



FISHERIES
Leadership & Sustainability
FORUM

CATCH SHARE WORKSHOP

MARCH 16-18, 2010

SUMMARY REPORT

Hosted by the
Mid-Atlantic Fishery Management Council
and the
Fisheries Leadership and Sustainability Forum
in cooperation with the
Atlantic States Marine Fisheries Commission
and the
National Marine Fisheries Service

Preface

On March 16-18, 2010 in Williamsburg, VA, the Mid-Atlantic Fishery Management Council (MAFMC) and the Fisheries Leadership and Sustainability Forum (FLSF) hosted an educational workshop on catch share programs in cooperation with the Atlantic States Marine Fisheries Commission (ASMFC) and the National Marine Fisheries Service (NMFS). Participants included MAFMC members, MAFMC staff, MAFMC Advisory Panel representatives, ASMFC representatives, MAFMC Scientific and Statistical Committee (SSC) representatives, as well as leadership from the New England Fishery Management Council, the South Atlantic Fishery Management Council, and NMFS. As with all MAFMC meetings, the workshop was open to the public, and there were several sessions reserved for public comment. The agenda, panelist biographies, and presentations from the workshop are provided as an appendix to this summary report. Additional materials related to the workshop, including briefing materials and video recordings of presentations, are available on the Council's website, <http://mafmc.org/>, or on the FLSF's website, <http://www.fisheriesforum.org/>.

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Opening Remarks

Catch share programs have recently been identified as a top priority for fisheries management by the National Oceanic and Atmospheric Administration (NOAA), which has developed a national policy on catch shares. In response to this recent policy initiative and the high level of interest in these programs, the MAFMC determined that it would be beneficial to learn as much as possible about catch shares in an educational workshop setting. The Mid-Atlantic Fishery Management Council (MAFMC) and the Fisheries Leadership and Sustainability Forum, in cooperation with the Atlantic States Marine Fisheries Commission (ASMFC) and the National Marine Fisheries Service (NMFS), planned the workshop to provide educational opportunities for members and staff of the MAFMC and ASMFC so that they can effectively evaluate any catch share programs that are considered in the future.

The Mid-Atlantic catch share workshop began as Rick Robins, Chairman of the MAFMC, welcomed participants and panelists and introduced the format of the workshop. The workshop combined plenary sessions and breakout sessions to encourage discussion between panelists and participants. Panelists were invited from various geographic regions that currently utilize or are developing catch share programs, including parts of the United States, Canada, Australia, and New Zealand, to share experiences and lessons learned with participants. The sessions focused on numerous topics related to catch share programs, including case studies, data collection and monitoring, recreational fisheries, economic outcomes, bycatch reduction, allocation considerations, and market forces. Because the MAFMC manages five species jointly with the ASMFC and two species jointly with the New England Fishery Management Council, the workshop also included a plenary discussion on inter-jurisdictional issues. Several opportunities were reserved for public comment and input during the meeting.

The objectives for the Mid-Atlantic catch share workshop were identified as:

- To learn from and interact with a diverse group of panelists with experience in catch share programs
- To gain an understanding for the management potential of catch share programs as a management tool as well as the range of concerns associated with their design and use in management
- To anticipate future management challenges and opportunities associated with catch share programs at the Council, ASMFC, and state levels

During the opening remarks, Vice-Chair Lee Anderson suggested to participants that catch shares may or may not be the best solution depending on the characteristics of a fishery, but they merit consideration as a management tool.

Similarly, after Executive Director Dan Furlong reviewed the fisheries managed by the MAFMC¹, he asked participants to keep an open mind regarding the utility of catch share programs for managing Mid-Atlantic fisheries. He also reminded workshop participants that the

¹ Copies of slides from all presentations can be found in Appendix 3.

Mid-Atlantic region instituted the first catch share program in the U.S. for the surf clam and ocean quahog fishery in 1988, as well as one of the most recent programs for tilefish in 2010.

After the opening remarks, Mark Holliday, Director of the NOAA Fisheries Office of Policy, provided an overview of catch shares, focusing on design elements and policy considerations. There are currently fifteen catch share programs in place, managed by six of the eight regional councils. He reviewed current challenges to managers that could potentially be addressed with catch shares. Finally, he encouraged participants not to evaluate catch shares in isolation or to compare them to a “perfect” scenario but rather to make the comparison between catch shares and current or likely management scenarios.

Plenary Session #1: Case Studies

Panelists

The first plenary session included presentations on catch share programs in three diverse geographic regions, including Alaska, Gulf of Mexico, and Australia. The panelists included:

- Jane DiCosimo – Senior Plan Coordinator, North Pacific Fishery Management Council
- Bob Gill – Vice Chair, Gulf of Mexico Fishery Management Council
- David Galeano – Senior Economist, Australian Fisheries Management Authority (AFMA)

ALASKA: Jane DiCosimo began with an overview of categories of catch share programs in Alaska fisheries, including harvester individual fishery quotas (IFQs), community development quotas (CDQs), joint harvester IFQ/individual processor quota (IPQ) programs, and fishery cooperatives. DiCosimo emphasized the importance of identifying the goals of a catch share program, while recognizing that there can also be competing interests. One of the major lessons learned in Alaska, exemplified by the diversity of these programs, has been the importance of selecting design features customized for each fishery, participant, and management objective.

DiCosimo went on to describe the halibut and sablefish commercial IFQ program in greater detail. The first of Alaska's IFQ initiatives, this program transformed the halibut fishery from a 24-hour derby to a nine-month fishery designed to promote efficiency and markets, while maintaining community and fleet compositions. DiCosimo elaborated on the perceived pros and cons of this catch share program, and outlined specific social and management goals for the halibut and sablefish IFQ program. She then described elements of the program created to achieve specific goals. Examples included quota share blocks intended to preserve entry-level opportunities, and vessel categories to maintain the fleet profile. She also discussed enforcement, monitoring, and compliance requirements. Since the inception of the program, total allowable catch (TAC) has not been exceeded, while catch per unit effort (CPUE) has increased and discards have decreased.

GULF OF MEXICO: Bob Gill described the red snapper IFQ program, which was initiated in 1993 but not implemented until 2007. The impetus for developing an IFQ program began in the early 1990s when dramatically reduced seasons created a derby fishery.

Gill discussed characteristics of the program including eligibility, allocation, ownership caps, and transferability. He also described impacts on the fishing industry, including consolidation, market stability, and participants' perception of the program. He reported that most participants are now supportive of the program, and since the IFQ was implemented, the commercial sector has not exceeded its TAC. The Gulf of Mexico Council recently created a second reef fish IFQ program with species-specific share categories for red grouper, gag grouper, and tilefish as well as aggregate categories for shallow water grouper (SWG) and deep water grouper (DWG). An unusual feature of this program is a multi-use allocation; a quota set-aside intended to reduce discards that can be used to land gag or red grouper.

Gill advised participants to keep stakeholders involved throughout the development of a catch share program. He cautioned that it is difficult to make post-implementation changes and that managers should be prepared to invest time in designing a catch share program. Finally, he

advocated the use of a referendum, which is required in the Gulf of Mexico but not in the Mid-Atlantic, as a positive way to engage stakeholders in the process and increase industry support.

AUSTRALIA: David Galeano gave a broad overview of the role of IFQs in Australian fisheries management. AFMA is comparable to NOAA and manages Commonwealth fisheries in Australia's exclusive economic zone.

Australian Commonwealth fisheries policy focuses on a set of stated objectives that include sustainability, accountability to the public, cost effective management, and maximum economic returns (i.e. profits). Since 1989, the Australian Government has recognized ITQs as the preferred fishery management tool. AFMA utilizes ITQ programs in five fisheries and is currently implementing ITQ in four more fisheries. This will result in the majority of the gross value of production from Commonwealth fisheries managed with ITQs.

Galeano discussed the southern and eastern scalefish and shark fishery, a multispecies fishery with multiple gear types. He explained that ITQs faced some initial challenges due to restrictions on trade of quota and TACs that were set too high. These issues have since been resolved, profitability has improved, and several stocks have rebuilt or are rebuilding. In conclusion, he stated that ITQs can be an effective management tool and a complement to input controls but are not a panacea.

Discussion

Participants observed that there are important differences between U.S. and Australian fisheries, including the industry's role in funding assessments in Australia. Many regions of the U.S. have large recreational components to fisheries in federal waters, while recreational fishing in Australia is far less significant in commonwealth waters and is primarily managed at the state level. Each of the panelists spoke briefly about the transferability of quota, in response to one participant's concern about the possibility that quota could be purchased and not fished.

Plenary Session #2: Data Collection and Monitoring

Panelists

Data collection and monitoring are critical to achieving accountability in a catch share system. The following two panelists provided insight into monitoring and data collection strategies in catch share programs in Alaska and British Columbia:

- Jessica Gharrett – Restricted Access Management Program, National Marine Fisheries Service (NMFS) Alaska Region
- Howard McElderry – Archipelago Marine Research

ALASKA: Jessie Gharrett provided an overview of data collection and monitoring across Alaska's diverse fisheries. Most data is now electronic and is supplied by industry records of retained catch, observer accounts of bycatch and discards, and vessel monitoring systems (VMS). Gharrett described the evolution of industry reporting methods from paper trip tickets to the current eLandings system. While previous systems involved tradeoffs between level of detail, timeliness, and complexity, the eLandings system accommodates all three criteria.

Catch share managed fisheries pose additional monitoring and observing requirements, which require coordination and shared responsibility, and a broader range of tools to facilitate real-time accounting, access to information, and compliance monitoring. While these tools can support a successful catch share program, they can also lead to higher costs associated with technical support and observer coverage. Gharrett explained that the success of a catch share program results in large part from industry trust and stewardship built on timely reporting and accessible data, shared responsibility, and responsive management; all of which provide a "level playing" field. Ongoing challenges include addressing program complexity, particularly from an enforcement perspective for regulations that might be considered "social engineering;" maintaining agency-industry dialogue; and providing adequate staffing and technology support.

BRITISH COLUMBIA: Howard McElderry described the evolution of data collection and monitoring in British Columbia's groundfish fishery. British Columbia combined six different targeted fisheries under a single management plan, transitioning from an unmanageable discard scenario into a fully integrated, individual vessel quota (IVQ) fishery with full mortality accounting and transferable quota.

In order to achieve this outcome it was necessary to design a monitoring system that would enable stock specific management, account for discards as well as catch, and facilitate individual accountability. Monitoring now includes a range of tools including 100% dockside monitoring, 100% at-sea monitoring (observer or video), and self-reported data by way of logbooks, sales slips, and hails. These multiple records can be crosschecked and audited for accuracy. McElderry explained that the current monitoring system was implemented in phases as new technology became available, and that the full suite of monitoring tools was not completed until 2006. Today, the industry supports these monitoring requirements because they provide timely, high-quality data; improve flexibility; and cultivate individual responsibility.

McElderry identified several elements, which contributed to the success of this monitoring system, including clearly definition of management principles, the burden of proof resting with industry, industry engagement with design, and funding and oversight of the monitoring

program. While catch share systems generally require stronger monitoring systems, he explained that catch shares enable development of monitoring systems because they align the incentives of fishermen and managers.

Discussion

Timely, high quality information is critical to the success of a catch share program. Data collection systems continue to evolve, improving the quantity, quality, and timeliness of information. Both panelists described how monitoring and data collection strategies can be tailored to meet the needs of a fishery, and can support specific biological, social, and economic goals such as full mortality accounting, owner-on-board provisions, and transferability of quota. However, a more complex catch share program creates correspondingly greater demands on data collection and monitoring. These systems require resources and staff support, which led to a discussion of funding and cost recovery. Jessie Gharrett clarified in the U.S., costs of implementation incurred by NOAA prior to the date of an effective final rule cannot be collected and that only the incremental costs of managing a catch share fishery are subject to cost recovery.

Improved data collection also introduces a new set of concerns. Both speakers addressed transparency and the confidentiality of data. Howard McElderry noted that the value of transparency is often newer to the fishing industry than to other areas of business. Managers are conscious that access to information is valuable to people for different reasons and at different points in the implementation of a catch share program. For example, Jessie Gharrett pointed out that landings data, which provides managers with information about a fishery, also constitutes valuable marketing data to the industry. Consequently, managers must find a balance and provide meaningful information about the performance of a fishery without revealing information that by law is confidential.

Plenary Session #3: Catch Shares and Recreational Fisheries

Panelists

The plenary session on recreational fisheries provided an opportunity for panelists and participants to examine interactions between recreational and catch share programs in two ways: the use of catch shares as a management tool for recreational fisheries and the interaction of a commercial catch share program with the recreational fishery. This session also allowed participants to reflect on differences between the management goals of commercial, for-hire and private recreational fisheries. One case study was presented on a recreational catch share program that was designed but not implemented in the Alaska region, and three panelists participated in a panel discussion. These speakers included:

- Jane DiCosimo – Senior Plan Coordinator, North Pacific Fishery Management Council
- Greg Sutter – Halibut charter captain, Alaska
- Rick Bellavance – President of the Rhode Island Charter and Party Boat Association
- Dick Brame – Atlantic States Fisheries Director for the Coastal Conservation Association

Case Study

ALASKA: Jane DiCosimo presented a case study on the Alaska for-hire halibut IFQ program. She began with an overview of a catch share program management alternative that was developed in 2001 for the fishery. This alternative was eventually withdrawn in 2006. To date, it remains one of the few examples of a catch share program developed for a recreational fishery.

Alaska's commercial halibut fishery has operated as an IFQ fishery since 1995. In the 1990s, growth of the for-hire halibut fishery and a corresponding increase in recreational landings prompted the North Pacific Fishery Management Council to consider limitations on the for-hire sector. The proposed for-hire IFQ program would have integrated the for-hire sector into the existing commercial halibut IFQ program and would not have affected private recreational or subsistence fishing. Although this alternative was not implemented, ten years later it is still a unique example and an opportunity to examine the basic considerations of a for-hire catch share program. DiCosimo discussed issues such as eligibility, allocation, monitoring and reporting requirements, quota caps, and new entrant set-asides for communities. She also discussed the transfer of quota between the commercial and for-hire sectors, a key element of a catch share program and one that is under Secretarial review. Under this proposed program, commercial IFQs may be transferred (leased) to for-hire charter businesses that hold limited entry permits, allowing the sector to increase its allocation and to be exempted from additional management restrictions in place to keep the sector's halibut harvests to its allocation.

Panel Presentations

The discussion of transferability between sectors continued with a panel featuring the different perspectives of leaders from the private and for-hire recreational fishing communities.

Greg Sutter presented an outline of a halibut quota "Pool Plan" developed by Earl W. Comstock for the Alaska Charter Association. In Alaska, a commercial halibut IFQ program has been in place and matured since 1995, and the guided recreational sector shares use of the resource. Capt. Greg highlighted that in Southeast, Alaska the guided recreational sector's allocation has experienced overages in its sector every year since the allocation's inception in 2003. The overages resulted from a Council allocation of 85 percent of the halibut to the commercial sector,

which left too few halibut to meet the modest annual growth in angler demand. This caused subsequent bag limit reductions, adversely impacted charter businesses and related tourism industries. Under the proposed "Pool Plan," quota is not held by an individual but by a nonprofit entity. The major objectives are to allow the guided recreational anglers in Alaska to increase their allocation by purchasing halibut harvest stamps, and the proceeds from the stamps would purchase commercial quota--rewarding them for their investment. The managed pool could use a variety of management tools to keep the amount of halibut taken within the allocation held in the pool each year. Thus, this proposal would achieve conservation goals, preserve public access, maximize the diversity of our charter fleet and create a market mechanism to compensate commercial fishermen when halibut is moved from commercial to recreational use.

Rick Bellavance provided an overview of a proposed voluntary fluke sector for the for-hire industry. Modeled after New England's groundfish sectors and other forms of fishing cooperatives, this program would allocate a portion of the recreational fluke (summer flounder) catch to a group of participants. Bellavance explained that while the for-hire sector is managed as part of the larger recreational sector, it has different needs. He noted the difficulties of operating a viable full-time business within the constraints of input measures, particularly seasonal closures and minimum size limits, which are used to constrain recreational effort and landings. Bellavance believes that the accountability of a catch share program could increase flexibility and benefit the resource as well as businesses and communities.

Dick Brame contributed a different point of view from the perspective of the private recreational sector. Brame described the unwillingness of some private recreational anglers to support catch share systems that they perceive as locking in existing allocation formulas. He explained that while commercial fisheries are managed for maximum sustainable yield and for efficiency, recreational fisheries are often managed for abundance and require access to maximize economic value. He supports the use of market mechanisms to determine allocation between sectors and believes that there should be further analysis of the value of catch to each sector consistent with producing the maximum benefit to the nation. Brame also suggested that states could explore the possibility of holding quota for private recreational anglers.

Plenary Session #4: Governance of Catch Shares: Inter-Jurisdictional Fisheries

Panelists

The plenary session on the governance of catch shares provided an opportunity for panelists and participants to explore the inter-jurisdictional nature of Mid-Atlantic fisheries and the opportunities or challenges that may arise with the use of catch shares in the region. Fisheries in the Mid-Atlantic are managed by states, the ASMFC, and the MAFMC, with federal regulations implemented by the National Marine Fisheries Service (NMFS). The consideration of inter-jurisdictional issues will be a key component of discussions for future catch share programs. In this session, there was one case study presented on Virginia's black sea bass catch share program. Following the presentation, a panel representing the MAFMC, ASMFC, and the Northeast Regional Office of NMFS shared thoughts on inter-jurisdictional issues. The presenters included:

- Jack Travelstead – Deputy Commissioner and Chief of Fisheries Management, Virginia Marine Resource Commission
- Rick Robins – Chair, MAFMC
- Bob Beal – Director, Interstate Fishery Management Program for the ASMFC
- Pat Kurkul – Regional Administrator, NMFS

Case Study

Jack Travelstead introduced the development and implementation of a state-based catch share program for black sea bass. Virginia's interest in a catch share program for sea bass stemmed from its earlier experiences with a similar program for its striped bass fishery. In the early 1990s, the striped bass fishery opened, and a small quota became available. Managers thought the quota would last three months, but the fishery closed in three days. Prices plummeted from \$2/pound to \$0.05/pound. The input control measures were not working, and administration was cumbersome. The striped bass catch share program that was developed to solve these problems was successful and remains in place today. Lessons learned with that fishery have now been applied to the black sea bass fishery.

In 2003, based upon the prior successful development of a catch share program for the striped bass fishery, Virginia's black sea bass fishermen requested that a similar catch share system be developed under state regulations for their fishery. The goals were to prevent quota overages, improve the economics of the fishery, improve equity between gear types, and prevent the race to fish. The fishery consists of directed and bycatch components. Each participant received a percentage share based on the landings history of the most recent five years (1997-2001). The directed fishery had greater requirements for eligibility than the bycatch fishery. The industry did have concerns about verifying landings because of discrepancies between the vessel trip reports and dealer reports. The program included a provision for hardship, allowed participation from outside of Virginia, and allowed for permanent or temporary transfers.

The Virginia Marine Resource Commission views the results as positive. The fishery consists of relatively the same number of individuals participating now compared to the initial allocation. Since the adoption of the catch share program, Virginia has never achieved full harvest of the quota. The management and administrative costs declined substantially. However, some

challenges remain. The quota has declined significantly across the entire coast, reducing the quota allocated to fishermen. If ASMFC chose to change the state-by-state quota system or if the MAFMC pursued a catch share program for federal waters, there could be consequences for Virginia's catch share.

Panel Presentations

Rick Robins began the panel discussion. The MAFMC faces a number of unique governance questions, which can lead to issues arising with jointly managed species. He suggested that the MAFMC and its management partners begin to discuss a range of governance approaches to the inter-jurisdictional implications of catch shares, and recommended a range of alternatives for purposes of discussion, including: 1. incremental development of catch share programs at the state levels; 2. development of a catch share program for just the federal section of the fishery; 3. development of a coordinated catch share program, combining both federal and state levels; and 4. joint development of an overarching set of standards for catch shares programs on the jointly managed species that would still preserve flexibility for the states. Each of these approaches would have different implications. As we look forward, the MAFMC needs to engage the ASMFC on the inter-jurisdictional considerations. The MAFMC has some significant complexities to work through, and the Council and its partners will benefit from anticipating these challenges and initiating a dialogue on these inter-jurisdictional questions.

Bob Beal shared views and current discussions at the inter-state level. The ASMFC does not have a catch share policy. Each state handles it individually, but the ASMFC has developed a working group to look at catch shares. Early discussions from this group suggest that they will not recommend one blanket approach for the states to adopt. There is some need for guidelines or sideboards because more consistency between states will facilitate interstate transfers. This is currently not available in the three state-based black sea bass ITQs (Virginia, Maryland and Delaware). Some of the states outside of these ITQ programs have asked the ASMFC if quota transfers are possible.

Pat Kurkul reflected that there are three important decisions to make: 1. decide on the goals, 2. make allocation decisions, and 3. decide how is it going to be monitored. The drivers for these decisions will be different on the state versus federal level. The challenge will be the complexity of the program. There are three regional fishery management councils on the east coast; the New England and Mid-Atlantic Fishery Management Councils, combined, manage a total of twelve states. The allocation criteria and program variability in these various regions can lead to questions regarding equity in programmatic decisions. On the benefits side, one state could get better agreement within the state than across the whole region. States will likely get better participant consensus. Smaller programs may be less administratively complex and better able to recognize and respond to local fishing practice. State programs can be more flexible and adaptable. Clearly, there are some opportunities that allow states to creatively use their markets. It is important to have some early discussions about setting common goals and objectives for new catch share programs.

Discussion

- NMFS would have a lot of problems using catch history prior to 1994.
- The Virginia black sea bass ITQ is much less costly to manage than non-catch share management.

- Stakeholder engagement is critical in the beginning and throughout consideration of a catch share program.
- We need to collectively understand that catch share programs have implications – coast-wide objectives and consistency come at the expense of state efficiency.
- States are interested in having flexibility.
- Some states may not be interested in catch share programs.
- There is a desire to have these conversations now to decide on a direction, rather than allow an ad hoc and inconsistent approach that may limit options in the future.

Summary of Public Comments

The workshop included public comments both formally in plenary and informally in breakout sessions. Members of the public that attended consisted of between five and ten fishermen and/or individuals representing fishing interests in addition to several individuals involved in marine resources management and/or education.

The following two concerns were the primary concerns that were raised several times during public comment opportunities during the meeting.

1. It can be very difficult to make sure that allocation decisions are made in a fair and equitable manner. Often only a few industry representatives have the resources to attend all meetings in order to make sure that their interests are represented.
2. While the remaining vessels can make greater profits under a catch share system, the reduction in employment both directly and indirectly to fishing can have serious consequences for communities, or at least parts of communities that are dependent on fishing.

Other concerns expressed by the public are included in the breakout session summaries below.

Breakout Group #1: Economic Outcomes of Catch Share Fisheries: Sustaining Fishing Communities

Panelists

This breakout session consisted of three panelists who presented examples of several catch share programs in Alaska and the red snapper IFQ in the Gulf of Mexico. The panelists reviewed the development and performance of each program and discussed how social and economic outcomes were considered before and after implementation. The panelists included:

- Steve Minor – Executive Director, North Pacific Crab Association
- Dave Krebs – President, Gulf of Mexico Reef Fish Shareholders’ Alliance
- Jessica Gharrett – Restricted Access Management Program, NMFS Alaska Region

Discussion

This discussion focused on examples of design tools to support sustainable fishing communities. In the example of Bering Sea/Aleutian Island (BSAI) crab rationalization, Steve Minor described how the “right of first refusal” allows communities the opportunity to purchase processor shares in cases where processors were moving out of town, in order to retain economic benefits within their community. Other issues discussed included owner-operator provisions, community based cooperatives and organizations, leasing, unused quota, and crew share allocations in addition to the needs of diversified versus fishery dependent communities. Panelists also talked about allocation, eligibility, and the definition of substantial participation from a community perspective. The group discussed ways to accommodate new entrants to a catch share fishery as well as the possibility of allowing additional participants in a rebuilt fishery. Participants also discussed the purpose, structure, and enforcement of ownership caps.

While catch share programs can successfully eliminate derby style fishing, they may create unintended consequences by incentivizing consolidation and changing the composition of the industry or altering historical landings patterns. In Alaska, managers instituted geographical landing requirements in the BSAI crab fishery to protect communities that were heavily dependent on shore side processing infrastructure. David Krebs noted that the red snapper IFQ actually revitalized some fishing communities in the Gulf of Mexico, since fishermen now take shorter trips closer to home. Panelists discussed the effects of consolidation on employment, agreeing that while catch shares tend to result in fewer but more highly paid year round jobs, the “ideal” employment profile is subject to opinion. Some participants felt that buy-outs could promote fleet consolidation before a catch share program was implemented whereas others felt that consolidation could be achieved by market mechanisms post-implementation. Participants also discussed the loss of working waterfronts, and Jessie Gharrett noted that some of the challenges facing fishing communities fall outside the realm of fisheries management.

Finally, panelists emphasized that catch share programs should be compared to present or possible future conditions instead of to a hypothetical perfect scenario. Catch share programs represent one possible tool for managing fisheries. Controversy and fear of change is part of the development process during the development phase; however, if a catch share program is designed in a fair and transparent manner, it can lead to acceptance and a strong sense of stewardship among participants in addition to cooperation with management agencies.

Lessons Learned

A number of lessons were learned from the presented case studies related to design of catch share programs. Presenters emphasized that the concept of catch shares can be adapted to accommodate any situation and to meet a variety of social and economic goals. Each region must engage with stakeholders to identify the social and economic goals that should guide development of a catch share program. Recommendations based on lessons learned include:

1. Identify all goals (biological, social, and economic) at the outset.
2. Think downstream but be prepared to fine-tune a catch share program over time. It is impossible to predict all behavior in response to new rules.
3. Identify and engage stakeholders early and throughout development and implementation. Stakeholder involvement and buy-in is critical to the success of a catch share program.
4. Consider latent permits and interactions with other fisheries to prevent unintended spillover effects.
5. Develop a data collection platform with the understanding that it will evolve as the program changes and as new technology becomes available.
6. Develop ownership caps and eligibility requirements that meet social and biological goals. Managers should consider allocation of shares designed for particular purposes rather than trying to allocate shares to every stakeholder group.
7. Keep the program as simple as possible. Understand that complexity increases monitoring and requires additional resources, and recognize tradeoffs. Industry and the private sector should be allowed to work out details.
8. Recognize that seafood has become a global commodity. Allow room for market mechanisms to function.

Breakout Group #2: Catch Shares as a Biological Management Tool

Panelists

The “Catch Shares as a Biological Management Tool” session brought together three panelists representing different management contexts and perspectives to share their experiences and insights on how catch shares can help fishery managers achieve their biological conservation and management objectives. The panel included the following individuals:

- John Henderschedt – Phoenix Processor Limited Partnership
- Howard McElderry – Archipelago Research, Ltd
- Wes Erickson – British Columbia fisherman

ALASKA: The North Pacific Council recently approved an initiative to minimize and account for Chinook salmon bycatch in the pollock fishery, which is managed by American Fisheries Act cooperatives. John Henderschedt’s presentation outlined the design elements of this program and illustrated how a well-designed incentive program for non-target species may help fishery managers achieve their bycatch reduction goals while achieving optimum yield. The program has yet to be fully implemented.

BRITISH COLUMBIA: The British Columbia (BC) catch share program merged six different fisheries into one integrated fishery. Wes Erickson provided the fisherman’s perspective on the transition of the BC groundfish fishery to a catch share system and emphasized the importance of comprehensive monitoring to ensure compliance and incentivize cleaner fishing practices. The BC catch monitoring system is administered by Archipelago Research Ltd. Howard McElderry of Archipelago illustrated how the private sector can play a role in data collection and monitoring of government managed fisheries.

Discussion

Workshop participants focused on the specific design elements and outcomes of the BC and Alaska catch share systems. Some participants raised concerns about the applicability and transferability of elements of the BC and Alaska programs to the Mid-Atlantic region. The themes and issues common to most discussions included the following:

1. *How do we manage cost?*

Recognizing that data collection and monitoring programs are central to achieving biological management goals under a catch share system, workshop participants expressed concern about the associated costs of administering such a program. Specifically, how should a data collection or monitoring program be funded and who should bear the costs? Several people were quick to point out that BC and Alaska are regions with high value fisheries with significant technical and financial support. Some participants were concerned that the Mid-Atlantic region may not have the same resources available. However, others noted that the use of self-reported data and timely integration of data systems to support real time management is a process that would fit most management systems even without the level of electronic and observer monitoring seen in BC.

2. *How do we inspire greater collaboration and leadership at all levels?*

The experiences of BC and Alaska illustrate that collaboration and leadership at all levels is crucial to the success of a catch share program. Bridging the communication divide between managers, fishermen, and other stakeholders remains a persistent challenge in

many regions. While supportive of the concept, panel participants acknowledged that the path to creating a more collaborative working relationship and trust between NMFS, industry, and stakeholder groups can be challenging. A key element to engaging industry in program design and implementation is giving them ownership of the problem or placing the burden of proof on them.

Lessons Learned

A number of lessons can be drawn from the Alaska and BC examples, including:

1. Catch shares can be an effective tool for optimizing efficiency and reducing bycatch, given sufficient monitoring. Henderschedt demonstrated that a strategically designed catch share system could optimize catch and economic efficiency while minimizing bycatch.
2. Councils should consider additional incentives to reduce bycatch of non-catch share species.
3. To reduce bycatch, managers need to build incentives into the system via regulations and/or cooperative agreements among user groups. In Alaska, the Council assigned sectors the task of developing incentive programs to avoid Chinook salmon bycatch.
4. Catch share systems are an evolutionary process. BC transitioned from a single species to a multi-species ITQ program in order to minimize and account for excessive discards in the fishery. As the ITQ program evolved and expanded, so did the data collection and monitoring systems.
5. Industry leadership and engagement is crucial. Panelists attributed the success of the BC system in large part to industry involvement and leadership.
6. Catch share programs removed cost-raising kinds of competition (racing to fish) among fishermen but facilitated profit-increasing competition (product quality, bycatch reduction). BC fishermen recognized that intra-fleet coordination and communication benefits the individual as well as the whole.
7. Individual accountability = individual responsibility. Switching to a system where individuals are accountable for their catch inspired greater responsibility.
8. Transferability is essential in combining sectors into a multispecies fishery. When BC merged sectors to form one multi-species fishery, it included a mechanism for inter-sector transfer of quota shares. Transferability enabled greater economic efficiency and eliminated or disadvantaged those sectors or individuals that fished less selectively.
9. Data collection and monitoring is central to effective catch share management. Specified monitoring requirement and standards motivated fishermen to fish more selectively, reduce bycatch, report accurately, and discontinue illegal fishing activities. It also created a more level playing field for fishermen, a data rich and credible fishery information system, improved economics and safety at sea.
10. Electronic monitoring systems can be highly effective. Electronic/video monitoring technology costs about a third of an observer program, enables small vessels to have observation capability, allows for audit-based monitoring, and helps managers identify fishing methods with the greatest bycatch.
11. Catch shares can help to achieve biological management goals. The BC program has ensured that fishermen stay within sustainable harvest levels and reduced discards. The retention and sale of bycatch has also increased economic returns and encouraged more selective fishing practices among participants in the fishery.
12. Catch shares can generate market benefits. With guaranteed access to the resource, harvesters and processors can develop long-term business plans. They also have the

flexibility and incentive to improve product quality, maintain a consistent supply, and move towards eco-certification.

13. Co-funded monitoring programs produced better results than if these programs were only funded by a single group. In BC, the government covers approximately one-third of the cost of data collection and monitoring with industry covering additional costs of the program. Both industry and government are motivated to find the most cost effective program. The cost-recovery system is designed to encourage or discourage particular types of behavior and can help to drive program costs down.

Breakout Group #3: Allocation

Panelists

The breakout session on allocation brought together three panelists to share allocation experiences from diverse geographic regions, including the U.S. South Atlantic, Alaska, and Gulf of Mexico. Each panelist shared how allocation decisions were made in multiple fisheries. The panel included the following individuals:

- Kate Quigley – Staff Economist, South Atlantic Fishery Management Council
- Joe Childers – President, United Fishermen of Alaska, Vice Chair of North Pacific Fishery Management Council Advisory Panel (AP)
- Bob Gill – Vice Chair, Gulf of Mexico Fishery Management Council

SOUTH ATLANTIC: Kate Quigley discussed three fisheries considering catch share programs (golden crab, golden tilefish, snapper-grouper) and one that has a catch share program (wreckfish), which has not been changed since its inception in 1991. Allocation for this fishery was based on a formula of 50% catch history and 50% equal allocation. Since there are only a few active participants in the fishery, the South Atlantic Fishery Management Council wants to explore re-organization of the IFQ program, including consideration of reallocation of the TAC to get rid of latent effort and to allow for new entrants into the fishery.

ALASKA: Joe Childers discussed catch share programs, which are illegal in Alaska state waters. He spoke about several catch share programs operating in federal waters (halibut/sablefish, Bering Sea crab, multispecies groundfish, rockfish) in addition to a CDQ program for pollock. Initial allocations for these fisheries have been based on historical catches, and the programs have been successful in ending derby fishing and excessive discards.

GULF OF MEXICO: Bob Gill's presentation focused on a catch share program for red snapper in the Gulf of Mexico. He explained how grouper and tilefish allocations have recently been added to this program. Quota allocations have been limited to landing history only in the Gulf of Mexico. Red snapper is no longer suffering from overfishing, and the rebuilding program appears to be working well. It is likely that the IFQ contributed to this improvement, as did a large TAC reduction at the time of IFQ implementation.

Discussion

A number of themes were common across breakout sessions, including allocation decisions, new entrants, excessive consolidation/shares, transferability and permanence, recreational fishery allocations, control dates, and socio-economic concerns. During the final session, a unique discussion arose that centered on inter-jurisdictional issues related to setting allocation. This topic was also the focus of a plenary discussion, and was summarized previously in this report.

Allocation decisions: Key questions regarding how to set allocation included how to decide who is included, what years to include, and how to be fair. Participants questioned how to choose a formula that rewards those with a history in a fishery but still allow for new entrants.

New entrants: While some participants questioned why new entrants should be allowed in a fishery that is trying to reduce capacity, others felt it was important to allow new people to

become commercial fishermen. It is difficult in a fishery where there is barely enough quota for existing fishermen; however, some suggestions on allowing new entrants included:

- Giving new entrants a percent of quota when TAC increases
- Sharing a violation revocation of quota with new entrants
- Letting market forces allow for new entrants, such as by leasing quota

Participants noted that entering a fishery has always been a financial burden and catch share programs would be no different, but allowing transferability of quota may be the easiest way to enter a fishery, in part, because quota is more divisible than a fishing permit.

Excessive consolidation: Caps on quota were discussed to keep the composition of a fishery and to avoid a monopoly of the market. In deciding whether or not a cap on shares is necessary, participants suggested the Council ask if it could achieve objectives if consolidation occurred. Cooperatives may be a way to circumvent the need for caps.

Transferability and permanence: While perpetuity of quota rights would allow for stewardship for sustainability, some participants were concerned that someone could hold onto shares and lease them forever. If management allows for re-allocation, such as is being considered in the South Atlantic wreckfish fishery, fishermen could lose a sense of stewardship and trust so these decisions must be carefully considered. Participants also discussed how to allow for transferability between sectors (i.e. commercial to/from recreational).

Recreational fishery allocations: If considering implementing catch share allocations for recreational fisheries, it will be important to decide how to deal with a lack of data. If logbooks are used, there will need to be a way to ground-truth data.

Control dates: If a control date is used, it is important to choose a date that is fair and communicated with advanced warning. Problems can arise with a long data lag or with increases in effort in order to gain additional quota when a catch share program is implemented.

Socio-economic concerns: The impacts on communities and individuals must be considered in addition to biological impacts.

Lessons Learned

A number of lessons can be drawn from the previous experiences in designing and implementing catch share programs, particularly related to allocation decisions, including:

1. Avoid changing the rules. Fishermen need to know how to invest and make decisions for the future. Be careful at the outset of a program in deciding whether or not to include adaptive management practices.
2. Set general guidelines before going into specific allocation formulas or decisions.
3. Consider both biological and socio-economic impacts of allocation decisions.
4. Consider both current participants and new entrants in allocation decisions.
5. Consider not only allocation formulas that use the best selection of years (i.e. 3 out of 5 years), but also consider taking averages as well. See what makes sense for a fishery.
6. Provide data at the outset to run allocation models and make informed decisions.
7. Provide outreach and support to stakeholder groups.

Breakout Group #4: Markets and Long-term Distribution of Shares

Panelists

There is growing interest in catch shares as a tool for fisheries management. As interest has grown, a number of social, ecological, and economic issues have emerged. This breakout session focused on the market for catch shares and on how market structures influence the long-term distribution of catch shares and fishing effort. Presentations by the following three panelists offered a broad perspective of the economic benefits, shortcomings, and challenges of catch share programs, using experiences from catch share programs in New Zealand and Alaska:

- Corbett Grainger – PhD. Candidate, University of California, Santa Barbara
- Michael Arbuckle – Senior Fisheries Specialist at the World Bank and former General Manager in New Zealand’s Fisheries Ministry
- Edward Backus – Vice President, Community Ecosystem Services at Ecotrust

NEW ZEALAND:

Corbett Grainger presented on his current research on New Zealand’s ITQ program, which explores the effects of tenure and ‘sunset’ clauses on share prices. Data from his work suggests that share prices and lease prices behave generally as economic theory would predict. Grainger draws on two examples. First, data show that market volatility (i.e. the change in share price from year-to-year) decreases with time, perhaps as participants gain experience with the market. Second, data show that a consistently high proportion of “trading” in the market occurs through leases, with generally only a small share coming from actual sales of catch shares. The ratio of sales verse lease price of shares is consistent with typical economic theory. Fisheries stocks that are highly variable (i.e. those that are more prone to environmental effects) and those for which property rights are imperfect (i.e. highly migratory species or those prone to illegal fishing) tend to have lower sales to lease ratios (i.e. the price of a catch share is less than one would expect by looking at the lease price).

Michael Arbuckle’s presentation also focused on New Zealand’s ITQ program. Arbuckle summarized the structure and performance of the market for catch shares in New Zealand – one that includes 690 fish stocks. Arbuckle described the country’s market for shares, and then focused on the Maori as a way to illustrate how the system works. Arbuckle discussed that catch shares represent an opportunity to capture ‘lost wealth’ and that the fundamental effect of catch shares is to make fisheries more economically efficient. The panel and the breakout participants discussed two central issues. First, the experience in the New Zealand catch share market seemed to suggest that to some degree catch share markets tended to eventually include all (or at least most) species. Second, countries can modify catch share markets to make them locally relevant, but stipulations and restrictions could constrain the market, making them less efficient.

In the New Zealand scallop catch share program, the industry is responsible for designing and implementing the day-to-day management of the fishery while meeting basic government standards – including fishing within the Total Allowable Commercial Catch (TACC). In some cases, industry has chosen to harvest at rates that are below the government set TACC because it was a good business decision. Finally, Arbuckle demonstrated that catch shares can be allocated and managed by indigenous communities. In New Zealand, 57 Iwi, members of an indigenous tribe, manage more than 25% of the total

ALASKA: Edward Backus addressed questions of community viability, the effects of leasing shares, and high debt loads, using his experience with the North Pacific Fisheries Trust in Alaska as an example. His presentation offered a different perspective on catch shares. Backus suggested the practice of leasing, especially perpetual leasing and long-term leasing by retired fishers, inhibited new entry into the market. He also underscored the importance of initial allocation, saying that allocation defines the long-term success of participants (i.e. those who receive allocation are able to stay in the fishery; those who do not, struggle to gain access). The topic of leasing was one raised repeatedly by breakout group participants with many participants expressing concern that leasing would inhibit the “exchange and tradability” of catch shares. Backus suggested one possible solution to perpetual leasing is to create community trusts to manage catch shares in which communities receive allocation instead of individuals. Though he acknowledged that community trusts could decrease the overall efficiency of the market, he presented that there is a need to ensure the social and cultural viability of traditionally fishing communities.

Discussion

A number of themes and lessons learned emerged from the breakout session discussion, including:

1. *Catch shares can be complicated.*

The United States and New Zealand catch shares systems both deliver ecological, social and economic outcomes but by different means. In the U.S., catch share programs often include restrictions to achieve very specific goals, including social and ecological goals, thus restricting the markets. In New Zealand, there are fewer restrictions placed on the catch shares allowing adjustments to take place in the markets.

2. *To be successful, catch share programs require trust in the market.*

In the U.S., considerable skepticism exists that the market will allocate catch share quotas in a way that meets the many social goals of fisheries management. As a result, U.S. catch share programs tend to be more complicated and have more restrictions than those in New Zealand. Such restrictions may reduce the economic efficiency of catch shares.

3. *It may be all or nothing.*

The New Zealand experience suggests that once a critical number of fisheries stocks are in catch share programs, there is considerable pressure from the markets and industry to expand catch shares to all stocks.

Concluding Remarks: Where Do We Go From Here

Panelists

The workshop concluded with remarks from Rick Robins and Lee Anderson and was followed by a discussion and the identification of the next steps by participants. Robins summarized the proceedings by reminding participants that catch share programs are uniquely powerful and can achieve a broad range of objectives. They can be designed to range from simple to complex, yet they are not one size fits all. Robins noted that catch share programs have transformative potential. Managers should anticipate the need for adaptive management mechanisms in the early design stage when developing catch share initiatives. Adaptive management measures can be front-loaded into the design of catch share programs. Effective data collection and monitoring can create significant opportunities to modify fishing behavior and achieve management objectives through individual accountability. Effective stakeholder engagement is critical to the successful development of catch share programs.

Robins suggested for purposes of discussion that the MAFMC could consider a range of conceptual approaches to catch shares, ranging from status quo to evaluation to visioning. The MAFMC could continue with status quo, a pragmatic approach that considers the adoption of catch share programs on a case-by-case basis. Alternatively, Robins suggested that the MAFMC could evaluate whether existing fishery management plans (FMPs) are meeting their objectives. Finally, Robins suggested considering a visioning approach to survey stakeholders and to determine what they want a fishery to look like, what is working well, and what needs to be improved. This stakeholder process can help identify the objectives of a fishery and be used to update an FMP. The visioning approach outlined in the final plenary session would be built on stakeholder outreach, using surveys, stakeholder workshops, and other outreach methods to develop a council-initiated, stakeholder-driven vision for the Council's managed species. The evaluation strategy and visioning process are not mutually exclusive, and could be conducted synchronously. The visioning process would help the MAFMC to identify problems and opportunities within its existing FMPs, at which point catch share programs would be one management tool available to the MAFMC if it initiates management actions to address the problems and opportunities identified by the constituents. He recommended the take-away message of the workshop be that stakeholder involvement is a key determinant in the success of a catch share program, and that the MAFMC could build upon its outreach methods as cited in a GAO report on the council process.

Lee Anderson spoke next and suggested that instead of asking "how does a catch share program handle x," managers should ask "how do we want a catch share program to handle x." Anderson recommended that the MAFMC members question what the best plan is for meeting a fishery's objectives. A catch share program may alone not address all issues in a fishery but may need to be partnered with other management strategies. During the workshop, Anderson noted that participants have learned a lot from the case studies in other regions, including Alaska, New Zealand, the Gulf of Mexico, and Australia; however, he noted, the MAFMC needs to identify the best program for its regions. Specifically, inter-jurisdictional issues may be a more important consideration for the Mid-Atlantic than for other regions.

Discussion

Participants felt that the workshop provided a good sense of options and ingredients that would go into a catch share program. The next step is identifying if, how, and where this type of

program could be applied in the Mid-Atlantic. Participants agreed that the visioning strategy is an appropriate starting point that could help managers understand what fisheries could look like, according to those actually in fisheries.

Rick Robins addressed a question of how to deal with latent effort in a catch share program by explaining that there are several ways to deal with latent effort, including inactivating permits. However, in a catch share program, the market can make those decisions. Councils will need to decide how to address this question of latent effort and excess capacity. Lee Anderson said that latent effort could be addressed when determining eligibility for participants in a catch share program. Another participant responded that latent permits could provide a buffer against uncertainty. Regardless of whether or not fisheries are managed by catch share programs, the question will continue to arise as to how many participants a fishery can sustain.

While catch share programs developed in other regions in response to resource, economic, social, and/or safety problems, one participant felt these are not problems in the Mid-Atlantic. He suggested that industry and the public rather than the MAFMC should decide if catch share programs are desirable in this region. Robins agreed that stocks in the Mid-Atlantic, contrary to other regions, are in good shape now. However, he noted that Virginia's summer flounder fishery is a derby fishery, the fish are sold cheap, and substantial excess capacity exists. Robins explained that current impediments to optimal fishery performance and utilization provide rationale for the MSFMC to ask participants what is working or not working.

Jessie Gharrett suggested speaking with stakeholders but not inquiring solely about catch share programs. Instead, she recommended asking stakeholders to identify problems in their fisheries. Not all stakeholders will be ready to make the big leap to catch share programs but instead will require small steps to get there. Catch share programs offer just one approach, and with time, people will determine if this type of program will allow them to meet their goals. Gharrett suggested as an agency that the MAFMC offer healthy choices but only options that the agency can support, implement, and enforce. Management measures cannot solve all social problems in coastal economies but can help foster and support stakeholder involvement in the issues and in some cases, mitigate economic effects from past management and fishing practices.

Next Steps

In moving forward after this workshop, several recommendations were made for possible next steps for the MAFMC, in addition to those discussed in the "Where do we go from here" and inter-jurisdictional plenary sessions, including to:

1. Create a sub-committee to look at FMPs and to determine which stocks appear suitable for catch share programs. Fisheries that are too complex or that currently face too many inter-jurisdictional challenges for catch share programs to be developed at this time should also be identified.
2. Engage in a visioning process that surveys fishery participants about the problems they see in their fisheries and possible solutions. Participants generally believed that catch share programs were one of several tools that should be evaluated when making decisions about how to effectively manage fisheries. Participants concluded that early stakeholder involvement is necessary and that it could be useful to establish goals for reaching out to stakeholders within the next few Council meetings.
3. Address latent effort and inactive permits before designing any catch share programs.

Appendix 1: Workshop Agenda

CATCH SHARES WORKSHOP
March 16-18, 2010
1010 Kingsmill Road
Williamsburg, VA 23185
757-253-1703

Final Agenda 3/15/10

Tuesday, March 16

- | | |
|------------------|---|
| 10:00 - Noon | Registration |
| Noon - 1:00 p.m. | Lunch (provided) |
| 1:00 – 1:45 p.m. | Welcome and Introductions <ul style="list-style-type: none">• Welcome - Rick Robins & Lee Anderson (MAFMC Chair and Vice-Chair)• Snapshot of MAFMC species and management – Dan Furlong (MAFMC Executive Director)• Introduction to Catch Shares – Mark Holliday (NMFS Office of Policy)<ul style="list-style-type: none">○ <i>Basic elements of design process and policy decisions that should be considered when creating catch shares</i> |
| 1:45 – 2:45 p.m. | Opening Plenary Session: Case studies <ul style="list-style-type: none">• Alaska halibut/sablefish IFQ – Jane DiCosimo (Senior Plan Coordinator, North Pacific Fishery Management Council)• Gulf of Mexico red snapper IFQ – Bob Gill (Vice Chair, Gulf of Mexico Fishery Management Council)• Australia's Catch Share Programs – David Galeano (Senior Economist, Australian Fisheries Management Authority) |
| 2:45 - 3:00 p.m. | Open Comment/Questions (Participants & Public) |
| 3:00 - 3:15 p.m. | Break |
| 3:15 – 5:30 p.m. | Breakout #1
<i>[Note: Four groups of participants will rotate through the 4 issues / panels. See list of topics and panelists at the end of the agenda]</i> |
| 6:00 - 7:30 p.m. | Reception |

Wednesday, March 17

- 7:30 - 8:30 a.m. Breakfast (provided)
- 8:30 - 10:45 a.m. Breakout #2
- 10:45 – 11:00 a.m. Break
- 11:00 – 12:00 p.m. Plenary Session: Data Collection / Monitoring - the Lynchpin for Accountability & Credibility
- Jessica Gharrett (Restricted Access Management Program, NMFS Alaska Region)
 - Howard McElderry (Archipelago Marine Research)
- [Note: Review data collection and monitoring programs in Alaska and British Columbia that support catch share programs]*
- 12:00 – 1:15 p.m. Lunch (provided)
- 1:15 - 3:30 p.m. Breakout #3
- 3:30 - 3:45 p.m. Break
- 3:45 – 5:15 p.m. Plenary Session: Catch Shares and Recreational Fisheries
- Presentation on existing recreational catch share program:
- Alaska halibut for-hire catch share that was designed but not implemented - Jane DiCosimo
- Panel discussion on proposed ideas for addressing the recreational sector when commercial catch shares are in place
- Halibut charter fleet in Alaska – Captain Greg Sutter
 - Rhode Island recreational charter boat industry – Captain Rick Bellavance (President of the Rhode Island Charter and Party Boat Association)
 - Coastal Conservation Association – Dick Brame
- [Note: This session will explore two main issues: the use of catch shares in recreational fishery management, and the interaction of a commercial catch share program with the recreational fishery.]*

Thursday, March 18

7:30 – 8:30 a.m.	Breakfast (provided)
8:30 – 10:45 a.m.	Breakout #4
10:45 – 11:00 am	Break
11:00 – 12:30 pm	Summary Review of Reports from Panel Discussions • Presentations on each break out session by moderators • Open Q&A with Panelists (Participants & Public)
12:30 - 1:30	Lunch (provided)
1:30 – 2:30	Governance of catch shares: inter-jurisdictional fisheries • Hear from other regions/fisheries that share similar inter-jurisdictional issues under catch shares management (share a common stock unit, but different governance systems) ○ Virginia Black Seabass Catch Share - Jack Travelstead (MAFMC - Virginia Marine Resource Commission) • Discussion panel with representatives ○ Panelists include: MAFMC, ASMFC, NMFS, NOAA General Counsel
2:30- 3:30 p.m.	Where Do We Go From Here – Discussion led by Rick Robins & Lee Anderson
3:30 - 4:00 p.m.	Comments / Feedback

Breakout Sessions:

[Note: for the breakout sessions, we plan to limit each panel to 2-3 experts.]

1. Economic outcomes of catch shares fisheries: sustaining fishing communities

- Review examples of catch share fishery outcomes in terms of economic performance and efficiency
- Address excess capacity and rationalization (costs & benefits of consolidation)
- Discuss concept of excessive shares

Proposed Panelists:

- Steve Minor (Executive Director, North Pacific Crab Association)
- David Krebs (President, Gulf of Mexico Shareholder Alliance)
- Jessica Gharrett (Restricted Access Management Program, NMFS Alaska Region)

2. Catch shares as a biological management tool, focusing on intersections between fisheries

- Review the use of catch shares to address bycatch, especially depleted stocks.
- Review the use of catch shares in mixed fisheries
- Discuss practicality of catch based monitoring

Proposed Panelists:

- Howard McElderry – (Archipelago Marine Research)
- John Henderschedt (NPFMC Member; Participant in Pollock and Whiting fishery and processing)
- Wes Erikson (Fisherman, British Columbia)

3. Allocation

- Highlight policy objectives for allocation decisions
- Review allocation formulas
- Define ownership eligibility
- Compare definition of excessive shares across fisheries

Proposed Panelists:

- Kate Quigley – (South Atlantic Fishery Management Council Staff Economist)
- Joe Childers (President, United Fishermen of Alaska; vice chair NPFMC AP)
- Bob Gill (Vice Chair, Gulf of Mexico Fishery Management Council)

4. Markets & Long term distribution of shares

- Review means for transferability and leasing of catch shares
- Discuss potential / innovative ways to make quota available (quota banks or community quotas)
- Review and discuss potential mechanisms for permit financing
- Address mechanisms involved when pricing quota shares

Proposed Panelists:

- Ed Backus (VP, Ecotrust)
- Corbett Grainger (University of California, Santa Barbara)
- Mike Arbuckle (Senior Fisheries Specialist, World Bank)

Appendix 2: Panelist Biographies

Mid-Atlantic Catch Shares Workshop Panelists March 16-18, 2010

Michael Arbuckle

Senior Fisheries Specialist
World Bank, Washington D.C.
(202) 473-7672
marbuckle@worldbank.org

Michael Arbuckle is a Senior Fisheries Specialist with the World Bank in Washington D.C. He has over 20 years experience in senior government and private sector executive positions within the New Zealand fisheries sector including a period as a General Manager with the Ministry of Fisheries and Chief Executive of a leading industry owned and operated fisheries management agency. Within the Ministry he was responsible for provision of management advice to government for all New Zealand fisheries and led an extensive quota allocation program expanding the quota management system to now encompass around 600 fish stocks.

More recently he has provided advice as a senior fisheries specialist within the UN Food and Agriculture Organization and the World Bank and has led and contributed to the development of fisheries reform programs in a range of developing countries including Indonesia, Sri Lanka, India, Maldives, Senegal, Sierra Leone and Ghana. He has contributed to a range of internationally important initiatives including acting as the moderator of a review of the North East Atlantic Fisheries Commission and as chair of an FAO expert consultation on low cost fisheries management and cost recovery. He is now leading an extensive program at the World Bank investigating the political economy of fisheries reform and the use of development aid in this process.



Ed Backus

Vice President, Fisheries
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Edward Backus lives in Newport, Oregon. He oversees the Marine, Copper (Alaska) and Skeena River (British Columbia) watershed and State of the Salmon programs. He is founder and chair of the North Pacific Fisheries Trust, a \$6 million community fisheries quota revolving loan fund, and an Ecotrust subsidiary. Ecotrust's marine activities focus on the analysis of the social and economic effects of fisheries management, developing capital strategies for communities to accumulate equity in the tradable assets of

fishing, while providing intensive analysis of the status of fisheries resources and conservation options. He has worked on community economic development teams with Shorebank Enterprise Cascadia, an Ecotrust founded organization. Edward has a background in conservation planning and information systems, tropical forest conservation, seabird ecology, and commercial fishing. He is past-chair and a member of the board at the Prince William Sound Science Center (AK), chair of the board of the Alaska Sustainable Fisheries Trust, and a conservation committee member of the Sea Change Investment Fund. He was the co-director of conservation planning at Conservation International from 1987–1993. Ed received his M.F.S. from the Yale School of Forestry and Environmental Studies and a B.S. in wildlife biology from the University of Vermont, School of Natural Resources. He was born and raised in a marine science family in Woods Hole, Massachusetts and fished commercially out of Nantucket in the early 1980's.



Rick Bellavance

President
Rhode Island Charter and Party Boat Association
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Capt. Rick has been fishing recreationally and commercially for 30 years. Along with his Dad, he owns and operates Priority Fishing Charters based in Point Judith, Rhode Island. Rick is a member of the Rhode Island Marine Fisheries Council and sits on the NMFS Highly Migratory Species Advisory Panel, New England Fishery Management Council Multi Species Recreational AP, Atlantic Coast Cooperative Statistics Program AP, and Atlantic States Marine Fisheries Commission APs for summer flounder, black sea bass, and scup. Rick is the President of the Rhode Island Party and Charter Boat Association, a group of 65 charter and party boat operators who are looking into the applicability of a catch share program for the recreational for hire sector.

Dick Brame

Atlantic States Fisheries Director
Coastal Conservation Association
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Dick Brame is the Atlantic States Director for the Coastal Conservation Association's (CCA) Atlantic Marine Fisheries Committee and has worked with CCA for more than twenty years. Prior to working in his current position he served for ten years as the Executive Director of CCA's North Carolina state chapter. He is a member of NOAA's Marine Recreational Information Program (MRIP) Operations Team and a liaison to the Registry Team, serves on the Advisory Panel to the Atlantic Coastal Cooperative Statistics Program (ACCSP), and is a member of the ACCSP Recreational Technical Committee. He also serves on the South Atlantic Fishery Management Council's King and Spanish Mackerel Advisory Panel. He earned his B.S. and M.S. from North Carolina State University.



Joe Childers

Fisherman

President, United Fishermen of Alaska

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Joe Childers is a lifelong professional commercial fisherman who has participated in Alaska salmon, crab, herring, halibut, blackcod, groundfish, and shrimp fisheries and currently fishes in the salmon troll fishery from Juneau and Sitka, the Bristol Bay salmon fishery, and the Bering Sea sablefish fishery. He served as UFA Vice President from 2004 to 2007 and as President from 2007 to the present. Childers also serves as Vice Chair of the Advisory Panel of the North Pacific Fishery Management Council.



Jane DiCosimo

Senior Plan Coordinator

North Pacific Fishery Management Council

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Jane DiCosimo began her career with the Virginia Marine Resources Commission in 1985 as the first Oyster Fishery Management Plan coordinator. She worked as a fishery management plan coordinator with the South Atlantic Fishery Management Council in Charleston, SC from 1987 to 1994. She is the Senior Plan Coordinator with the North Pacific Fishery Management Council in Anchorage Alaska. Her primary responsibilities are to provide Environmental Assessments/Regulatory Impact Reviews/Initial Regulatory Flexibility Assessments in support of FMP and regulatory amendments to the Bering Sea/Aleutian Islands Groundfish FMP and Gulf of Alaska Groundfish FMP and regulatory amendments to manage Pacific halibut. Her principal duties include preparing analyses for amendments to the Commercial Halibut and Sablefish Individual Fishing Quota (IFQ) Program, Limited Entry and IFQ Programs for the guided sport halibut fisheries, and early development of a catch share approach for managing Gulf of Alaska groundfish fisheries. She has a B.A. in zoology from Rutgers University and a M.A. in marine science from the Virginia Institute of Marine Science.



Wes Erikson

Fisherman
British Columbia
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Wes Erikson is an active fourth generation commercial fisherman. He has fished for halibut, herring, salmon, rockfish, lingcod, skate and sable fish along the entire British Columbia coastline and proudly serves his own seafood and selects seafood from local fishermen who share his commitment to quality and sustainability.

Wes has been involved in the fisheries advisory process for over 20 years and has recently been a halibut representative on the Commercial Industry Caucus (CIC) implementing the pilot integrated ground fish strategy. As a result of this program the BC ground fish fishery is now considered the best-managed commercial fishery in the world and Wes is proud to tell his customers that the fish we serve is

“harvested sustainably and locally”.

Wes has grown up cooking on his father’s boat. From a very early age he was given the job of boat cook, which helped to develop his passion for food preparation. Working on active commercial fishing boats, with a variety of seafood of the highest quality has given Erikson an intimate knowledge of local seafood.

Erikson trained at the Islander restaurant in Plettenburg Bay South Africa between 1991 and 1993 and has trained under accomplished Japanese chefs including Saturo Ogawa and Kyoichi Tanaguchi. Erikson has owned and operated Japanese restaurants since 1994.

David Galeano

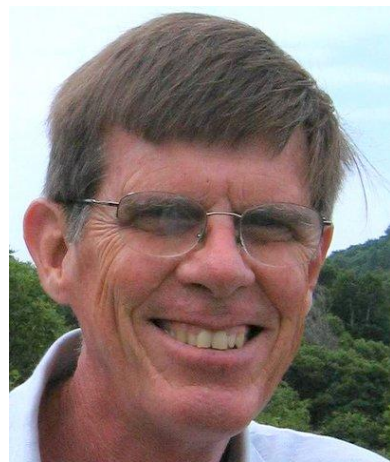
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David has been with AFMA for two years as a senior economist. Prior to joining AFMA he worked with the Australian Government Department of the Environment, Heritage, Water and the Arts as head of the environmental economics unit. David also worked with the Australian Bureau of Agricultural and Resource Economics (ABARE) researching fishery economics and resource sharing.

**Jessica Gharrett**

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Jessica Gharrett is currently the Program Administrator for the Restricted Access Management (RAM) program with the NOAA Fisheries Alaska Regional Office. The RAM program manages permit programs in the Alaska region, including the Pacific halibut and sablefish IFQ program. Jessica has been with the Alaska Regional Office for 23 years and has worked with the RAM program for 15 years. She became the RAM Program Administrator in 2006. Prior to joining the Alaska Regional Office Jessica spent ten years at the Auke Bay Laboratory. She holds a Bachelor of Science degree in Fisheries from Oregon State University, and a Masters of Science in Fisheries from the University of Alaska

**Bob Gill**

Gulf of Mexico Fishery Management Council

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Bob Gill is a member of the Gulf of Mexico Fishery Management council and the co-owner of Shrimp Landing, a wholesale and retail seafood business in Crystal River, Florida. He has been involved in the seafood industry since 1986 and currently serves on the Board of Directors for the Southeastern Fisheries Association, Inc., and Organized Fishermen of Florida.

Bob holds a B.S. from the U.S. Naval Academy and earned his Masters of Science in Mechanical Engineering from the Massachusetts Institute of Technology, and began his career as an engineering officer for the U.S. Navy.



Corbett Grainger

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Corbett Grainger is a PhD candidate in Economics at University of California, Santa Barbara. His research focuses on the effects of environmental regulations, property rights and legal institutions. He is currently studying the effects of stronger property rights on ITQ prices, the determinants of permit and ITQ prices, and the effect of environmental changes on the value of catch shares.



John Henderschedt

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John is currently the Vice President of Phoenix Processor Limited Partnership, owner of the AFA pollock mothership processor OCEAN PHOENIX. In addition to his involvement in the fisheries management process, John is responsible for mothership fleet cooperative quota tracking, safety and security management, food safety programs, regulatory compliance, and special projects related to OCEAN PHOENIX operations. He is part of the management team responsible for the company's strategic planning and business development.

Prior to his employment with the OCEAN PHOENIX, John was employed as Director of Operations at Golden Age Fisheries and managed special projects for the Groundfish Forum, a trade association for catcher processors. He started his career in Alaska fisheries as an at-sea representative and interpreter for Russian joint venture Bering Sea fishing operations in the mid-eighties.

In his free time, John enjoys travel, cooking, and bicycling.



Mark Holliday

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Dr. Holliday serves as the Director of the NOAA Fisheries Office of Policy, after helping re-establish the function in the Directorate in 2003. His prior service to the Agency includes an 11-month detail as the Chief Financial Officer/Chief Administrative Officer in 2002, and a career progression in the Office of Science and Technology beginning in 1981 and ending as Chief of the Fisheries Statistics and Economics Division.

During his tenure he helped organize or lead NOAA-wide strategic initiatives in the planning and formulation of budgets, and created new programs in information technology, social sciences, and fisheries-dependent observing systems. His training includes a wide range of disciplines, including fisheries biology and resource economics. He received his Ph.D. in marine studies in 1981 from the University of Delaware, and holds a master's degree in marine and environmental science from Long Island University and a bachelor's degree in biology from SUNY at Stony Brook.



David Krebs

President
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David Krebs has been involved in all aspects of the commercial fishing industry for the last forty years. He began his fishing career as a deckhand on a seine boat fishing the Florida coast in 1969. In the seventies, he hauled seafood with his father from the Gulf Coast to the North East markets and Canada. In 1981, his father expanded his business to include a wholesale fish company that operated out of Destin, Florida and Port Fourchon, Louisiana. In 1985, he purchased a sixty-eight foot long liner that was used for bottom long lining and surface long lining. He fished secondary to his position as vice-president of Trip Seafood.

In the summer of 1987, he fished his long liner out of Montauk, New York for bigeye tuna. In 1989 he took the boat to Suriname to fish for red snapper, and on to Trinidad, Venezuela, and El Salvador for grouper, golden tile and tuna before returning to the United States in 1991. He started Ariel Seafoods in 1991. Ariel Seafoods is a wholesale fish company that operates out

of Destin and Sebastian, Florida and unloads as far west as Louisiana. He served on the Red Snapper IFQ AP and has been to New Zealand and British Columbia to study their IFQ Systems. He also serves on the Gulf of Mexico Reef Fish LAPP AP and the King Mackerel IFQ AP. He currently own 5 commercial boats and serves as President of the Gulf of Mexico Reef Fish Shareholders Alliance.



Howard McElderry

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Howard McElderry received his M. Sc. in marine biology in 1980 from the University of Victoria, BC, Canada. He is a founding member of Archipelago Marine Research Ltd. and has been a senior partner in the firm for 30 years. Howard has worked extensively in the field of commercial fisheries monitoring and analysis and played a lead role in the development of Archipelago's at-sea observer programs and shore-based monitoring programs. Over the past ten years Mr. McElderry has led the development of Archipelago's electronic monitoring programs, a technology-based approach for provision of at-sea monitoring. Howard was the chair of the 2007 International Fisheries Observer Conference in Victoria, British Columbia, Canada.



Steve Minor

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Steve has been involved in the commercial fisheries off the coast of Alaska since 1977, when he first went north as a commercial diver to harvest herring roe on kelp (Kazunoko kumbo) between semesters at Simon Fraser University in British Columbia, Canada. Since the mid 1980's Steve has worked (as managing partner of Waterfront Associates LLC) with several fisheries-dependent Alaska communities and directly with fishing companies and fishing-related trade associations on a range of projects from ports and harbors infrastructure development to the establishment of a major Bering Sea fishing cooperative and the management of one of Alaska's Community Development Quota (CDQ) organizations. While working with the Aleut community of St. Paul Island in the Bering Sea, he developed the community protection measures that are now a major characteristic of the Bering Sea Crab Rationalization Program. Since 2006, Steve has been the Executive Director of the North Pacific Crab Association; he has also served as Chairman of the Pacific Northwest Crab Industry Advisory Committee since 2004 and Chairman of the Communication Committee for the Marine Conservation Alliance since 2007.

**Kate Quigley**

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Kate Quigley is the fishery economist for the South Atlantic Fishery Management Council. She received her Master's degree from the University of Florida and worked on her doctoral degree at Oregon State University developing a bioeconomic model for a New Zealand scallop fisherman's corporation. She is currently working with snapper grouper, golden crab, and wreckfish fishermen in the South Atlantic to help them craft endorsement and catch share programs. She also worked in Seattle for the National Marine Fisheries Service to provide analysis of the groundfish trawl fishery and the catch share program devised there.

**Greg Sutter**

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Capt. Greg Sutter started charter fishing at the age of thirteen in Wachapreague, VA. He earned his captain's license in 1978 and fished throughout college. After he received his B.S. degree from Old Dominion University, he became a loan office manager for Great Western Bank. In 1995, he left the banking industry, moved to Homer, Alaska, resumed his fishing career, and started his own charter fishing business as Capt Greg's Charters in 1997. He has been based in Homer, Alaska since that time. His service as a board member and/or officer includes: the Wachapreague's Guides Association, Wachapreague town council, the Virginia Charter Boat Association and currently the Alaska Charter Association. He also served on the North Pacific Fishery Management Council's Charter Halibut Stakeholders' Committee.

Jack Travelstead

Deputy Commissioner and Chief of Fisheries Management
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Jack has been with the Virginia Marine Resources Commission since March 1981 and has been Fisheries Chief since July 1984. He is also the deputy commissioner of the agency. He is responsible for management of the state's saltwater fisheries, both finfish and shellfish, recreational and commercial. His department sets the size, season and creel limits for a variety

of saltwater species and creates management plans to achieve and maintain sustainable fisheries, working closely with the National Marine Fisheries Service. The department also manages the state's extensive artificial reef system, water access projects and the popular Saltwater Fishing Tournament, which tracks and awards plaques for remarkable catches.

He earned Bachelor's degree in Biology from Old Dominion University and a Master's of Art in Marine Science at the College of William and Mary.

Appendix 3: Presentations

The slides from power point presentations are included for your reference. The individual presentations are also available at www.fisheriesforum.org.

Introductions

- * Dan Furlong
- * Mark Holliday

Plenary Session: Case Studies

- * Jane DiCosimo
- * David Galeano
- * Bob Gill

Plenary Session: Data Collection & Monitoring – the Lynchpin for Accountability and Credibility

- * Jessica Gharrett
- * Howard McElderry

Plenary Session: Catch Shares and Recreational Fisheries

- * Alaska halibut for-hire catch share that was designed but not implemented: Jane DiCosimo
- * Halibut Charter Fleet in Alaska: Greg Sutter

Plenary Session: Governance of Catch Shares – Inter-jurisdictional Fisheries

- * Virginia Black Sea Bass Catch Share: Jack Travelstead

Economic Outcomes of Catch Share Fisheries: Sustaining Fishing Communities

- * Steve Minor
- * Jessica Gharrett

Catch Shares as a Biological Management Tool, focusing on intersections between fisheries

- * John Henderschedt
- * Howard McElderry
- * Wes Erickson

Allocation

- * Kate Quigley

Markets and Long-Term Distribution of Share

- * Corbett Grainger
- * Mike Arbuckle
- * Ed Backus

Plenary Session: Where do we go from here?

- * Rick Robins