological | 9 | 11 | 10 | 9 | 29 | 10 |
| Flexibility and Decision Making | 23 | 0 | 30 | 9 | 0 | 16 |
| Increased Safety | 8 | 0 | 20 | 10 | 0 | 9 |
| Economic and Profitability | 16 | 0 | 20 | 10 | 14 | 13 |
| Regulatory Improvements | 11 | 11 | 0 | 3 | 14 | 8 |
| Other | 1 | 11 | 10 | 2 | 0 | 2 |
| No advantage | 22 | 22 | 10 | 31 | 43 | 25 |

*Column percent totals do not sum to 100 because respondents can give no or multiple responses

Of those respondents identifying advantages of catch shares, captain/owners identified Flexibility and Decision Making and No Advantage almost equally. Owners identified Environmental and Regulatory advantages, but many identified No Advantage. Captains identified Social and Community and Flexibility and Decision Making. Crew members identified No Advantages and Social and Community advantages the most. Others (processors) identified No Advantage, followed by Social and Community and Environmental and Ecological advantages.

Table 5 presents the identified advantages about catch shares by gear type.

| Type of advantage | Gear Type | | | | | | | | | |
|-------------------|-----------|---------|----------|------|---------|--------|------------|--------|---------|-------|
| | Dragger | Gillnet | Longline | Weir | Lobster | Dredge | Rod & Reel | Urchin | Charter | Total |

| | | | line | | | | (Chart er) | Divin g | Boat | |
|--|----|----|------|-----|----|----|---------------|------------|------|----|
| Allocation | 11 | 5 | 0 | 0 | 13 | 35 | 100 | 0 | 0 | 13 |
| Social and Community | 14 | 20 | 0 | 100 | 13 | 18 | 0 | 0 | 0 | 16 |
| Environe ntal and Ecological | 9 | 5 | 0 | 100 | 6 | 18 | 0 | 0 | 0 | 9 |
| Flexibility and Decision Making | 15 | 30 | 50 | 0 | 16 | 6 | 0 | 100 | 0 | 17 |
| Increased Safety | 9 | 10 | 0 | 0 | 13 | 6 | 0 | 0 | 0 | 9 |
| Economic and Profitability | 14 | 25 | 50 | 0 | 9 | 6 | 0 | 0 | 0 | 14 |
| Regulatory Improveme nts | 9 | 10 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 8 |
| Other | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 2 |
| No advantage | 26 | 40 | 50 | 0 | 16 | 12 | 0 | 0 | 0 | 24 |
| *Column percent totals do not sum to 100 because respondents can give multiple responses | | | | | | | | | | |

Table 6 presents the identified advantages about catch shares by fishery.

| Table 6. Identified advantages about catch shares by fishery and advantage type (%) | | | |
|--|---------|-------|---------|
| Type of advantage | Species | | |
| | Monkfi | Fluke | Groundf |
| | | | |

| | sh | | ish |
|--|----|----|-----|
| Allocation | 6 | 15 | 12 |
| Social and Community | 24 | 20 | 7 |
| Environmental and Ecological | 6 | 5 | 7 |
| Flexibility and Decision Making | 18 | 20 | 19 |
| Increased Safety | 12 | 10 | 6 |
| Economic and Profitability | 29 | 20 | 11 |
| Regulatory Improvements | 18 | 5 | 9 |
| Other | 0 | 5 | 2 |
| No advantage | 29 | 15 | 31 |
| *Column percent totals do not sum to 100 because respondents can give multiple responses | | | |

Fishing industry members involved in the monkfish fishery cited Economic and Profitability advantages and No Advantage the most, followed by Regulatory Improvements and Flexibility and Decision Making advantages. Industry members in the fluke fishery cited Social and Community, Flexibility and Decision Making, and Economic Profitability advantages the most. The groundfish industry members interviewed mentioned No Advantage the most, followed by Flexibility and Decision Making advantages.

To summarize, the most frequently mentioned categories are 1) Social and Community—these advantages refer to the social gains created by catch share management; namely, preserving sea communities, requiring less time at sea, a more congenial relationship with the Coast Guard, and an increased necessity for fishermen to work together. A fisherman noted that catch shares force fishermen to work together, to join forces and act as a cohesive unit. Catch shares have mobilized this fishing fleet for the first time in long time. 2) Increased Ability for Decision Making and Flexibility—this grouping covers the opinions that quotas will allow for better business decisions and an increased flexibility on when to fish. A monkfish fisherman commented that, “under days at sea fishermen are going out and hauling fish but motoring around for another 12 hours so that they can use up the day [as required by current regulations].” Another fisherman stated, under catch shares you would spend less time at sea and be safer.” 3)

Allocation advantage—these address the consistency and stability of output regulations versus input regulations. Also grouped in this category are opinions that allocations are given fairly to the active fishermen who deserve them. As one fisherman said, “We are getting a good allocation so that is good.” 4) Economic and Profitability Advantages—this grouping includes opinions expressing the economic advantages to catch shares, these perceived advantages are better control of market prices, less fuel consumption, higher returns on investments. As a fisherman noted, “you can catch fish at your discretion, go when you know the fish will be around, when you can get a decent price and when the weather doesn’t suck.”

Concerns/Disadvantages

Concerns/Disadvantages of Catch Shares by State

The respondents were asked the question: “In your opinion, could you tell me five disadvantages or bad things about catch shares?” Table 7 presents the concerns/disadvantages about catch shares identified by state.

| Table 7. Identified disadvantages about catch shares by state and disadvantage type (%) | | | | | | |
|--|--------------|----|----|----|----|-------|
| Type of disadvantage | State | | | | | |
| | RI | MA | CT | NH | ME | Total |
| Allocation | 25 | 41 | 17 | 14 | 33 | 31 |
| Inequity of Effects | 68 | 47 | 17 | 79 | 65 | 57 |
| Implementation and Information | 23 | 35 | 25 | 50 | 16 | 28 |
| Social and Community | 30 | 46 | 25 | 50 | 23 | 36 |
| Economic and Profitability | 13 | 46 | 33 | 43 | 21 | 31 |
| Ecological | 8 | 5 | 0 | 0 | 21 | 9 |
| By-Catch | 10 | 11 | 8 | 0 | 7 | 9 |
| Design | 45 | 48 | 17 | 50 | 23 | 39 |
| NOAA-Fishermen Gap | 28 | 38 | 83 | 36 | 28 | 34 |
| Other | 3 | 3 | 0 | 0 | 2 | 2 |
| *Column percent totals do not sum to 100 because respondents can give no or multiple responses | | | | | | |

The most prevalent concerns/disadvantages mentioned by respondents were grouped in the Inequity of Effects, Design Flaws, and Social and Community groups. Additionally, roughly one third of respondents also identified concerns in the Allocation, NOAA-Fishermen Gap, Economic and Profitability, and Implementation and Informational groups. It should be noted that many of the concerns raised were not related to catch shares, but other management concerns due to ineffective management, the decision making process, industry’s lack of confidence in the stock assessments, and the huge gap of distrust that exists between NOAA and the industry.

Similar to advantages, the results show variations in acknowledged concerns/disadvantages between states. Every state but Connecticut identified Inequality of Effects as a chief concern, with nearly 57 percent of total respondents mentioning this concern/disadvantage. Other differences are evident. Respondents in Rhode Island more frequently identified Design and Social and Community disadvantages. Between 40 and 50 percent of Massachusetts respondents mentioned at least one concern/disadvantage in the following categories: Allocation, Inequity of Effects, Social and Community, Economic and Profitability, and Design. Eighty-three percent of Connecticut’s respondents mentioned the NOAA-Fishermen Gap, suggesting a very prevalent sociopolitical view in that state. Fifty percent of New Hampshire respondents identified Implementation and Information, Social and Community, and Design disadvantages. New Hampshire respondents mentioned Inequity of Effects (79%) as a concern/disadvantage. This high percentage may be attributed to certain characteristics unique to the state [brief description of these characteristics would help].

Concerns/Disadvantages of Catch Shares by Position

Table 8 presents the concerns/disadvantages about catch shares identified by position.

| Table 8. Identified disadvantages about catch shares by position and disadvantage type | | | | | | |
|---|----------------------|--------------|----------------|-------------|--------------|--------------|
| (%) | | | | | | |
| Type of disadvantage | Position | | | | | |
| | Captain/Owner | Owner | Captain | Crew | Other | Total |
| | er | | n | | | |

| | | | | | | |
|--|----|----|----|----|-----|----|
| Allocation | 39 | 56 | 20 | 19 | 29 | 31 |
| Inequity of Effects | 68 | 33 | 50 | 45 | 57 | 57 |
| Implementation and Information | 28 | 44 | 10 | 28 | 29 | 28 |
| Social and Community | 39 | 44 | 10 | 29 | 71 | 35 |
| Economic and Profitability | 31 | 33 | 30 | 22 | 100 | 31 |
| Ecological | 13 | 11 | 0 | 5 | 0 | 9 |
| By-Catch | 13 | 0 | 0 | 7 | 0 | 9 |
| Design | 38 | 56 | 50 | 34 | 57 | 39 |
| NOAA-Fishermen Gap | 28 | 56 | 30 | 40 | 29 | 33 |
| Other | 0 | 11 | 0 | 5 | 0 | 2 |
| *Column percent totals do not sum to 100 because respondents can give no or multiple responses | | | | | | |

Captains/owners identified Inequity of Effects, Allocation, Social and Community and Design as concerns/disadvantages. Owners identified Allocation, Design, and NOAA-Fishermen gap as disadvantages. Captains identified Design, Economic and Profitability, and NOAA-Fishermen Gap as disadvantages. Crew members identified Inequity of Effects, NOAA-Fishermen Gap, and Design as concerns/disadvantages. Other stakeholders identified Economic and Profitability, Design, and Inequity of Effects as concerns/disadvantages.

Table 9 presents the identified concerns/disadvantages about catch shares by gear type.

| Type of advantage | Gear Type | | | | | | | | | |
|---------------------|-----------|---------|-----------|------|---------|--------|-----------------------|---------------|------------|-------|
| | Dragger | Gillnet | Long-line | Weir | Lobster | Dredge | Rod & Reel (Chart er) | Urchin Diving | Chart Boat | Total |
| Allocation | 36 | 25 | 50 | 0 | 41 | 0 | 0 | 0 | 0 | 31 |
| Inequity of Effects | 53 | 65 | 50 | 100 | 75 | 35 | 100 | 100 | 0 | 57 |

| | | | | | | | | | | |
|--|----|----|----|-----|----|----|-----|-----|-----|----|
| Implementat ion and Information | 30 | 30 | 50 | 0 | 16 | 35 | 0 | 0 | 100 | 28 |
| Social and Community | 30 | 55 | 50 | 0 | 31 | 35 | 100 | 0 | 0 | 34 |
| Economic and Profitability | 33 | 25 | 50 | 0 | 16 | 29 | 0 | 100 | 0 | 28 |
| Ecological | 10 | 10 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 9 |
| By-Catch | 10 | 15 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 9 |
| Design | 45 | 45 | 0 | 100 | 22 | 24 | 0 | 100 | 0 | 38 |
| NOAA- Fishermen Gap | 38 | 30 | 50 | 0 | 19 | 35 | 100 | 100 | 0 | 34 |
| Other | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Column percent totals do not sum to 100 because respondents can give multiple responses | | | | | | | | | | |

Table 10 presents the identified concerns/disadvantages about catch shares by fish species.

| Table 10. Identified disadvantages about catch shares by fish species and advantage type (%) | | | |
|---|----------------------|--------------|------------------------|
| Type of advantage | Species | | |
| | Monkfi sh | Fluke | Groundf ish |
| Allocation | 35 | 50 | 31 |
| Inequity of Effects | 65 | 60 | 57 |
| Implementation and Information | 41 | 15 | 31 |
| Social and Community | 53 | 45 | 34 |
| Economic and Profitability | 29 | 25 | 33 |

| | | | |
|--|----|----|----|
| Ecological | 12 | 5 | 9 |
| By-Catch | 6 | 15 | 10 |
| Design | 65 | 35 | 44 |
| NOAA-Fishermen Gap | 29 | 20 | 36 |
| Other | 35 | 50 | 31 |
| *Column percent totals do not sum to 100 because respondents can give multiple responses | | | |

Industry members from the monkfish fishery mentioned Inequity of Effects and Design disadvantages the most. Fluke industry members also mentioned Inequity of Effects the most, followed by Allocation disadvantages. Groundfish industry members mentioned Inequity of Effects disadvantages the most, then Design and NOAA-Fishermen Gap disadvantages.

In summary, perceived disadvantages of catch shares indicates the percent distribution of the categorized advantage types. The majority of respondents said in response to this question that there are no advantages to catch shares. Most frequently mentioned disadvantage categories are 1) Inequity of effects disadvantage—this grouping includes opinions that catch shares will unequally affect profitability across gear type, size, location, and position. One fisher noted that, "[it] doesn't capture the fishing effort of the boats that worked on other species when groundfish were depleted. NMFS asked us to stop working on groundfish, so we moved on to dogs [dogfish], and whiting. This system only rewards the guys who never stopped working on groundfish. Big boats are going to force the small boats out, and this fishery will be run by corporations. It is already tough to find a reliable crew, and with less to catch, guys won't be able to keep crews on. You need to make money." Another stated, "It will really hurt the smaller boats who didn't have strong landings during those years. I was forced to have a ground fish permit during that time because I was a scalloper. Now if I wanted to enter a sector, they would look at that and say I didn't have any landings during those years so I wouldn't get a good allocation because I was fishing for scallops. The government made me hold a groundfish permit to fish for scallops. Now that permit is worthless." Another suggested that, "Smaller

boats are going to get smaller shares and the ones stuck in the common pool are in trouble.... It [catch shares] will be good for a few big boats but will be tough to make a profit for many small boats." 2) Design disadvantage—this grouping includes opinions associated with the current structure of catch share management, most of which concern the incompatibility of species specific quotas with New England multispecies fishing. Another concern was the belief that the end of 2:1 Days at Sea will lead to over fishing near shore. One fisher said that, "Catch shares will hurt the crew them most. This boat has a small groundfish quota, and the owner is leasing it out to boats in New Bedford. Now the crew won't have those trips to Georges." Another noted that catch share management, "Doesn't account for fact that DAS and catch shares are apples and oranges: if you have no history, you have no allocation." Another noted, "Catch shares make is so you can't work your way into the fishery anymore. Young guys can't afford to buy an allocation." Finally, a fisherman in Maine stated, "It takes away from Maine's fishing culture, where you can work your way into the fishery." 3) Social and community disadvantage—this grouping ranged in scope, but were generally focused on (a) a decline of the "fishermen" mentality—defined rather loosely as a cowboy atmosphere in which greater risk and extreme effort create greater rewards; (b) comments addressing the adverse effects catch shares will have on coastal communities, namely



that consolidation will hurt, fishermen, shipyards, and local business. Some fishermen refer to this consolidation as the Wal-Mart effect, in that it will put many small scale operations out of business; (c) concerns about the increasing difficulty for new guys and younger generations to enter the business, which in some cases may end a long family tradition. A Provincetown fishermen stated: "To join a Sector, you are forced to enter into a binding contract with other fishermen that I do not know. As it stands, I'll be in business with boats from Maine and North Carolina." 4) NOAA/Fishermen gap—this grouping refers to the disparity in beliefs and practices that exists between NOAA and active fishermen. This category also covers the general aversion to being regulated by NOAA and other government agencies, identifying reasons such as lack of accountability, excessive inefficiencies, and perverse incentives. Comments that reflect the adversarial relationship of fishermen and NOAA/ EDF are grouped into this category.

As a fisherman noted, "Until the science is corrected you can't fix the regulations. NMFS doesn't have a good feel for what the stocks are really at because they don't know what they are doing when they go out there and do survey trawls. They trawl at night in areas when we all know there are never any fish in that area at night. They use the wrong equipment and figure when they don't catch anything, then there must not be any fish out there. This is most fish I have seen in 20 years now."

Suggested Ways to Address Concerns/Disadvantages of Catch Shares

Suggested Ways to Address Concerns/Disadvantages of Catch Shares by State

Survey respondents were asked the following question: "Can you suggest ways to address your concerns/disadvantages about catch shares?"

Overall, Allocation suggestions were the most common, with 27 percent of total respondents making recommendations that fell into the Change Allocation group. Another large percentage of total respondents, 19 percent, suggested keeping the current days at sea system. Eighteen percent responded there is a need to share more information and 15 percent responded that there is a need to obtain new information. There was a need for an improved system of sharing information—both within the industry and with regulators. A common sentiment among respondents was the inability to rationally make business choices due to a lack of clear regulatory information. Many respondents expressed the belief that the stock surveys of fish populations were highly inaccurate. Accordingly, many respondents suggested obtaining new, more accurate, information when making regulatory decisions. Seventeen percent responded that the management system (sector management) should be replaced.

Table 11 presents the suggested ways to address concerns/disadvantages of catch shares identified by state.

| Table 11. Identified suggested ways to address concerns/disadvantages of catch shares by state and suggested way (%) | | | | | | |
|---|--------------|----|----|----|----|-------|
| Suggested way to address concern/ disadvantage | State | | | | | |
| | RI | MA | CT | NH | ME | Total |
| Replace Management System | 23 | 13 | 50 | 21 | 9 | 17 |

| | | | | | | |
|--|----|----|----|----|---|----|
| Slightly Modify Sectors | 10 | 22 | 17 | 14 | 2 | 13 |
| Share Information | 28 | 16 | 25 | 36 | 5 | 18 |
| Obtain New Information | 15 | 22 | 8 | 14 | 7 | 15 |
| Implementation Process | 8 | 13 | 8 | 14 | 2 | 9 |
| Monitor System | 0 | 3 | 17 | 0 | 2 | 3 |
| Fix ByCatch Issues | 8 | 11 | 25 | 0 | 0 | 8 |
| Change Allocations | 35 | 38 | 33 | 14 | 7 | 27 |
| Regulate Markets | | | | | | 10 |
| Increase Industry Influence | | | | | | 2 |
| Introduce Subsidies or Incentives | | | | | | 6 |
| Introduce Systems for Permit Buying/Selling | | | | | | 5 |
| Introduce Systems for Quota Buying/Sharing | | | | | | 1 |
| Gear Modifications | | | | | | 2 |
| Keep Days at Sea | | | | | | 19 |
| More Government Accountability | | | | | | 1 |
| Revisit Policy | | | | | | 3 |
| Do not Introduce Subsidies | | | | | | 1 |
| Permit Banks | | | | | | 1. |
| | | | | | | 16 |
| | | | | | | 3 |
| *Column percent totals do not sum to 100 because respondents can give no or multiple responses | | | | | | |

There were differences in response by state. In Rhode Island, the top two suggestions were change allocations and share information. In Massachusetts, the top two suggestions were change allocations and keep days-at-sea. In Connecticut, it was replace management system, and change allocations and regulate markets had equal percentage of responses. In New Hampshire, it was to keep days at sea and share information. In Maine, the top two suggestions were introduce systems of permit buying/selling and replace management system.

Suggested Ways to Address Concerns/Disadvantages of Catch Shares by Position

Table 12 presents the suggested ways to address concerns/disadvantages of catch shares identified by position

| Table 12. Identified suggested ways to address concerns/disadvantages of catch shares by position and suggested way (%) | | | | | | |
|--|----------------------|--------------|----------------|-------------|--------------|--------------|
| Suggested way to address concern/ disadvantage | Position | | | | | |
| | Owner/Captain | Owner | Captain | Crew | Other | Total |
| Replace Management System | 13 | 11 | 20 | 24 | 29 | 17 |
| Slightly Modify Sectors | 11 | 22 | 10 | 14 | 29 | 13 |
| Share Information | 19 | 22 | 10 | 16 | 29 | 18 |
| Obtain New Information | 17 | 33 | 30 | 9 | 0 | 15 |
| Implementation Process | 9 | 11 | 10 | 7 | 14 | 9 |
| Monitor System | 5 | 0 | 0 | 2 | 0 | 3 |
| Fix ByCatch Issues | 5 | 0 | 0 | 16 | 0 | 8 |
| Change Allocations | 34 | 33 | 30 | 17 | 14 | 27 |
| Regulate Markets | 7 | 33 | 20 | 10 | 0 | 10 |
| Increase Industry Influence | 2 | 0 | 0 | 2 | 14 | 2 |
| Introduce Subsidies or Incentives | 8 | 22 | 0 | 2 | 0 | 6 |
| Introduce Systems for Permit Buying/Selling | 9 | 0 | 0 | 0 | 14 | 5 |
| Introduce Systems for Quota Buying/Sharing | 2 | 0 | 0 | 0 | 0 | 1 |

| | | | | | | |
|--|----|----|----|----|----|----|
| Gear Modifications | 2 | 0 | 0 | 0 | 0 | 2 |
| Keep Days at Sea | 13 | 11 | 50 | 26 | 14 | 19 |
| More Government Accountability | 2 | 0 | 0 | 0 | 0 | 1 |
| Revisit Policy | 7 | 0 | 0 | 0 | 0 | 3 |
| Do not Introduce Subsidies | 1 | 0 | 0 | 0 | 0 | 1 |
| Permit Banks | 2 | 0 | 0 | 0 | 0 | 1 |
| *Column percent totals do not sum to 100 because respondents can give no or multiple responses | | | | | | |

Owners/captains identified several potential solutions including change allocations, share information and obtain new information. Owners identified change allocations, obtain new information, and regulate markets equally. Captains identified keep days-at-sea and obtain new information. Crew members identified keep days-at-sea and replace management system. Others identified replace management system, share information, and slightly modify sectors equally.

Table 13 presents the identified suggested ways to address concerns/disadvantages of catch shares by gear type.

| Table 13. Identified suggested ways to address concerns/disadvantages of catch shares by gear type and suggested way (%) | | | | | | | | | |
|---|----------------|----------------|------------------|-------------|----------------|---------------|---------------------------------|----------------------|---------------------|
| Suggested way to address concern/disadvantage | Gear | | | | | | | | |
| | Dragger | Gillnet | Long-line | Weir | Lobster | Dredge | Rod & Reel (Charter) | Urchin Diving | Charter Boat |
| Replace Management System | 19 | 15 | 0 | 0 | 19 | 12 | 0 | 0 | 0 |
| Slightly Modify Sectors | 13 | 5 | 50 | 0 | 6 | 29 | 0 | 0 | 0 |
| Share Information | 22 | 15 | 0 | 0 | 16 | 6 | 0 | 0 | 0 |

| | | | | | | | | | |
|---|----|----|---|-----|----|----|-----|-----|---|
| Obtain New Information | 20 | 10 | 0 | 0 | 13 | 6 | 0 | 100 | 0 |
| Implementation Process | 12 | 10 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Monitor System | 4 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Fix ByCatch Issues | 12 | 0 | 0 | 0 | 3 | 6 | 0 | 0 | 0 |
| Change Allocations | 31 | 30 | 0 | 100 | 22 | 24 | 0 | 0 | 0 |
| Regulate Markets | 18 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| Increase Industry Influence | 2 | 0 | 0 | 0 | 3 | 6 | 0 | 0 | 0 |
| Introduce Subsidies or Incentives | 8 | 5 | 0 | 0 | 0 | 6 | 100 | 0 | 0 |
| Introduce Systems for Permit Buying/Selling | 0 | 0 | 0 | 0 | 22 | 6 | 0 | 100 | 0 |
| Introduce Systems for Quota Buying/Sharing | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Gear Modifications | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Keep Days at Sea | 27 | 20 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |

| | | | | | | | | | |
|--------------------------------|---|---|---|---|---|---|---|---|---|
| More Government Accountability | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Revisit Policy | 4 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Do not Introduce Subsidies | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| Permit Banks | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*Column percent totals do not sum to 100 because respondents can give no or multiple responses

Table 14 presents the identified suggested ways to address concerns/disadvantages of catch shares by fishery.

| Table 14. Identified suggested ways to address concerns/disadvantages of catch shares by fishery and suggested way (%) | | | |
|---|-----------------|--------------|-------------------|
| Type of advantage | Species | | |
| | Monkfish | Fluke | Groundfish |
| Replace Management System | 24 | 10 | 15 |
| Slightly Modify Sectors | 12 | 15 | 14 |
| Share Information | 18 | 20 | 20 |
| Obtain New Information | 18 | 20 | 19 |
| Implementation Process | 12 | 10 | 10 |
| Monitor System | 0 | 5 | 3 |
| Fix ByCatch Issues | 6 | 5 | 6 |
| Change Allocations | 35 | 55 | 26 |
| Regulate Markets | 0 | 5 | 12 |
| Increase Industry | 0 | 5 | 0 |

| | | | |
|--|----|----|----|
| Influence | | | |
| Introduce Subsidies or Incentives | 0 | 5 | 6 |
| Introduce Systems for Permit Buying/Selling | 0 | 0 | 1 |
| Introduce Systems for Quota Buying/Sharing | 0 | 0 | 2 |
| Gear Modifications | 0 | 5 | 3 |
| Keep Days at Sea | 24 | 25 | 28 |
| More Government Accountability | 0 | 5 | 2 |
| Revisit Policy | 6 | 10 | 4 |
| Do not Introduce Subsidies | 0 | 0 | 0 |
| Permit Banks | 6 | 0 | 2 |
| *Column percent totals do not sum to 100 because respondents can give multiple responses | | | |

The most common suggested ways to address the concerns/disadvantages from participants from all three fisheries were Change Allocations, Keep Days at Sea, Share Information, and Obtain New Information.

Concerns/Disadvantages and recommended ways to address concerns/disadvantages

To better understand the respondents recommended ways to address concerns/disadvantages, the tables below provide a clear link between each disadvantage grouping and recommended solutions. Many of the recommendations address multiple disadvantages, in order to prevent redundancy; we have grouped each recommendation under the disadvantage it most closely addresses.

To summarize the tables below, much of the opposition seems to be as a result of five major perceived concerns/disadvantages: The NOAA-Fishermen Gap, an Inequity of Effects, Adverse

Community and Social Repercussions, Design and Allocation Flaws, and Information Inadequacies. These concerns are:

NOAA/Fishermen Gap - The NOAA-Fishermen Gap refers to the disparity in beliefs and practices that exists between NOAA and active fishermen. This category also covers the general aversion to being regulated by NOAA and other Government agencies, identifying reasons such as lack of accountability, excessive inefficiencies, and perverse incentives

Inequity of Effects - Fishermen consistently reported a belief that sector management will affect people unequally. Most notably, respondents believe that catch shares will reward larger boats and adversely impact small, independent operators. The rationale for this stems from the multi-species quotas and the ability of capital rich entities to buy permits from other members.

Adverse Community and Social Effects - Social and Community disadvantages largely reflected a fear that the fishermen and coastal communities will lose their way of life. Continued fleet consolidation and the resulting unemployment of fishermen, are largely behind this fear but respondents also are concerned with future generation's ability to enter the industry.

Design and Allocation Flaws - Many fishermen feel the basis of allocation is both inaccurate and unfair. This belief stems from a perceived inequality of allocation between the hook sector and the rest of the industry as well as the criteria by which a vessel's history was determined. Another component of this concern is a belief that catch share systems will not work in a multi-species fishery and that government stock assessments are inaccurate.

Information Inadequacies - A lack of information, prolific misinformation, and inability of fishermen and regulators to communicate.

The detailed respondents recommended ways to address concerns/disadvantages are presented below.

- **Allocation concerns**

Recommended ways to address concerns/disadvantages

| |
|--|
| More accurate surveys and better science |
| NEFMC present a viable common-pool option that will not put fishermen out of business |
| Open up fluke restrictions |
| Craft management that can account for shifts in stock biomass |
| Larger allocations to historic ports, historic vessels, and lifelong fishermen |
| Create catch shares for groundfish <i>and</i> monkfish at the same time. |
| Allocate shares by areas fished, not by species or history |
| Allocate regional quotas across gear types |
| Allocate based on fishing effort between 1996-2006 across all species, not specifically groundfish |
| Allocate based on the boats age, and reward small horsepower or gear type |
| Raise quotas to levels that ensure profitability, especially pollock |
| Reduce herring fishery, groundfish need the herring to fully recover |
| Do not base dogfish management decisions based on landings data, use actual science. Landings dropped because there was no profit in going fishing for them. |
| If new gear is required, subsidies should be given to help pay for it |
| Collect data on effect of a regulatory change before implementing another change |

- **Inequity disadvantage**

Recommended ways to address concerns/disadvantages

| |
|--|
| More equal distributions of the quotas |
| Create an allocation design that will be fair for small boats |
| Allow all sector members to choose years used as the baseline for their allocation, just like the hook Fishermen did |
| Make fines proportional to company size, otherwise they unfairly hurt the little guy and big companies can break the rules |
| Open up closed areas equally, and not just to hook Sector |
| Implement buy-back programs for boats and permits, for those who can't make it under new |

| |
|--|
| regulations |
| Reduce herring fishery, groundfish need the herring to fully recover |

- **Implementation/information disadvantage**

Recommended ways to address concerns/disadvantages

| |
|---|
| Impacts and concerns of crew members must be considered |
| Need to get better education and organization of how catch share regulations work, out to fishermen |
| Increased industry input and influence |
| Implement sectors as a pilot project. Make membership voluntary, and select through a lottery |
| Regulations must be consistent so fishermen can plan and make decisions for future. |
| Create coordinated overall plan, not like current "piecemeal" plan |
| Provide better "marketing" training to Sector Managers |
| Publicize how the common pool will be managed |
| Managers need to update fishermen on the status of closed areas |
| Allow fishermen to see how the sectors play out rather than lock them out if they don't join right away |
| Improve communication between managers (NMFS) and fishing industry |
| Do not push an agenda through in one year, allow time for regulation to be implemented |
| A means for Fishermen to coordinate when to fish |
| Allow quota trading and create compatible website |

- **Social disadvantage**

Recommended ways to address concerns/disadvantages

| |
|---|
| Need mechanism for new entrants and for exits |
| Use more than capital as the standard of entry, factor in involvement in fishery |
| Limit consolidation of TAC by large corporations |
| Put a percentage of the TAC into a pool for new entrants (e.g., tax shares sold at 25%, put into common pool for small harbors) |
| Use \$1 million allocated Maine DMR for small boats (which are more important to coastal |

| |
|---|
| infrastructure than big boats) |
| Require owner-operators, like lobster fishery |

- **Economic disadvantage**

Recommended ways to address concerns/disadvantages

| |
|--|
| Have environmental groups buy/lease permits and give money to fishermen. Will reduce overfishing and financially support fishermen |
| Dissolve or subsidize dockside monitoring, so fishermen do not have to pay for it |
| Enact a tariff or embargo on imported fish |
| Subsidies for fishermen who wish to remain in the business until stocks recover |
| Subsidies for fishermen who made investment decisions based on previous management |
| Use dealer monitoring, not dockside monitoring, less fees |
| Eliminate entry fee to joining sectors |
| Stronger economic incentives for joining |
| Create method to prevent boat/quota fire sale so people get what they deserve |
| Notification when fish is imported, so US fishermen do not flood market |
| Need consistency of regulations throughout range of species (even internationally) |

- **Ecological disadvantage**

Recommended ways to address concerns/disadvantages

| |
|--|
| Protect coastal ecosystems where species spawn and have nursery areas by requiring owner-operators there (allow consolidation offshore) and limiting mortality with limits on gear and catch |
|--|

- **By-catch disadvantage**

Recommended ways to address concerns/disadvantages

| |
|---|
| Create an equitable bycatch system for mobile-gear fishermen. (Can't catch haddock w/o some cod |
| Rethink bycatch so less goes overboard |

- **Design disadvantage**

Recommended ways to address concerns/disadvantages

| |
|--|
| Stay with DAS |
| Go to an (equitably divided) ITQ system |
| Use Vito Giacolone's Point System |
| Do not use hook sector as an example of how sectors work, the hook sector only deals with 2 species, not 15 in the multispecies complex |
| Have allocations that reward boats which had less of an impact on stocks and environment. Sectors will favor the biggest, more environmentally damaging boats. |
| Magnuson-Stevens act is inherently flawed - 10 year rebuilding not enough flexibility |
| Allow everyone to fish until TAC is met |
| Install cameras onboard instead of paying for observers. Also safer |
| Through area management |
| Revisit the MMPA, stop putting healthy marine mammal populations ahead of fishermen |
| Account for reduction in stock biomass by increasing populations of marine mammals |
| NMFS needs to revisit the Magnuson-Stevens Act, management is fundamentally flawed |
| Need to deal with technology |
| Do not implement regulations created by Pew and EDF. Listen to those in the industry. |
| Do not use new boat for surveys |
| Need new monitoring strategy |
| Keep spring spawning closures and gear requirements |

- **NOAA/Fishermen gap**

Recommended ways to address concerns/disadvantages

| |
|---|
| Increased industry input and influence |
| Have state and federal representatives at sector meetings |
| Fisheries managers should be volunteer fishermen |
| Give fishermen representation when regulations are being created |
| Reduce or eliminate regulations and let the fishing industry function |
| Fix inefficiency and ineffectiveness of game wardens |

| |
|--|
| Quicker response to regulations by government |
| Address issues through local fisheries association |
| Increase accountability of fisheries managers |

- **Recommendations for other Management systems**

Recommended ways to address concerns/disadvantages

| |
|---|
| Allow the DAS clock to run at the dock. (When you catch more than the trip limit, bring it in anyways and burn a day tied up) |
| Paint 1/2 the boats red and the other 1/2 blue. Red boats fish on odd days and blue boats fish on even days |
| Reduce government control; use system like lobster zones, people who live in the area control it |
| Reduce the amount of regulations |
| Give everyone the same license, allowing them to fish for 12 hours per day, so nets will only be in the water 1/2 the year |
| Let the fishermen regulate themselves |
| Go back to when fishery worked and ask why |

- **Other relevant recommendations**

Recommended ways to address concerns/disadvantages

| |
|---|
| Create laws to protect fish prices, just like milk subsidies. |
| Use a larger mesh size |
| New Hampshire needs it own permit bank |
| Organize Maine communities to fish in state waters |
| Fund more collaborative research |
| Don't allow transfers |
| People who don't use their licenses need to give them up |

Conclusions

There are many ongoing challenges to fishery management in New England and no easy solution. Appropriately designed catch shares, however, offer a potential future of more responsible, profitable and sustainable fisheries. As stated in Pew (2009):

“If properly designed, catch share programs can lead to substantial gains in fisheries by reducing capacity, increasing economic efficiency and ensuring sustainable catches. Poorly designed programs, however, may induce unintended behavior such as increased discarding, underreporting catch, misreporting catch or overfishing of non-quota species” (p.15).

The overall full support for catch shares by the respondents in the fishing industry that we interviewed is relatively low (see tables and charts below), although a large percentage of respondents did over Qualified Support. The Qualified Support category encompasses responses that were neither in full support or opposition to catch share management. These responses included sentiments that certain species and types of gear are incompatible with sectors, crewmen who will support it only if their captain does, as well as individuals who claim that catch share management is good in theory, but are unhappy with the implementation and allocation process thus far.

| Table 14. Percentage of Support of catch shares by state | | | | |
|---|-----------------------|---|----------------|----------------|
| State | Do Not Support | Qualified <input type="checkbox"/> Support | Support | Total % |
| Rhode Island | 43 | 25 | 33 | 100 |
| Massachusetts | 49 | 37 | 14 | 100 |
| Connecticut | 41 | 42 | 17 | 100 |
| New Hampshire | 77 | 23 | 0 | 100 |
| Maine | 34 | 53 | 13 | 100 |

Figure 1: Total support for catch shares

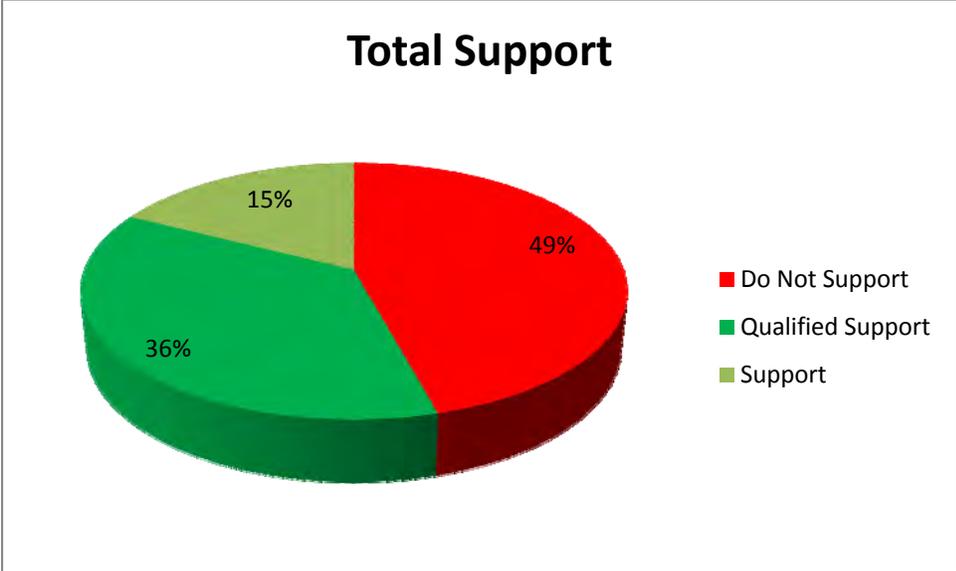


Figure 2: Total support for catch shares Rhode Island

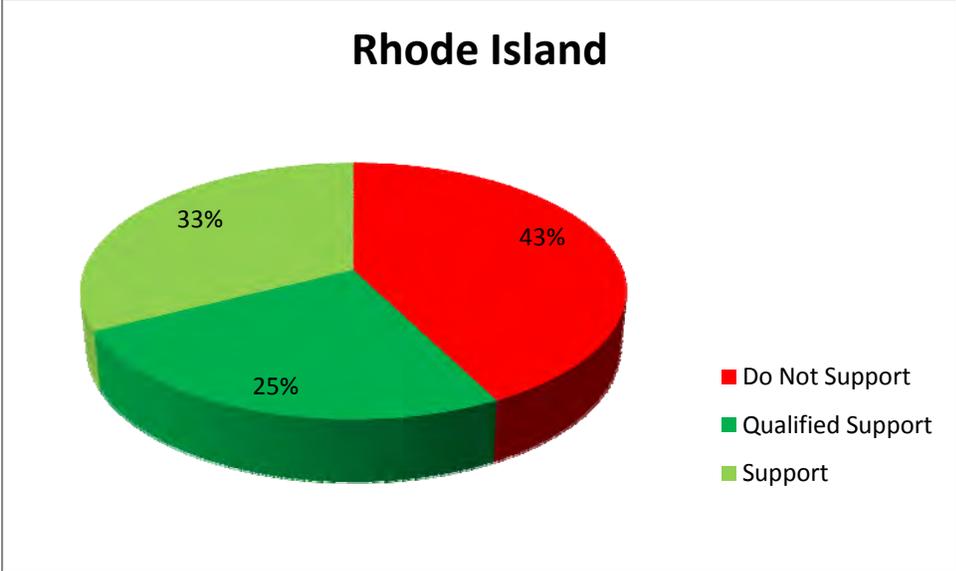


Figure 3: Total support for catch shares Massachusetts

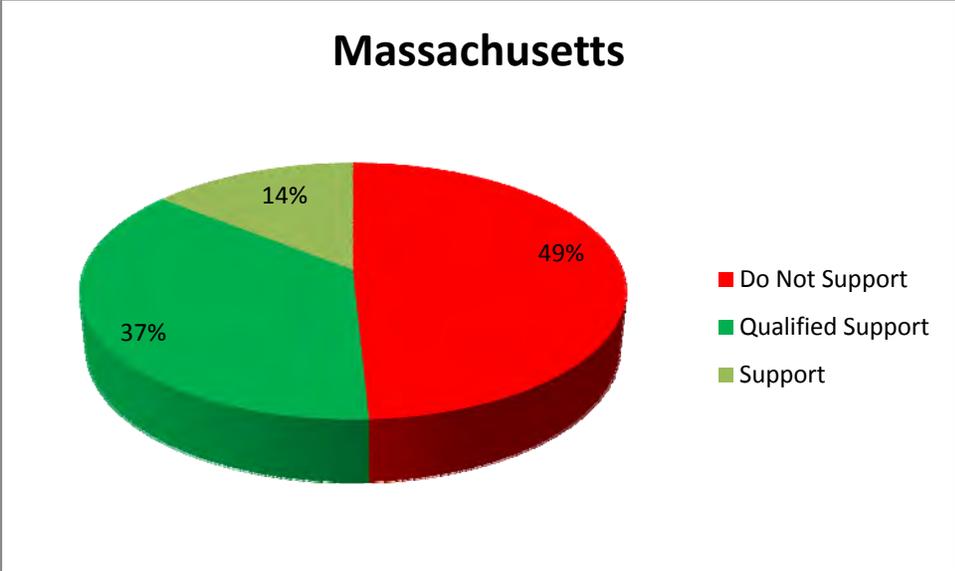


Figure 4: Total support for catch shares Connecticut

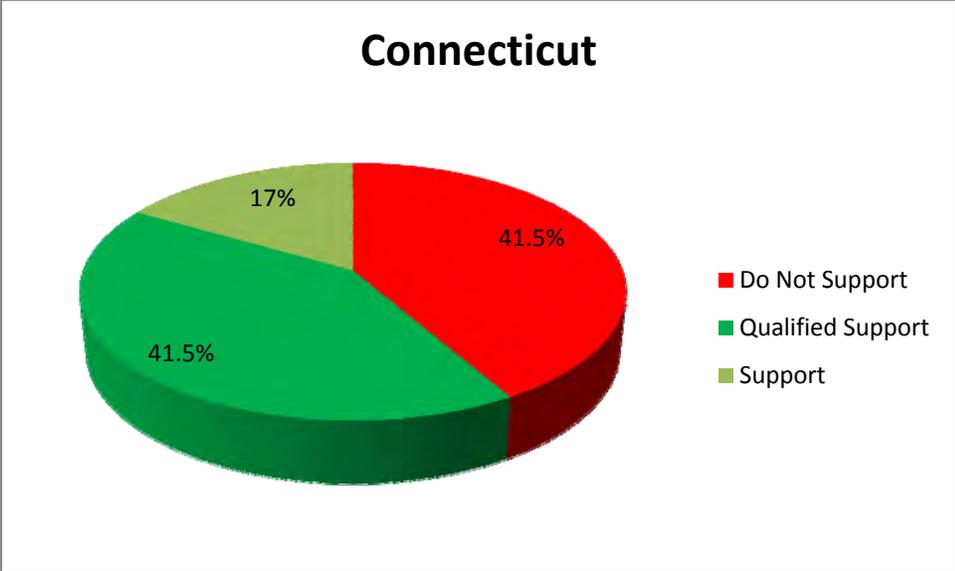


Figure 5: Total support for catch shares New Hampshire

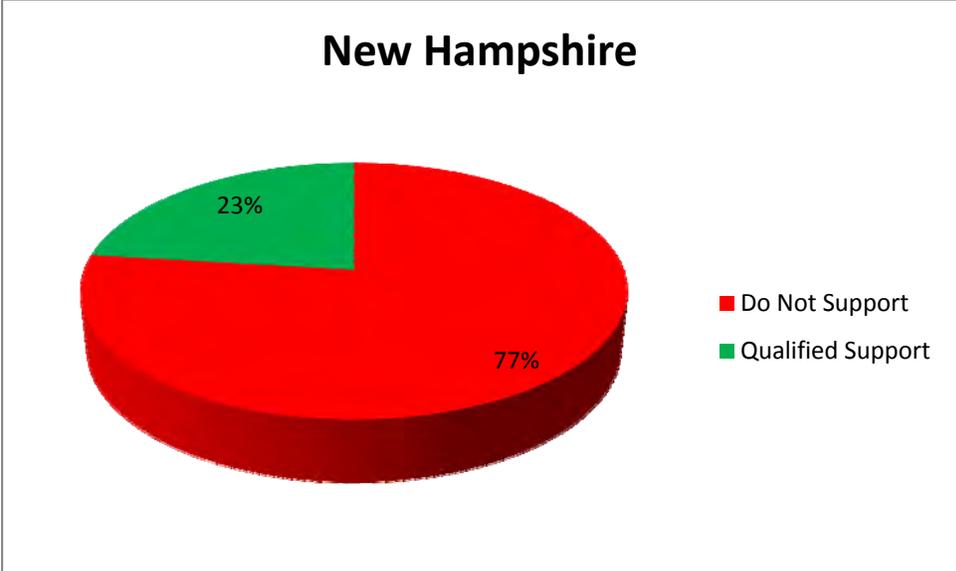


Figure 6: Total support for catch shares Maine

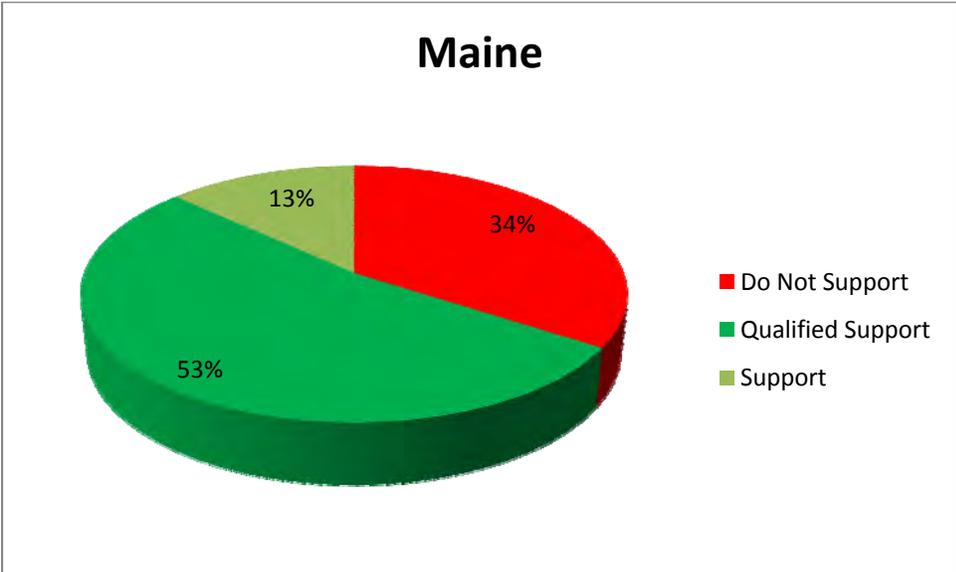


Figure 7: Total support for catch shares Draggers

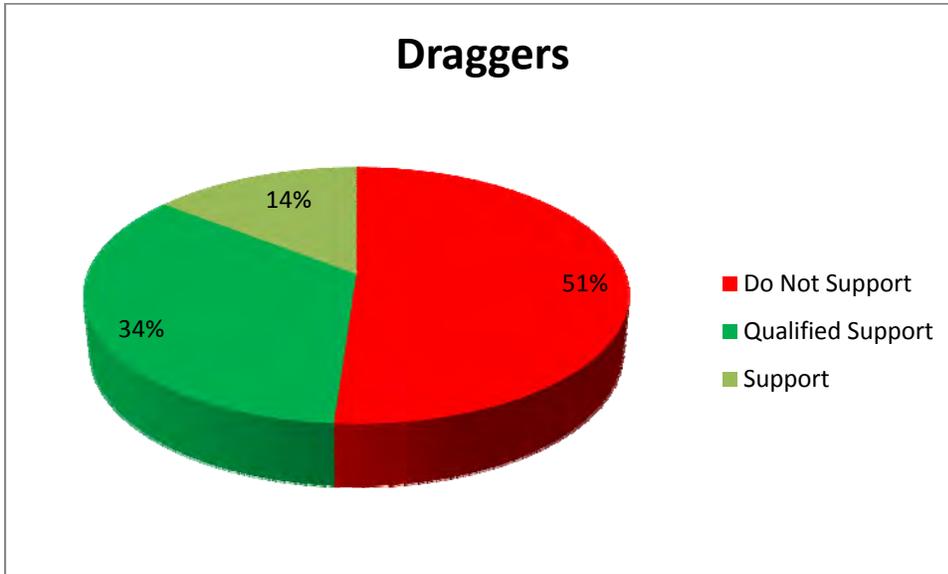
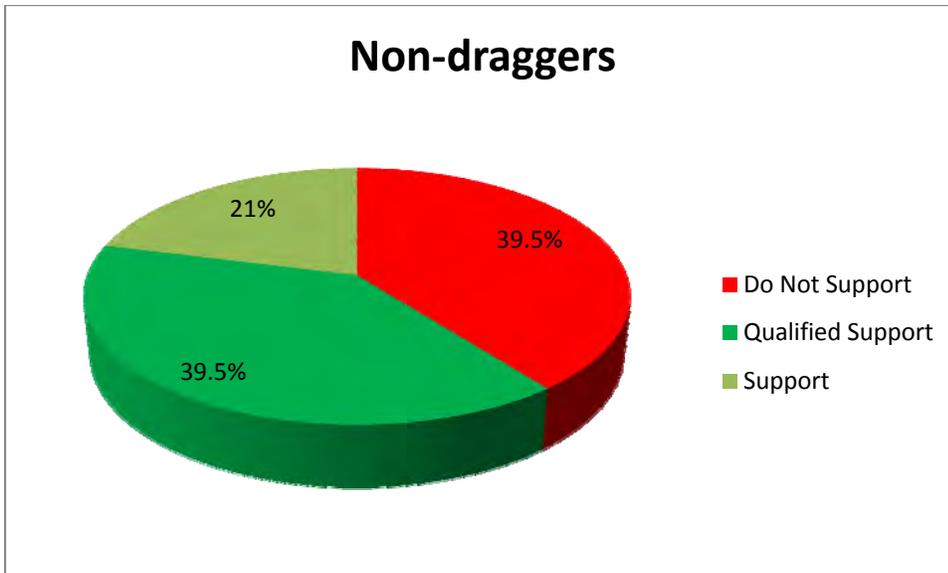


Figure 8: Total support for catch shares Non-draggers



Respondents did identify several advantages of catch shares including Flexibility and Decision Making, Economic, and Social Advantages. Respondents were forthright in their identification of disadvantages and concerns with catch shares. Informational Deficiencies, Allocation Issues,

Design Flaws, and an Inequity of Effects are the most prevalent identified by respondents. New Hampshire and Maine respondents identified the fewest advantages of catch shares. Connecticut, Rhode Island, and Massachusetts had a higher percentage of respondents who identified some advantages. However, even these respondents more frequently mentioned disadvantages than advantages.

It is important to note that many of the disadvantages and concerns identified by the respondents were the result of DAS management, the current status of many stocks, and the current state of the industry, and not catch shares.

Recommendations

Our findings indicate that the most important actions necessary to ensure the success of catch share management in New England fisheries are increased education and community outreach, increased fishermen input, and a method to produce equity of impacts among active fishing boats. These suggestions arise from not only the disadvantages that fishermen identified during the interview process, but also from the great disparity of knowledge among fishermen. The pace of implementation of catch shares is too fast and may require more engagement with fishermen, which takes time if done properly.

Many fishermen are frustrated because they do not fully understand catch share management. They also feel that regulations change too frequently to make rational business decisions. A concerted effort to increase industry participation and education is required to minimize future altercations and lawsuits. Many of the above issues could be addressed with increased information and community outreach. In that vein, the following are some specific recommendations:

Explain Research and Stock Survey Methods and Allow for Adaptation - This is especially important considering the great number of fishermen who believe stock surveys to be highly inaccurate.

Establish a New and Efficient Way to Elicit Input from Fishermen - Fishermen feel largely disenfranchised from fishery management officials. Many individuals feel the NEFMC is not responsive to their suggestions and has hidden motives. Creating a healthy give and take from the community is essential. Possible solutions to this problem are increased workshops that

stress joint accountability and fishery objectives, more easily understood letters and regulations, periodic surveys either by mail or in person.

Increase Overall Information Prior to Implementation - Respondents express concern over the lack of information about key issues, including common pool regulations, closures, and method of quota transfers. Possible solutions include simple and practical brochures and fact sheets.

Create a Participatory Process - Currently, the relationship between fishermen and regulators is most accurately defined as adversarial. Creating a department or official whose primary concern is promoting participation and transparency could go a long way in creating a less hostile environment.

Create a Catch Share Working Group - Have the NEFMC create a catch shares working group comprised of fishery managers and stakeholders charged with assessing the catch share program and recommending improvements. This group can meet outside of the Council setting to have in-depth discussions on catch share goals, implementation, and design.

Design Recommendations

While we were not able to analyze how specific design changes will affect the ecological, social and economic performance of catch shares, there are a number of design specific regulations suggested by industry members that may improve the design of these programs and help the implementation process and increase fishermen support.

Incorporate Mechanisms to Limit Fleet Consolidation - Many fishermen expect corporations and high capital entities to buyout local boats. This expectation leads to a fear that coastal communities will be devastated.

Consider Allocation Changes and Bycatch Flexibility - Many stakeholders are concerned that their quotas for certain species—specifically pollock and cod—are too low. Since certain fish swim together, it becomes impossible to catch one species without the other and reaching one quota prevents fishermen from catching the other.

Keep Costs Low - Many fishermen feel that increased monitoring costs and management costs will negatively affect the profitability of an industry that is already in trouble.

Consider Environmental Incentives - Create incentives that reward boats which minimize their impact on stocks and the environment. Unless sectors are correctly managed, they may favor the bigger, more environmentally damaging boats. Provide incentives for less selective gear types to transition to more selective gears.

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Annex 1

Questionnaire: Catch Shares in New England Fisheries

1. Do you know what a catch share system is? Yes/No
If yes, go to question #3
2. If no, do you know what a sector, harvest cooperative, ITQ, IFQ is? Provide a brief explanation if needed. *A catch share grants a secure privilege to harvest a given percentage of a fishery's total allowable catch to an individual, group, or community. Individual catch shares are known as ITQs, IFQs, and group catch shares are known as sectors, harvesting cooperatives. A sector allocation program consists of a group of fishermen that get together and collectively receive a given portion of a quota.*
3. If yes, where did you learn about it?
4. Based on your knowledge about catch shares (or based on what you learned from what I just explained), could you tell me five advantages or good things about catch shares?
5. In your opinion, could you tell me five disadvantages or bad things about catch shares?
6. Can you suggest ways to address your concerns/disadvantages about catch shares?
7. (If you do not get a response in Q5, ask...) Do you feel that there will be impacts on fleet diversity (gear types, geography, scale of operations) as a result of catch shares?
8. (If you do not get a response in Q5, ask ...) Do you feel that there will be impacts on boat profitability as a result of catch shares?
9. Would you be willing to support a catch share system in fisheries management?
10. Why or why not and under what circumstances?

Background Information

Age _____

Years fishing _____

Boat owner _____ Captain _____ Crew _____ Other _____

If crew, how long have you been fishing on this boat _____

Principal port _____

Principal fishing type _____

Other fishing types_____

Current catch share member_____ Which fishery_____

Date of interview_____

Location of interview_____

Annex 2:

Design Solutions

Many concerns have arisen among stakeholders in the New England groundfish fishery about the design and implementation of catch share management. The purpose of this annex is to summarize and categorize the concerns that stakeholders expressed in the Sea Grant survey commissioned by EDF, in order to facilitate joint problem-solving. In this annex, we summarize and categorize stakeholder concerns as articulated in the survey and then offer our initial take on solutions based on design options used in existing catch share programs. These solutions can be introduced and vetted at appropriate times during the suggested participatory process.

**Note - some of these concerns are not due to catch shares. However, a catch share system can still be designed to help address and alleviate these concerns.

ALLOCATION

Concern: Non-permit holder (crew) contributions not recognized, small and mid-sized boats that fished for quality and not quantity, fishermen who reduced catch to protect juveniles, and diversified fishermen with small catch histories are disadvantaged; wealthy individuals will get all the allocation; allocation punishes people who gave up permits due to expense relative to fishing opportunity; allocation punishes jiggers and gillnetters who do less damage to the ocean than trawlers; scallopers will get no allocation because they have no groundfish catch history

Potential Solutions: Develop different allocation approach, especially focused on the formula.

This could include:

- Equal allocation formula (everyone gets the same amount);
- Provide incentives for less-selective gear types to transition to more selective gears.
- Adopt multiple factor allocation system (e.g., with points awarded for time in the fishery) as recommended by National Academy of Sciences;

- Negotiate relevant criteria and weights (operational definition of “equitable allocation”) in structured stakeholder workshops, and then outsource allocation process to retired judge or objective panel;
- Develop goals for Adaptive Management Program (AMP) quota share, carve out AMP quota from TAC, develop criteria and process to award AMP quota; and/or
- Develop auctions- Auctions require participants to pay for the shares, whereas granting gives the shares free of charge to an identified set of participants at the program initiation. Under auctions, eligible recipients pay upfront for the privilege to use a public resource. The revenues generated through auction can be distributed back to the public, used to cover management costs, such as the cost of research or enforcement, or used to meet other objectives. If shares are initially allocated via auction, it should occur at the end of the catch share design process so that bidders know the attributes of the privileges.

Concern: Inaccurate allocations (missing catch history, etc.)

Solutions:

- Need appeals and data correction process that participants are aware of and understand; and/or
- Develop an allocation process that is not tied to history.

Concern: Low allocations

Solutions:

- Allow transferability (buying, leasing and selling);
- Pool assets and purchase more quota;
- Establish permit banks;
- Establish a grant or loan program to help fishermen purchase additional quota;
- Business and marketing training to get higher price for higher quality fish or find niche market (CSF, locally caught brand); and/or
- Encourage fishermen to fish more selectively and develop new gear configurations.

Concern: Few permits and fishermen left in some areas, threatening fishing communities and culture

Solutions:

- Establish community permit banks;
- When annual catch limits (ACLs) increase set some quota aside to be used for new entrants;
- Establish a grant or loan program to help fishermen purchase additional quota; and/or
- Establish transferability requirements based on geographic location (port, city, etc.) to make sure that permits don't migrate out of the community.

Concern: Local fishermen without much allocation can't fish local grounds but others can

Solutions:

- Consider establishing local niche markets and performance standards linked to local brand to limit the number of "outsiders" without legally excluding them;
- Establish permit banks that are regional or community specific;
- Establish a quota set-aside so new entrants can enter the fishery when ACLs increase; and/or
- Establish a grants or loan programs for resident fishermen to gain access to quota.

Concern: Allocation doesn't account for DAS effort; people bought DAS permits or permits based on horsepower/length that are now worthless

Solutions:

- Consider alternative allocation approaches that include DAS conversion; and/or Participate in the decision making process to get your preference heard.

Concern: Pollock and Yellowtail quota too low

Solutions: (May be more of a hard TAC problem or current resource availability issue due to previous poor management)

- Pool quota in sector;
- Fish cooperatively to maximize fishing opportunity;
- Participate in cooperative research projects to increase scientific information collected on stocks;
- Establish stock specific concentration limits; and/or
- Separate allocation method for the weakest stocks including equal allocation to all participants.

Concern: Unprofitable allocations

Solutions:

- Allow trading (buying, selling and leasing);
- Establish a grant or loan program to help fishermen purchase additional quota;
- Develop niche high value markets; and/or
- Reduce fishing costs to match allocation and increase profits.

Concern: Owning will require over-leveraging

Solutions:

- Establish a grant or loan program to help fishermen purchase additional quota; or
- Allow leasing (buying, selling and trading).

Concern: Allocations do not account for range shifts in fish; people may trade for quota but then not be able to fish them due to movement of stock; trawling disadvantaged due to lack of selectivity, reaching quota for one species in multispecies fishery may result in closures; Fish swim together but allocations do not account for comingling

Solutions:

- Establish communication at sea to track movements and quota trading brokers who can conduct transactions in near real time;
- Allow trading (buying, selling and leasing);

- Increase and improve collection of fishery-dependent information for stock assessments through at-sea monitoring; and/or
- Provide incentives for less-selective gear types to transition to more selective gears.

Concern: Transition to catch shares inflates the price of permits

Solution:

- Reflects long-term vesting in sustainability which is one of the goals of the catch share program; and/or
- Facilitate new entrants through methods that ease entries such as permit banks, community quota entities, low-interest loans, etc.

Concern: Hook sector gets unfair advantage

Solution:

- Participate in the Council process more;
- Sectors can position themselves also to gain advantage in revised allocation system for next fishing year;
- Sectors can reshuffle allocation amongst themselves and choose a different allocation scheme; and/or
- Establish a grant or loan program to help fishermen purchase additional quota

CATCH SHARE DESIGN

Concern: Too many vessels

Solutions: This is a problem to be solved by a well-designed program that reduces overcapitalization and balances social goals. For example,

- Balance transfer restrictions based on geographic location or vessel size;
- Establish ownership restrictions;
- Better matching of capacity to available fish; and/or
- Buy-back program.

Concern: Monitoring and catch share management too expensive

Solutions:

- increase efficiency of administration and monitoring including using lower cost monitoring techniques (i.e. full retention and dockside monitoring, electronic monitoring, higher fines with lower coverage, pool observers);
- Have government pay for more of the monitoring costs in the beginning years until the fishery becomes more profitable and industry can bear more of the costs;
- When fishing becomes more profitable tie industry cost-share to profitability;
- ITQs are cheaper than sectors because administrative fees are less expensive;
- Look into ways to reduce administrative fees; and/or
- Effective monitoring should be in place regardless to ensure the program functions.

Concern: Cost of quota is barrier to entry

Solutions:

- Establish a grant or loan program to help fishermen purchase additional quota
- Establish permit banks;
- Cooperative fishing of pooled quota that allows new entrants to use collectively-held quota; and/or
- Allow for quota leasing in small increments.

Concern: Low income from low quota will result in poor vessel repair and unsafe conditions

Solutions: (this is more of a hard TAC problem or current resource availability issue due to previous poor management)

- Establish a grant or loan program to help fishermen purchase additional quota;
- Work cooperatively within a sector;
- Ability to lease quota on an annual basis allows fishermen to keep a stake in the fishery while stocks recover; and/or
- Reduce fishing costs to increase profitability

Concern: How will closed areas be managed?

Solutions:

- Host workshops and subsequent analyses related to closed areas and other aspects of spatial management to ensure that allocation units are ecologically appropriate; and/or
- Re-examine closed areas to determine need and effectiveness moving forward.

Concern: Seasonal closures possible

Solutions:

- Closures might be necessary under any type of management system, including catch shares, to protecting spawning fish or habitat; and/or
- Open areas up to fishing that have just been used for effort control to protect mortality.

Concern: Most fishermen don't think catch shares will work; catch shares don't work for trawl fisheries

Solutions:

- Peer education within the region;
- Host fishermen exchanges with fishermen who have been through the transition and operate under catch shares; and/or
- Host workshops on existing catch share programs
- Numerous trawl fisheries around the world are under catch share management.

Concern: Getting rid of 2:1 counting of DAS will open up inshore to heavy fishing again

Solutions:

- Establish spatially explicit ACLs to protect inshore stocks; and/or
- Keeping certain rolling closures will continue to protect spawning stocks. In state waters in MA, spawning closures especially in Ipswich Bay remain in place.

PROFITABILITY/ECONOMIC ISSUES

Concern: Need to restructure business from DAS to ACL approach

Solutions:

- Provide business planning assistance, training and workshops;
- Rely on fishermen's adaptability and ingenuity; and/or
- Peer-to-peer exchanges with other catch share fisheries to understand how to transition.

Concern: Could lead to concentration of fishing in same area

Solutions:

- Establish area quotas;
- Fishermen have flexibility to choose when and where to fish; and/or
- Transferability requirements based on geography.

Concern: Could disrupt supply of fish as quotas are fished out quickly or large quotas lead to volatile prices

Solutions:

- Peer education (fish supply and ex vessel prices usually improve markedly);
- Fishermen have the flexibility to choose when and where to fish;
- Host business planning and training workshops;
- Encourage communication between fishermen and buyers to provide information on prices.

Concern: Could result in more imported fish

Solutions:

- Provide access to business planning to boost local markets; and/or
- Create local brands and performance standards with marketing campaign and futures contracts (i.e. CSFs).

Concern: Sectors may fix prices

Solutions:

- Sherman anti-trust provisions exist so that a legal argument could be made.

Concern: Could lead to share-cropping relationships

Solutions:

- Establish concentration limits;
- Restrictions on allowable lease rates;
- Establish a grant or loan program to help fishermen purchase additional quota;
- Establish permit/quota banks with fishing requirements; and/or
- Establish user and/or ownership requirements.

Concern: May decrease profits of shoreside businesses

Solutions:

- Peer education;
- Fewer boats may mean less income for some shoreside business (for example, less dockage and shore power fees, less insurance costs, etc.) However profits are also likely to increase for processors (and for fishermen, for that matter) since they will be able to avoid market gluts more effectively; and/or
- Establish landing requirements for specific coastal towns

Concern: Can't make good business decisions because things will change too fast

Solutions:

- Peer education (fish supply and ex vessel prices usually improve markedly);
- Things have been constantly changing under the DAS system. With assurance of access to a certain percent of the TAC, business planning will be easier;
- Host business planning and training workshops;
- NMFS to increase communication of changes to fishermen; and/or
- Catch shares tend to improve communication and make fishery management more predictable.

Concern: Increased unemployment

Solutions:

- Peer education about quality vs quantity of jobs;

- Establish concentration limits;
- Increase opportunities for new entrants and crew to purchase or lease permits; and/or
- Establish user and/or ownership requirements.

Concern: More cost-effective for scallopers to lease permit rather than change gear to target groundfish

Solutions:

- Establish user and/or ownership requirements; and/or
- Restrictions on allowable lease rates

Concern: Restricts trade and the ability of buyers to buy

Solution: catch shares modify balance of market power. Buyers need to adapt business models too

SOCIAL/COMMUNITY

Concern: Will break up communities

Solutions:

- Establish permit banks;
- Establish low interest loan programs for fishermen to acquire more quota;
- Establish an Adaptive Management Program;
- Establish a community development quota program; and/or
- Create local brands and performance standards with marketing campaign and futures contracts (i.e. CSFs)

Concern: Takes away cowboy aspect of fishing

Solution:

Competition shifts to race for value and smarter fishing

Concern: A few individuals or firms will hold excessive amounts of shares

Solutions:

- Establish accumulation limits and strong enforcement of limits; and/or
- Establish user and/or ownership requirements.

Concern: Polarizes fishermen in and out of the catch share system

Solutions:

- Peer education;
- Establish permit banks; and/or
- Implement comprehensive catch share program so that there are not two systems.

Concern: Will shift pressure to other stocks

Solution:

- Consider integrating other FMPs in the near future to address potential of shift of effort (monkfish, scallops (yellowtail flounder), skates)

Concern: People will be forced to enter into binding contracts with people they don't know

Solutions:

- Negotiate escape clauses in case of poor performance or breach of faith;
- Provide legal assistance to help fishermen negotiate these contracts;
- Organize sectors by ports/communities and not with people far away; and/or
- Implement IFQ instead of sectors.

Concern: People will lose direct connection to fish and fishermen

Solutions:

- Establish community share programs for fishing collectives or individual fishermen;
- Set up community development quota program;
- Niche marketing (local sustainable, fishermen personalities, CSFs); and/or
- Off-the-dock sales.

Concern: Will erode fishing culture

Solutions:

- May save fishing culture endangered by DAS restrictions and closures;
- Establish Adaptive Management Program to allow for new entrants; and/or
- Establish community permit banks.

INEQUITABLE IMPACTS

Concern: Will make good fishing grounds more public

Response: Data confidentiality restrictions still apply

Concern: Could lock out buyers depending on where observers are stationed-

Solution:

- Every landing port I subject to roving or dockside monitors; and/or
- Implement 100% observer coverage so that there is a level playing field

Concern: Dealers who manage a sector will have an advantage

Response: it is illegal for dealers to manage a sector

IMPLEMENTATION/INFORMATION

Concern: New regulations only backed by government and environmentalists

Solutions:

- The NEFMC unanimously approved sectors and this body is made up of primarily industry members;
- Participate in the decision making process more; and/or
- Peer education.

Concern: Too much uncertainty

Solutions:

- Business planning assistance and training on sector operations/reporting

Concern: Managers keep changing rules-

Response: inevitable in first years of program, they need to be adaptive because it is hard to predict human behavior. Furthermore, rules are continually changing under DAS

Concern: Too much pressure to join catch shares

Response: Program is voluntary and you can always opt out.

Concern: Implementation too fast without sufficient information

Solutions:

- Refine program design next year;
- Participate in the process; and/or
- All management systems are refined continually over time by fishermen and managers, this will be no different

Concern: Fishermen not organized enough to manage and trade quota effectively

Solutions:

- Hire a very knowledgeable sector manager;
- Business planning assistance;
- Coop/sector organization assistance;
- Regulated quota brokerages to help with transfers; and/or
- Common concern under any major transition, but understanding of the program and ingenuity almost always occurs.

Concern: Confusing to have some species regulated with catch shares and some with DAS

Solutions:

- Bring all species under catch shares; and/or
- Training sessions on how to operate under 2 systems.

Concern: People will land more than their share and discard

Solutions:

- Need to make sure to have sufficient monitoring and enforcement

GOVERNMENT

Concern: Wrong to privatize a public resource

Solutions:

- Conduct outreach with documentation of nature of catch shares as revocable privilege and comparing catch shares to limited access licenses and permits;
- The law on this is very clear: Section 303A(b) of the Magnuson Stevens Act, which is the federal framework for fisheries management in the U.S., expressly states that any fishing privileges created under that Act "*may be revoked, limited or modified at any time*", "*shall not confer any right of compensation to the holder*", and "*shall not create, or be construed to create, any right, title, or interest in or to any fish before it is harvested*".
- Show legal basis for privatization being illegal; and/or
- Highlight that participation is already limited, and this is just another way of managing an already restricted group of harvesters.

Concern: Government not fixing mistakes (e.g., allocation calculation errors)

Solutions:

- Need an appeals and correction process that industry understands and is aware of; and/or
- Government must demonstrate good faith and ability to avoid and fix mistakes and be adaptive.
-

Concern: TAC calculations are wrong

Solutions:

- NMFS outreach to fishermen on stock assessment methodology;
- Continue investing in cooperative research that gets plugged into stock assessments. Get firm commitment from NMFS to incorporate monitoring results from sectors into stock assessments; and/or
- Greater engagement of fishermen in sampling and analysis of stock assessments, more transparency.

ECOLOGICAL

Concern: Managers have unrealistically high expectations about stock recovery

Solutions:

- Conduct outreach and education

Concern: Whole ecosystem will get trashed

Response: Experience under catch shares is opposite of this. Ecosystem is suffering under status quo

Concern: No stewardship will be created and it won't stop pulse fishing

Solutions:

- Peer education through fishermen exchanges; and/or
- Allow fishing to commence.

Concern: Catch shares preserve effort, not fish

Solutions:

- Outreach and education

Concern: No benefit relative to closing spawning grounds or reducing dragging

Solutions:

- Peer education- acknowledge that catch shares alone are often insufficient and that other management tools are necessary for some management goals

AVERSION TO REGULATION AND CHANGE

Concern: Too much regulation

Solutions:

Peer education highlighting how catch shares provide more flexibility

Concern: Historically, government plans have not worked

Response:

- Outreach, education and fishermen exchanges; and/or
- Sector program idea came from industry, not government.

Concern: More bureaucracy and inefficiency

Solutions:

- Peer education and effective efforts to reduce bureaucracy and inefficiency coupled with outreach to communicate gains

Concern: NMFS not responsive enough to manage fisheries

Response: sectors may be more nimble, represent transfer of some management authority to fishermen to overcome problems with responsiveness associated with very large spatial scales and highly diverse constituents

Concern: Fish populations are increasing, don't fix what ain't broke

Solutions:

- Education and outreach around difference between CPUE trends and abundance trends due to fishermen skill at targeting;
- Highlight cost of achieving incremental increases (i.e., incredibly restrictive DAS); and/or

- Highlight lack of progress in some/many stocks.

Concern: Government favors big business while killing independent operators

Solutions:

- Peer education;
- Establish accumulation limits; and/or
- Implement design options to protect small boats such as trading restrictions, owner/user requirements, permit banks with leasing provisions for small boats.

Concern: Fishermen should be more empowered relative to the government; will reduce local management and concentrate power at federal level

Solution:

- Peer education around co-management and empowerment via catch shares relative to micromanagement of effort.

Annex 3

This annex presents the responses of the respondents to selected questions and the grouping of the responses.

Q4 - Advantages to Catch Shares (The group into which each response was placed is highlighted).

- 1 - Recognition of past good performance, thus a "good catch history" Allocation 1. Allocation Advantages
- 2 - Flexibility of when to fish Decision Making/Flexibility 4. Decision Making and Flexibility
- 3 - More profitability Economic 6. Economic and Profitability Advantages
- 4 - Less or no bycatch, discards. Environmental/Biological 3. Environmental/Biological
- 5 - Safety Social/Community 5. Increased Safety
- 6 - Fish closer to home, not go offshore Social/Community 2. Social/Community 4. Decision Making and Flexibility
- 7 - Better Economics Economic 6. Economic
- 8 - Know quota (personal, ITQ) Regulatory Advantage 1. Allocation
- 9 - ITQ Places everyone on equal footing Allocation 1. Allocation
- 10 - Help Bigger Boats Allocation *Situation Dependent* 8. Situation Dependent, 6. Economic, 1. Allocation
- 11 - Do not know enough about catch shares to give advantages.
- 12 - Easy to manage Regulatory 7. Regulatory
- 13 - None.
- 14 - Ends the race to fish. Environmental/Biological 5. Increased Safety
- 15 - The share I am assigned is more or equal to what I was catching (Could also be coded as 1). Allocation 1. Allocation
- 16 - Own/keep what you catch and are always guaranteed your share. Allocation 1. Allocation
- 17 - Fewer seasonal closures. Regulatory 7. Regulatory
- 18 - Better price of fish. Economic 6. Economic
- 19 - Advantages depend on vessel situation.
- 20 - Clarifies confusing regulations and makes regulations practical. Regulatory 7. Regulatory
- 21 - No more trip quotas. Regulatory 7. Regulatory
- 22 - Could open up closed areas. Regulatory 7. Regulatory

- 23 - Can swap quotas. **Decision Making/Flexibility** 7. Regulatory
- 24 - Increases market power of fishermen. **Economic** 6. Economic
- 25 - Reduced fuel consumption. **Economic and Environmental/Biological** 6. Economic, 3 Environmental/Biological
- 26 - Reduced pollution. **Environmental/Biological** 3. Environmental/Biological,
- 27 - Improves targeting of select species. 3. Environmental/Biological, 4. Decision Making/Flexibility, 6. Economic
- 28 - Unskilled fishermen will get an advantage. ***Situation Dependent***
- 29 - No more input days **Regulatory** 7. Regulatory
- 30 - Gets away from inefficiencies under DAS. 3. Environmental/Biological, 4. Decision Making/Flexibility, 6. Economic
- 31 - (Fishermen will pay) Less money to the shipyard. 6. Economic
- 32 - Spreads the fleet out, less taxing on stock/fishery **Environmental/Biological** 3. Environmental/Biological
- 33 - Will put some boats out of business, reducing impact on stocks. **Environmental/Biological** 3. Environmental/Biological
- 34 - Will lead to better science in determining stock numbers. 7. Regulatory
- 35 - Catch shares provide eco-friendly incentives to keep stocks healthy. **Environmental/Biological** 3. Environmental/Biological
- 36 - Output regulation makes more sense than input regulation. **Regulatory** 7. Regulatory
- 37 - Elimination of baseline leasing - vessel tonnage *length and horsepower* don't have to be matched **Regulatory and Decision Making/Flexibility** 7. Regulatory, 4. Decision Making/Flexibility
- 38 - Good if you get a large quota. ***Situation Dependent*** 1. Allocation
- 39 - I don't know enough about Catch Shares to say if there are advantages.
- 40 - They force fishermen to work together, to join forces and act as a cohesive unit. Catch shares have mobilized this fishing fleet for the first time in a long time. **Social/Community** 2. Social/Community
- 41 - Would be good if I wanted to be the only one fishing 1. Allocation
- 42 - Like it if fishery can still remain independent 2. Social/Community

- 43 - Will finally help obtain biological goals regarding mortality **Environmental/Biological** 3.
Environmental/Biological
- 44 - No regulatory discards (Same as 16?) **Regulatory** 7. **Regulatory**
- 45 - Can try to manage your own business (same as 7?) **Decision Making/Flexibility** 4. **Decision Making/Flexibility**
- 46 - Higher return because pulse fishing will end **Economic** Not sure what "pulse fishing" refers to?
- 47 - Want to wait and see what happens before saying
- 48 - Might help groundfishermen stay in business **Economic** 6. **Economic**
- 49 - Good if Port Clyde can swap yellowtail or GB cod allocation for GOM cod or other species in their area ***Situation Dependent*** 4. **Flexibility/Decision Making**
- 50 - May help small fishermen for a very short time **Economic** 6. **Economic**
- 51 - Eliminates 2:1 counting of DAS **Regulatory** 7. **Regulatory**, 4. **Flexibility/Decision Making**
- 52 - It will help fish populations (like 43?) **Environmental/Biological** 3.
Environmental/Biological
- 53 - People will go for and keep bigger fish **Environmental/Biological** 3.
Environmental/Biological
- 54 - Less hassle with the Coast Guard (regarding rescues) **Social/Community** 5. **Safety**
- 55 - Less time at sea **Social/Community** 2. **Social/Community**
- 56 - Allow government to manage industry more efficiently **Regulatory** 7. **Regulatory**
- 57 - Gives those with quota a chance to fish **Allocation** 1. **Allocation**, 4. **Flexibility/Decision Making**
- 58 - Will reduce the feast or famine nature of the fishery **Regulatory and Environmental/Biological** 1. **Allocation**
- 59 - Good if you are in it ***Situation Dependent*** **Economic** 1. **Allocation**, 6. **Economic**
- 60 - Can hold out for better stocks **Decision Making/Flexibility** 3. **Environmental/Biological**
- 61 - People who are in it are going to get rich **Economic** 6. **Economic**
- 62 - It will keep communities going **Social/Community** 2. **Social/Community**
- 63 - Disadvantage for guys who have played the game
- 64 - Will end DAS (same as 29?) **Regulatory** 7. **Regulatory**

65 - Will allow fishermen to be more selective, e.g., stay out of high bycatch areas **Decision Making/Flexibility and Regulatory** 4. Flexibility/Decision Making, 7. Regulatory

66 - Will rebuild fish stocks quicker **Environmental/Biological** 3. Environmental/Biological

67 - Can target a species and trade for more quota (with quota of a species you aren't targeting) within the sector if you go over **Decision Making/Flexibility and Regulatory** 4. Flexibility/Decision Making, 7. Regulatory

68 - OK, if based on equal shares for people in fishery ***Situation Dependent*** 1. Allocation

69 - They are trying to preserve the stocks **Environmental/Biological** 3. Environmental/Biological

70 - It will help the guys who are out there every day **Allocation** 1. Allocation

71 - Will have greater impact on groundfish fleet than on scallop fleet.

Annex 4

This annex presents the responses of the respondents to selected questions and the grouping of the responses.

Q5 - Disadvantages to Catch Shares. (The group into which each response was placed is highlighted).

- 1 - Performance other than permit owner not recognized (because of transferability of permits, years used to calculate allocations do not represent an individuals catch history, which may be associated with another permit). Allocation Standards 11. Regulation Inadequacies
- 2 - Difficult transition to new form of management 7. Profitability/Economic
- 3 - Breaking up communities Social/Community 6. Social/Community
- 4 - Favors small percentage of boats Inequity of effects 2. Inequity
- 5 - Does not address the issues of common pool and those boats in it. Allocation Standards and Implementation Issues 1. Allocation Standards, 11. Regulation Inadequacies
- 6 - Fewer landings per boat Allocation Standards 1. Allocation Standards
- 7 - Inaccurate allocation of TAC to permit holders Allocation Standards 1. Allocation Standards
- 8 - Unfair allocations. Inequity of effects 1. Allocation Standards, 2. Inequity of effects.
- 9 - Privatization of public resource Government Malfeasance
- 10 - Restructure business from DAS approach to TAC approach (Hurts those invested in DAS) Inequity of effects and Implementation Issues 7. Profitability
- 11 - Allocation system will not be profitable Allocation Standards and Profitability 1. Allocation Standard, 7. Profitability
- 12 - Monitoring will be incredibly expensive Profitability 7. Profitability/Economic, 11. Inadequacies
- 13 - Changes occupation from "fisherman" to a "catcher" (of fish), takes away independence. Social/Community 6. Social/Community
- 14 - Additional pressure on seasonal fisheries (because of small allocations) and will increase pressure on underutilized species. Ecological 8. Ecological
- 15 - Cost of joining (money paid to join Sector). Profitability 7. Profitability, 11. Inadequacies

- 16 - Fail to capture the reduced fishing effort of some that led to the rebuilding of the fishery (seasonal fisheries, targeted other species during 1996-2006, differential counting in GOM, and 18% reductions in DAS). Punishes those who stopped fishing because they didn't like catching so many juveniles, who had no history and gave up permits because it was too expensive to keep them and not fish **Allocation and Inequity of effects** 1. Allocation, 2. Inequity of effects
- 17 - Leads to excessive shares held by a few individuals/corporations, when permits are sold as commodity: **Consolidation** **Social/Community** 2. Inequity of effects
- 18 - Fisheries "crisis" was faked by environmentalists. **Aversion to Government Regulation**???
- 19 - New regulations are only backed by the government and environmentalists, not the industry **Government Malfeasance** 5. Implementation/Information
- 20 - Hurts small boats more than big boats **Small defined by # of permits and capital, not so much size of vessel.** Agreed, but this is a common response (word for word), especially in Pt. Judith, where a perception is that the smaller day boats will be impacted more than the larger vessels of the offshore fleet. When I coded, I used this response when fishermen referred to the size of their vessel and business (small owner/operator). **Inequity of effects** 2. Inequity of effects
- 21 - Allocations do not account for range shifts in stock biomass (no cod allocation for SNE) **Allocation Standards** 1. Standards
- 22 - Don't know enough about how they will work to really say. **Implementation/Information Issues** 5. Implementation/Information
- 23 - Create a divide among the fishermen in the catch share, and those who are not **Social/Community** 6. Social/Community
- 24 - Problem of landing more than your share, no regulatory discards. **Allocation Standards** 1. Allocation Standard, 9. Bycatch Concerns
- 25 - Inflate the price of permits, making it difficult for captains/crew to own allocation. **Allocation Standards and Profitability** 7. Profitability/Economic
- 26 - Managers admit mistakes, but have done nothing to fix them. **Government Malfeasance** 12. Fishermen/Manager divide (NMFS has ADMITTED to mistakes in calculating allocation, and has done nothing to correct them for fishing year 2010)
- 27 - Favor some ports more than others. **Inequity of effects** 2. Inequity of effects
- 28 - Will put some fishermen out of business, and crew members out of work. **Profitability and Social/Community** 7. Profitability, 6. Social

29 - The managers keep changing how sectors will work and it is different than what was originally proposed. **Implementation/Information Issues** 12. Fishermen/Manager divide

30 - High grading. Fishermen will land only the best quality fish, while the rest become discards. **Bycatch**

31 - It is too much regulation. **Aversion to Government Regulation** 12. Fisherman/Manager **Divide**

32 - Stop repairing boat (because of less income), fisheries become more dangerous. 11. **Inadequacies**

33- Catch shares fail to reward skill of crew, and will hurt the crew more than the owners. 2. **Inequity**

34 - Too much uncertainty. No one knows how sectors will play out. **Implementation/Information Issues** 5. **Implementation**

35 - Too many fishermen in the business do not know enough about how sectors actually work. **Implementation/Information Issues** 5. **Implementation**

36 - If you do not join now, then you have sit out for a full year. 11. **Inadequacies**

37 - Too many boats in the sector for it to actually work. 1. **Allocation standard, 11. Inadequacies**

38 - Pressured into joining ("gun to head"). **Implementation/Information Issues** 5. **Implementation**

39 - Had to change fisheries to stay a fishermen (Gear Change) (Will put pressure on other stocks as they become targeted) *find int and change to 14 **Ecological** 8. **Ecological, 6. Social/Community**

40 - Favors fishermen who did not engage in stewardship when stocks were depleted. 2. **Inequity**

41 - Violation of National Standard #4. **Government Malfeasance** 11. **Inadequacies**

42 - Forced to enter into a binding contract with other fishermen that I do not know. **Social/Community** 6. **Social**

43 - Ploy to legally put fishermen out of business. **Government Malfeasance** 7. **Profitability**

44 - Hook Sector gets an unfair advantage. **Inequity of effects and Allocation Standards** 1. **Allocation standard, 2. Inequity**

- 45 - Besides advantage of safety, everything about catch shares is bad. **Aversion to Government Regulation**
- 46 - Science used to calculate TAC is wrong. **12. Fishermen/Manager divide**
- 47 - Allocations will not be high enough across species to fish effectively. **1. Allocation standard**
- 48 - Quotas are unnecessary **Aversion to Government Regulation** **11. Inadequacies**
- 49 - Only benefits Canadians. **Profitability** **7. Profitability**
- 50 - Concern over how closed areas will be managed. **Implementation/Information Issues** **11. Inadequacies, 5. Implementation**
- 51 - Catch share system is too expensive to manage. **Profitability** **11. Inadequacies**
- 52 - Could lead to fishermen all fishing in the same area, leading to economic and environmental inefficiencies. **Profitability and Ecological** **7. Profitability, 8. Ecological**
- 53 - Historically, government's management plans have not worked. **Aversion to Government Regulation**
- 54 - Possible seasonal closures. **11. Inadequacies**
- 55 - They will lower bycatch even further. **9. Bycatch**
- 56 - More monitoring. **12. Fishermen/Manager divide**
- 57 - Prevent new fishermen from entering (because have no catch history)(this is very similar to 25) **6. Social**
- 58 - More Bureaucracy leads to inefficiency (very similar to 31) **Aversion to Government Regulation**
- 59 - Could disrupt supply of fish (quotas fished out quickly, or large quotas lead to volatile prices) **Profitability** **7. Profitability**
- 60 - Will expose landings and lead to more publicity of good fishing grounds. **Inequity of effects** **2. Inequity of effects**
- 61 - Previously only used catch shares to manage single species. Do not know how a multi-species catch share will play out. **Implementation/Information Issues** **5. Implementation**
- 62 - Favors big boats, which have larger impact on environment and stocks. **Should this be just "favors big boats"?** **I don't think so - the point is that bigger boats do more damage per unit of fishing effort** **Ecological and Inequity of effects** **2. Inequity, 8. Ecological**

- 63 - Scallop fishermen were required to have a groundfish permit. Meaning during the catch history years, they were not landing any groundfish, and will get no allocation. Allocation Standards 1. Allocation
- 64 - Does not address problem of bycatch. (Some fishermen feel that there will be illegal bycatch when small quotas are fished out) Bycatch concerns 9. Bycatch
- 65 - Leads to more imported fish. Profitability 7. Profitability
- 66 - Government does not care about the about the people in the fishing industry. Government Malfeasance 12. Fishermen/Manager divide
- 67 - Does not reward skill or "cowboy" aspect. Inequity of effects and Social/Community 6. Social
- 68 - Sectors may act as cartels and fix prices. Profitability 7. Profitability
- 69 - NMFS is not responsive enough to manage fisheries. Aversion to Government Regulation (same as 53) 12. Fishermen/Manager divide
- 70 - Missing histories of some boats that determine allocations. Allocation Standards 1. Allocation, 11. Inadequacies
- 71 - People trading for certain quotas, then stocks might move. Personal quotas and stock shift. Allocation Standards 1. Allocation standards, 8. Ecological
- 72 - Could lead to "crop-sharing" behavior. "Turns independent businessmen into sharecroppers" (Related to 13) Social/Community and Profitability 7. Profitability, 6. Social
- 73 - Could lead to more price volatility Profitability 7. Profitability
- 74 - Implemented too fast without sufficient information Implementation/Information Issues 5. Implementation
- 75 - Fish populations are still increasing - why fix what isn't broke. Aversion to Government Regulation 12. Fishermen/Manager divide
- 76 - Makes for ease of regulation, more jobs for government and less jobs for fishermen. Government Malfeasance 12. Fisherman/Manager divide
- 77 - Not enough quota Allocation Standards 1. Allocation
- 78 - Current regulations are pushed through by oil companies to gain drilling rights Government Malfeasance ???
- 79 - Too high a reduction of Pollock quota Allocation Standards 1. Allocation, 11. Inadequacies
- 80 - Unfair fines and penalties Profitability 7. Profitability, 11. Inadequacies

- 81 - Too high a reduction of Yellowtail quota **Allocation Standards** 1. Allocation, 11. Inadequacies
- 82 - Fish swim together and allocations do not recognize that (such as cod and haddock). **Allocation Standards and Bycatch concerns** 1. Allocations, 9. Bycatch
- 83 - Against monitoring in the form of observers or cameras. **Aversion to Government Regulation**
- 84 - Managers expectations of what stocks can recover to are too high. **Ecological** 12. Fishermen/Manager divide
- 85 - People will lose a local and direct connection to fish and fishermen. **Social/Community** 6. Social
- 86 - Environmentalists want fishermen out of business, they want fish to come from aquaculture. **Government Malfeasance**
- 89 - "Most fishermen don't think it will work."
- 90 - The current management system is working fine, don't need catch shares. **Aversion to Government Regulation** 12. Fishermen/Manager divide
- 91 - Takes away from Maine's fishing culture where you can work your way into the fishery **Social/Community** 6. Social
- 92 - Eliminates access for sons to enter the fishery **Social/Community** 6. Social
- 93 - Rich get richer, poor get poorer **Inequity of effects** 2. Inequity
- 94 - Like the idea but not the way they are going about it **Implementation/Information Issues** 5. Implementation
- 95 - Catch shares are OK for hook and trap fisheries but don't work in indiscriminate fisheries like dragging **Inequity of effects** 11. Inadequacies
- 96 - Not enough quota to make a living/run a business **Allocation Standards** 1. Allocation
- 97 - Promotes fishing by biggest boats, leading to increased mortality than if TAC fished by smaller boats **Inequity of effects and Ecological** 2. Inequity, 8. Ecological
- 98 - The only way to have enough quota is to be overleveraged **Allocation Standards** 1. Allocation, 7. Profitability
- 99 - Profits will be drained by owners of quotas **Profitability** 7. Profitability
- 100 - High entrance costs destroys ability of individual to be successful. **Allocation Standards** 11. Inadequacies

- 101 - Whole ecosystem gets trashed **Ecological** 8. **Ecological**
- 102 - May decrease profits of shoreside businesses. **Profitability and Social Community** 7. **Profitability, 6. Social**
- 103 - High cost of management fees and observers **Profitability** 11. **Inadequacies**
- 104 - Fishermen are not organized enough to manage and trade (quota) effectively **5. Implementation**
- 105 - Jigging and gill netting get hurt the most even though they are the most environmentally friendly. **Inequity of effects** 2. **Inadequacies**
- 106 - People with \$ will get all the allocation **Inequity of effects and Allocation Standards** 1. **Allocation**
- 107 - Confusing having some species regulated with catch shares and some with Days-At-Sea **Implementation/Information Issues** 11. **Inadequacies**
- 108 - Small boats will be forced out with no way back in. **Inequity of effects and Profitability** 2. **Inequity, 7. Profitability**
- 109 - No stewardship is created, won't stop pulse fishing **Ecological** 8. **Ecological**
- 110 - Doesn't account for fact that DAS and catch shares are apples and oranges: if you have no history, you have no allocation **Allocation Standards** 1. **Allocation**
- 111 - Catch shares preserve effort, not fish - ecosystem based management would be better **Ecological** 8. **Ecological**
- 112 - Loss of baseline means quota will shift to big boats **Inequity of effects** 1. **Allocation**
- 113 - Exact opposite of environmental stewardship (same as 101?) **Ecological** 8. **Ecological**
- 114 - Can't work your way into the industry anymore **Similar as (57)** **Social/Community** 6. **Social**
- 115 - Unfair to those who bought permits based on horsepower and length, not DAS - no history, permits are useless **Allocation Standards and Inequity of effects** **Catch Share Inadequacies and Inequity**
- 116 - Don't see how it would help, the way closing spawning grounds or reducing drag size would **Ecological****Ecological**
- 117 - I got a groundfish permit to hook, don't have enough history to get quota **Allocation Standards** **Catch Share Inadequacies**

118 - It's not about fish conservation, just the government tracking money **Government**
Malfeasance Fishermen/Manager Divide

119 - It's driving the fishing industry out **Social/Community and Profitability** Social/Community

120 - I bought permits under DAS but now they are no good **Catch Share Inadequacies/**
Allocation

121 - People who fish as crew have not history **Allocation Standards and Profitability**Inequity
and Allocation

122 - Bad for fishermen without DAS (like 117) **Allocation Standards**Inequity

123 - Unfair to small boats (like 108)And (20) **Inequity of effects**Inequity

124 - Out of control, political, throwing darts at a dart board **Government**
Malfeasance Fishermen/Manager Divide

125 - Government likes big business, independent operators are thrown out **Aversion to**
Government Regulation Fishermen/Manager Divide

126 - Will require new infrastructure for regulation and enforcement/will be expensive
Implementation/Information Issues and Profitability Implementation/Profitability

127 - Fishermen should make decisions, not government **Aversion to Government**
Regulation Fishermen/Manager Divide

128 - Won't help the fish (like 101, 113, 118) **Ecological**Ecological

129 - It will take the fun out of the auction (because you'll know prices before hand) **Aversion to**
Government Regulation/ChangeProfit

130 - It will help some people or places but others will get screwed **Inequity of effects**Inequity

131 - Liked DAS better **Aversion to Government Regulation/Change** Favors current regulation

132 - Reduces herring available for lobster bait

133 - Doesn't work at all for stop seining (herring industry has two gears: purse and stop seines)
Catch share regulation/Design inadequacies

134 - Cost of enforcement **Profitability**Profitability

135 - Grossly unfair to small and mid-sized boats that fished for quality not quantity **Inequity of**
effects and Allocation StandardsInequity/Allocation

136 - Reduces local management, concentrates power at federal level **Aversion to Government**
Regulation/Change 12. Fisherman/Manager divide

137 - Only one permit left from Port Clyde east to Canadian border Allocation Standards Social

138 - Nets are not selective. Once you reach quota on one species, you have to stop fishing for all Allocation Standards Catch share regulation/Design inadequacies / Allocation standards

139 - We can catch our entire quota for pollock in one tow Allocation Standards Catch share regulation/Design inadequacies / Allocation standards

140 - Quotas are really low Allocation Standards Catch share regulation/Design inadequacies

141 - Allocation is based on past data; quotas don't match current species mix Allocation Standards Catch share design inadequacies

142 - Only two fishermen left in our area - is that enough for a sector? Allocation Standards Information Issues (lack of)

143 - No good if you are in the common pool Inequity of effects 11. Catch Share Regulation/Design Inadequacies

144 - Skeptical about it working - check back in a year Aversion to Government Regulation/Change Implementation/Information Issues

145 - I bought permits from an area with a different species mix (e.g., yellowtail don't occur here) Allocation Standards 11. Catch Share Regulation/Design Inadequacies

146 - Based on past catch records, Maine stocks devastated (by others) so Maine fishermen end up with nothing Allocation Standards and Inequity of effects 11. Catch Share Regulation/Design Inadequacies

147 - Maine fishermen have been diversified, don't have big numbers like the full time guys Inequity of effects Allocation Standards and Inequity of effects Inequity

148 - Getting rid of 2:1 counting of DAS will open up inshore to heavy fishing again (Mass. fleet will be back) 11. Catch Share Regulation/Design Inadequacies

149 - With little allocation, we can't fish our own grounds but others can Allocation Standards Allocation

150 - Can't make good business decisions because things are changing too fast Implementation/Information Issues Profitability/Economic

151 - Corporate boats owned by doctors and lawyers are pushing individual owners out Inequity of effects Inequity

152 - Making changes too fast, system needs to catch up Implementation/Information Issues Implementation

153 - Increased unemployment Profitability/Economic and Social/Community Profitability/Economic and Social/Community

155 - Since groundfish are not primarily targeted species, it will be more cost effective to lease permit rather than change gear to target groundfish and will not make groundfish trips.

(Scalloper) Inequity of effects Profit

156 - Could lock out buyers depending on where observers are stationed on land. Inequity of effects Inequity

157 - Restrains trade and buyers ability to buy. Profitability/Economic Profit/Economic

158 - Shouldn't be a dealers responsibility to manage a sector, but those who do get an unfair advantage. Inequity of effects Inequity of effects

Annex 5:

This annex presents the responses of the respondents to selected questions and the grouping of the responses.

Q6 - Suggest ways to address concerns/disadvantages about catch shares? (The group into which each response was placed is highlighted).

- 1 - Better, improved Science **Science and information collecting** Science and information
- 2 - Improve communication between managers (NMFS) and fishing industry
Communication/Information Sharing Communication/Information Sharing
- 3 - Stay with DAS **Different Management System** Keep current regulatory system in place
- 4 - Use Dealer monitoring, not Dockside monitoring **Monitoring** Monitoring and keep current regulations in place
- 5 - NEFMC present a viable common-pool option that won't put fishermen out of business
Allocation Changes Allocation
- 6 - Allow all Sector members to choose years used as the baseline for their allocation, just like the Hook Fishermen did. **7. Allocation Changes** Allocation
- 7 - Do not know enough about catch shares to say. **Communication/Education**
- 8 - Go to an (equitably divided) ITQ system **Different Management System** Different management system/ITQ
- 9 - Increase Accountability of fisheries managers **Accountability**
- 10 - Craft management that can account for shifts in stock biomass **Allocation Changes** Allocation Changes
- 11 - Use Vito Giacolone's Point System **Different Management System** Different Management System
- 12 - Allow the DAS clock to run at the dock. (When you catch more than the trip limit, bring it in anyways and burn a day tied up). **Different Management System** Keep current regulations
- 13 - Do not push an agenda through in one year, allow time for regulation to be implemented.
Implementation Implementation
- 14 - Allocations to historic ports, historic vessels, and lifelong fishermen who are now being pushed out of this business. **Allocation Changes** Allocations

- 15 - Use more than capital as the standard of entry, factor in involvement in fishery **Allocation Changes** Industry entrance and exit
- 16 - Allocate shares by areas fished, not by species or history. **Allocation Changes** Allocation changes
- 17 - Reduce the amount of regulations. **Different Management System** Different management system
- 18 - Use a larger mesh size. **Gear** Gear
- 19 - Create an allocation design that will be fair for small boats. **Allocation Changes** Allocation
- 20 - Eliminate entry fee to joining sectors. **Slight Modifications to Sectors** Slight modification to sectors
- 21 - Need to get better education and organization of how catch share regulations work, out to fishermen. **Communication/Information Sharing** Communication/Information Sharing Education
- 22 - Stronger incentives for joining. **what kind of incentive** Subsidy/Incentives
- 23 - Allocate Regional quotas across gear types. **Allocation Changes** Allocation changes
- 24 - Create catch shares for groundfish *and* monkfish at the same time. **Implementation** Implementation and Different management system
- 25 - Need to be better at managing discard problem. Too many dead fish being thrown back. **Bycatch** Reduce Bycatch
- 26 - Implement buy back programs for boats and permits. **Subsidies/Incentives and Permit buying and trading** Subsidy
- 27 - Impacts and concerns of crew members must be considered. **Communication/Information Sharing/Education** Communication/Education
- 28 - Give everyone the same license, allowing them to fish for 12 hours per day, so nets will only be in the water 1/2 the year. **Different Management System** Different Management System
- 29 - Paint 1/2 the boats red and the other 1/2 blue. Red boats fish on odd days and blue boats fish on even days. **Different Management System** Different Management System
- 30 - I don't have any suggestions because it doesn't matter what I say. **Implementation** Communication/Education
- 31 - Do not implement regulations created by Pew and EDF. Listen to those in the industry. **Communication/Information Sharing** Increased industry influence

- 32 - Allocate based on fishing effort between 1996-2006 across all species, not specifically groundfish. Allocation Changes Allocation Changes
- 33 - Create laws to protect fish prices, just like Milk subsidies. Market/Trade Regulations Market/Trade Regulations
- 34 - NMFS needs to revisit the Magnuson-Stevens Act, management is fundamentally flawed Different Management System 18. Revisit Federal Fisheries/Environmental Policies
- 35 - Account for reduction in stock biomass by increasing populations of marine mammals. Science and information collecting 18. Revisit Federal Fisheries/Environmental Policies and Science and Information collection
- 36 - Revisit the MMPA, stop putting healthy marine mammal populations ahead of fishermen. Different Management System 18. Revisit Federal Fisheries/Environmental Policies
- 37 - Allocate based on the boats age, and reward small horsepower or gear type. Allocation Changes Allocation
- 38 - Have State and Federal Representatives at Sector meetings. Increased Industry Influence Information/Education
- 39 - Implement Sectors as a pilot project. Make membership voluntary, and select through a lottery. Implementation Process Implementation
- 40 - Do not use Hook Sector as an example of how Sectors work, the Hook Sector only deals with 2 species, not 15 in the multispecies complex. Different Management System Implementation
- 41 - Subsidies for fishermen who wish to remain in the business until stocks recover. Subsidies/Incentives Subsidies
- 42 - Subsidies to help pay for new gear that will meet regulations. Subsidies/Incentives Subsidies
- 43 - Do not use buy back program. Permit buying and trading No subsidies
- 44 - Raise the quota. Allocation Changes Allocation changes
- 45 - Create an equitable bycatch system for mobile-gear fishermen. (Can't catch haddock w/o some cod) Bycatch Allocation (need larger allocations to land "bycatch" under sectors.)
- 46 - Ensure quotas are high enough to be profitable for everyone. Allocation Changes Allocation
- 47 - Make fines proportional to company size, otherwise they unfairly hurt the little guy and big companies can break the rules. Slight Modifications to Sectors Monitoring (fines in question came under DAS, and were a dealer monitoring issue.)

- 48 - Open up closed areas equally, and not just to Hook Sector. Slight Modifications to Sectors
Implementation (Hook already has sector)
- 49 - Enact a tariff or embargo on imported fish. Market/Trade Regulations Market/Trade
regulations
- 50 - Have environmental groups buy/lease permits and give money to fishermen. Will reduce
overfishing and financially support fishermen. Market/Trade Regulations Market/Trade
Regulations
- 51 - Regulations must be consistent so fishermen can plan and make decisions for future.
Communication/Information Sharing/Education Communication/Education
- 52 - Dissolve or subsidize dockside monitoring, so fishermen do not have to pay for it.
Monitoring Monitoring
- 53 - Create coordinated overall plan, not like current "piecemeal" plan. Implementation
Process Implementation
- 54 - Provide better "marketing" training to Sector Managers. Communication/Information
Sharing/Education Communication/Education
- 55 - Open up fluke restrictions. Allocation Changes Allocation Changes
- 56 - Reduce herring fishery, groundfish need the herring to fully recover. Allocation
Changes Allocation Changes
- 57 - Rethink bycatch so less goes overboard. Bycatch Bycatch
- 58 - Fisheries managers should be volunteer fishermen. Increased Industry Influence Increased
Industry Influence
- 59 - Give fishermen representation when regulations are being created. Increased Industry
Influence Communication/Education
- 60 - Fishermen coordinate when to fish Communication/Information Sharing/Education
Communication/Education
- 61 - Have allocations that reward boats which had less of an impact on stocks and
environment. Allocation Changes Allocation
- 62 - Government should have no involvement in regulations. Different Management
System Communication and Education/Different Management System
- 63 - Fix inefficiency and ineffectiveness of Game Wardens. Monitoring Monitoring

64 - Subsidies for fishermen who made investment decisions based on previous management.

Subsidies/Incentives Subsidies

65 - Quicker response to regulations by government. Slight Modifications to

Sectors Implementation

66 - Catch shares do not affect us (scallop fisherman), so it doesn't matter what I say. Communication/Education

67 - Allow quota trading and create compatible website. Systems for cooperation quota sharing Quota sharing

68 - Permit banks to prevent consolidation and corporate buyout. Permit buying and trading Permit Bank

69 - Create method to prevent boat/quota fire sale so people get what they deserve. Market/Trade Regulations Market/Trade Regulations

70 - Publicize how the common pool will be managed. Communication/Information

Sharing/Education Communication/Information Sharing/Education

71 - Install cameras onboard instead of paying for observers. Also safer. Monitoring Monitoring

72 - Notification when fish is imported, so US fishermen do not flood market. Market/Trade

Regulations Market/Trade Regulations

73 - Create system that allows quota to be bought easily Industry entrance and exit/ Permit buying and trading Permit buying and trading

74 - Let the fishermen regulate themselves. Different Management System Different Management System

75 - Raise the Pollock quota Allocation Changes Allocation

76 - Magnuson-Stevens act is inherently flawed - 10 year rebuilding not enough

flexibility. Slight Modifications to Sectors 18. Revisit Federal Fisheries/Environmental Policies

77 - New Hampshire needs its own permit bank. Industry entrance and exit/ Permit trading Permit Bank

78 - New Hampshire needs more support from its elected officials. Increased Industry Influence Increased Industry Support

79 - Do not base dogfish management decisions based on landings data, use actual science.

Landings dropped because there was no profit in going fishing for them. Allocation Changes and Science and information collecting Allocation Changes and Science and information collecting

- 80 - Make regulations with quantitative and qualitative data **Slight Modifications to Sectors**
Different management system
- 81 - Managers need to update fishermen on the status of closed areas
Communication/Information Sharing/Education **Communication/Information**
Sharing/Education
- 82 - Need consistency of regulations throughout range of species (even internationally) **18.**
Revisit Federal Fisheries/Environmental Policies
- 83 - Limit consolidation of TAC by corporations **Industry entrance and exit/ Permit trading**
Allocation and Permit trading
- 84 - Protect coastal ecosystems where species spawn and have nursery areas by requiring owner-operators there (allow consolidation offshore) and limiting mortality with limits on gear and catch **Industry entrance and exit/ Permit trading** **Industry entrance and exit/ Permit trading**
- 85 - Put a percentage of the TAC into a pool for new entrants (e.g., tax shares sold at 25%, put into common pool for small harbors) **Industry entrance and exit/ Permit trading** **Industry entrance**
- 86 - Need mechanism for new entrants and for exits **Industry entrance and exit/ Permit trading** **Industry entrance**
- 87 - Organize Maine communities to fish in state waters **Systems for increased cooperation** **Cooperation and Informaiton/Education**
- 88 - Fund more collaborative research **Science and information collecting** **Science and infomation collecting**
- 89 - Collect data on effect of a regulatory change before implementing another change **Science and information collecting** **Science and info collecting**
- 90 - Do not use new boat for surveys **Science and information collecting** **Science and information collections**
- 91 - Use \$1 million allocated Maine DMR for small boats (which are more important to coastal infrastructure than big boats) **Allocation Changes** **Subsidies/Incentives**
- 92 - Should be by area (different from 16) **Slight Modifications to Sectors** **Slight Modifications to Sectors**
- 93 - Should be something for everyone **Slight Modifications to Sectors** **Allocation**
- 94 - Go back to when fishery worked and ask why **Different Management System** **Different management system**

- 95 - Need to deal with technology = biggest issue Gear?? Communication/Education
- 96 - Give everyone an equal share of the quota Allocation Changes Allocation
- 97 - Don't allow transfers Permit buying and trading Permit trading
- 98 - Eliminate NMFS Revisit Federal Fisheries/Environmental Policies
- 99 - Don't know.
- 100 - People who don't use their licenses need to give them up Permit buying and trading Permit buying
- 101 - Need to wait and see how they work ????? Implementation and Communication
- 102 - Talk to fishermen for ideas Increased Industry Influence Increased Industry Influence
- 103 - Reward fishermen who are good businessmen, not dubs via Allocation? Subsidies?
- 104 - Don't allow corporations to own quota Consolidation/Permit trading Allocation and Permit trading
- 105 - Allow everyone to fish until TAC is met Different Management System Different management system
- 106 - Help smaller guys Subsidies/Incentives Subsidies/INcentives
- 107 - Reduce government control; use system like lobster zones, people who live in the area control it Different Management System Different management system
- 108 - No way to address Communication/Education and Revisit Federal Fisheries Policy
- 109 - Sectors have potential - since they have the ability to make decisions locally System for cooperation
- 110 - Need new monitoring strategy Monitoring Monitoring
- 111 - Through area management Different management system
- 112 - Keep spring spawning closures and gear requirements (e.g., Nordmore grate) Slight Modifications to Sectors and Gear Gear and Implementation
- 113 - Require owner-operators, like lobster fishery Permit buying and trading Permit buying
- 114 - Equal distribution of quota Allocation Changes Allocation
- 115 - Address issues through local fisheries association Increased Industry Influence Increased Industry Influence and Communication
- 116 - Allow fishermen to see how the sectors play out rather than lock them out if they don't join right away. Implementation Implementation
- 117 - Increase flexibility. Slight Modifications to Sectors Implementation and modification

Annex 6:

NOAA's Draft Catch Share Policy is:

“ To achieve long-term ecological and economic sustainability of the Nation's fishery resources and fishing communities, NOAA encourages the consideration and adoption of catch shares wherever appropriate in fishery management and ecosystem plans and amendments and will support the design, implementation, and monitoring of catch share programs” (p.ii).

The draft policy further states features of a catch share program:

“The MSA sets forth a number of criteria for consideration in the design of catch share programs. NOAA recommends Councils follow this guidance and pay particular attention to the following features in designing their catch share programs:

Specific management goals: All fishery management programs, including catch shares, should identify specific goals for management.

Transferability: Councils should thoroughly assess the net benefits of catch share transferability.

Review Process: Councils should periodically review all catch share and non-catch share programs. The intent is to ensure that management goals are specified, measurable, tracked and used to gauge whether a program is meeting its goals and objectives.

Distinctions Among Sectors: No fishery or sector (e.g., commercial or recreational) is obligated to adopt catch shares under this policy. Councils should consider the appropriateness of catch share programs and decide which, if any, sectors may benefit from their use.

Fishing Community Sustainability: NOAA encourages Councils to take advantage of the special community provisions in the MSA to help ensure the sustainability of fishing communities, including the preservation of working fishery waterfronts, fishery infrastructure, diverse fishing fleets, and resource access.

Royalties: NOAA will assist Councils if and when they determine that it is in the public interest to collect royalties in connection with the initial or subsequent allocations in a limited access privilege program” (p.ii-iii).