Integrating a Recreational Fishery into a Catch Share Program:

Case Study of Alaska's Guided Halibut Sport Fishery

Richard Yamada | Sherry Flumerfelt

CATCH

Catch Accountability Through Compensated Halibut

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Abstract

In recent years, declining Pacific halibut stocks have prompted regulators to increase restrictions for Alaska's guided anglers. Charter operators, who depend on guided angler business, are struggling in the face of their clients' declining fishing opportunities. The Catch Accountability Through Compensated Halibut (CATCH) project is researching a solution to increase the guided sport (charter) sector's allocation by integrating it into the commercial halibut Individual Fishing Quota (IFQ) program. Under the proposed plan, an organization representing guided anglers would purchase commercial halibut quota from willing IFQ sellers and hold it in a common "pool" for all guided anglers. This pool of quota would be used to supplement the guided sport sector's allocation, thereby increasing access to the fishery for all anglers equally. The CATCH plan offers a market-based solution for addressing allocation issues without undermining the conservation goals of the IFQ Program. Quota transfers would occur between willing sellers and willing buyers, providing commercial IFQ participants with an additional market for their quota. By increasing fishing opportunities for anglers, the CATCH plan would result in a more economically viable and stable charter sector, which would greatly benefit Alaska's coastal communities.

Keywords: Pacific halibut, Alaska, guided anglers, sport fishing, charter sector, catch shares, recreational fishing, fisheries management, IFQ, CATCH.

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Table of Contents

List of Appendices

List of Figures

List of Tables

Acronyms and Abbreviations

ACA	Alaska Charter Association
ADF&G	Alaska Department of Fish and Game
AP	Advisory Panel
BOF	Board of Fisheries
CATCH	Catch Accountability Through Compensated Halibut
CCL	combined catch limit
CDQ	community development quota
CEY	constant exploitation yield
CHP	charter halibut permit
CQE	community quota entity
CSP	Catch Sharing Plan
DCCED	Department of Commerce, Community, and Economic Development
Ebio	exploitable biomass
FC	Fishing Community
FCEY	fishery constant exploitation yield
GAF	Guided Angler Fish
GHL	Guideline Harvest Level
IFQ	individual fishing quota
IPHC	International Pacific Halibut Commission
IVR	interactive voice recording
Lb.	pounds
MAFMC	Mid-Atlantic Fishery Management Council
Mlb.	million pounds
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Act
MSAB	Management Strategy Advisory Board
MSY	maximum sustainable yield
MWR	U.S. Military Morale, Welfare and Recreation
NFWF	National Fish and Wildlife Foundation
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
OY	optimum yield
PAG	Processor Advisory Group
QS	quota share
QSP	quota share pool
RAB	Research Advisory Board
RAM	Restricted Access Management
RFA	Regional Fishery Association
RNPA	Regional non-profit association
RQE	Recreational Quota Entity
Sbio	spawning biomass
SCVL	Saltwater Sportfishing Charter Vessel Logbook
SOE	State Owned Entity
SSA	standardized stock assessment
SSC	Scientific and Statistical Committee
SWHS	Statewide Harvest Survey
TAC	total allowable catch
Tbio	total biomass
TCEY	total constant exploitation yield
TURFs	Territorial Use Right Fisheries
WPUE	weight per unit effort

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Executive Summary

INTRODUCTION

In recent years, declining Pacific halibut stocks have prompted regulators to increase restrictions for Alaska's guided anglers. Charter operators, who depend on guided angler business, are struggling in the face of their clients' declining fishing opportunities. There is currently no mechanism for the guided sector as a whole to increase its allocation, other than through the North Pacific Fishery Management Council's authority to reallocate halibut resources between user groups. This situation poses a great risk to the economic viability of the guided sport sector and the coastal communities it supports.

The Catch Accountability Through Compensated Halibut (CATCH) project is researching a market-based solution to increase the guided sector's allocation by integrating it into the Alaska Halibut and Sablefish Fixed Gear Individual Fishing Quota (IFQ) Program. Under this conceptual plan, NMFS would authorize an organization representing guided anglers to purchase commercial halibut quota from willing IFQ sellers and hold it in a common "pool." This pool of quota would be used to provide stability in guided angler regulations, with the objective of maintaining a historic two halibut of any size daily bag limit in Area 3A (Southcentral Alaska), and reaching a one halibut of any size daily bag limit in times of low abundance and a two halibut of any size daily bag limit in times of high abundance in Area 2C (Southeast Alaska).

The CATCH program offers a market-based solution for addressing allocation issues without undermining the conservation goals of the Alaska Halibut and Sablefish IFQ Program. Quota transfers would occur between willing sellers and willing buyers, providing the commercial fleet with an additional market for their quota. By increasing access to the fishery for all anglers equally, the CATCH program would result in a more economically viable and stable charter sector, which would greatly benefit Alaska's coastal communities.

BACKGROUND

Halibut Management in Alaska

Alaska's recreational and commercial halibut fisheries are managed at the international and national levels, with support from the State. Each year, prior to the fishing season, the International Pacific Halibut Commission (IPHC) recommends catch limits to the United States and Canadian governments for each of the IPHC Regulatory Areas. The U.S. Secretary of State accepts or rejects the catch limits, NOAA's National Marine Fisheries Service (NMFS) publishes and implements the new regulations, and the North Pacific Fishery Management Council (NPFMC) decides how to allocate the halibut catch among the various user groups.

Status of Halibut Stocks

Halibut stocks have experienced a 50% decrease in exploitable biomass over the past decade (NPFMC 2012b). Scientists have found a general decline in size-at-age across ages, sexes, and areas, which they attribute to a combination of factors such as competition for food, population densities, biological threats, trawler bycatch, and fishing pressure from all sectors (NPFMC 2012b, 2012c; Valero 2011). IPHC staff also recently discovered that they have been overestimating halibut biomass for years and should have imposed much more restrictive harvest rates.

Catch Shares

Under "catch share" systems, individuals or groups are given an exclusive right to harvest a share of the total allowable catch of a given fishery. Once their share of the catch is reached, they are required by regulation to stop fishing. If they exceed their shares in a given year, they must lease or buy additional shares to cover their overage or they are subject to a fine or revocation of their privilege.

Proponents of catch shares claim that they improve compliance to catch limits, promote fisheries sustainability, result in more stability and predictability for fishermen, help stabilize fish landings and catch limits, improve product quality, increase profits, and improve at-sea safety. Opponents argue that catch shares unfairly allocate fishing privileges to a select group of fishermen, create job loss, marginalize other user groups such as recreational fishermen, result in absentee ownership, and privatize a public resource. To date, there are no recreational catch share programs in the U.S., but there is growing interest with several pilot projects underway.

Alaska's Commercial Halibut Fishery

Pacific halibut is a highly valued commercial species in Alaska, supporting jobs on vessels, in fishing plants, and within related dockside industries. The NPFMC has managed the commercial longline fishery under the Alaska Halibut and Sablefish Fixed Gear Individual Fishing Program since 1995. This IFQ program was one of the first catch share programs to strongly emphasize social goals aimed at preserving the traditional character of the fishing fleet, avoiding excessive consolidation, and maintaining fishing opportunities for new entrants. The program includes a Community Development Quota (CDQ) program, which allocates a percentage of the quota share to economically disadvantaged coastal western Alaskan communities. It also has a Community Quota Entity (CQE) program, which allows eligible rural communities to participate in the IFQ program.

Alaska's Guided Sport Fishery

Marine recreational fishing in Alaska generates significant economic benefits to coastal communities. Pacific Halibut is a prized trophy fish, and is the state's most commonly caught recreational species (NMFS 2012).

From 2003 to 2013, the NPFMC managed the guided halibut sport fishery under a Guideline Harvest Level (GHL) program, with target harvest levels, which, if exceeded, triggered more restrictive management measures the following year. For the first time, "guided" and "unguided" anglers were managed separately (unguided anglers continued to be managed under daily bag limits, with no annual limits or target harvest levels). The NPFMC's management measures effectively kept Area 3A guided anglers within the GHL each year, but were not effective in Area 2C where guided anglers exceeded the GHL between 2004 and 2010. As a result, regulators decreased Area 2C's daily bag limit from two fish of any size, to an historic low of one fish equal to or under 37-inches in length in 2011.

The GHL was a "soft" cap, which, if exceeded, did not result in immediate penalties, but did result in more restrictive harvest measures the following year. This concerned commercial fishermen, since the IPHC set annual commercial catch limits after deducting the guided sport catch from the available exploitable biomass. Any harvest over the GHL was viewed as a de facto reallocation of halibut from the commercial sector to the guided sport sector.

To remedy this, in 2014 the NMFS will replace the GHL with a new Catch Sharing Plan (CSP), under which the guided sector will share a combined catch limit with the commercial sector, with each receiving a percentage of the allowable harvest. Guided angler harvest will no longer be deducted before the IPHC sets commercial catch limits.

A special provision of the CSP will allow individual charter operators to lease limited amounts of commercial quota, which will be converted into Guided Angler Fish (GAF). By leasing GAF, charter operators can provide their clients with additional fishing opportunities up to the bag limits of unguided anglers. However, GAF is widely viewed as an uncertain and temporary, year-to-year solution, which may only benefit a few. Opponents argue that it will not provide stability and predictability to the charter sector as intended, since no one can predict IFQ availability and price in advance. The program is also criticized for encouraging absentee use of quota shares, a use prohibited by the design of the IFQ program. The CATCH concept presented in this paper, offers a permanent, alternative solution to GAF, which would benefit all guided anglers equally.

RESEARCH RESULTS

Integrating a Recreational Fishery into a Catch Share Program

Recreational catch share programs have been slow to develop due to difficulty in monitoring, unknown impacts on stakeholders, opposition to the privatization of a public resource, and the inherent differences between recreational and commercial fisheries. Nonetheless, there has been substantial interest in recreational catch shares, as stated in NOAA's Catch Share Policy (2010). The closest any fishery has come to implementing a recreational catch share program was the Alaska Charter IFQ program, which was never implemented. There have also been pilot projects in the Gulf of Mexico and Rhode Island. Each of these programs allocates a secure share of the catch to a charter operator, party boat, or head boat captain. However, this takes fishing rights away from anglers (the public) and grants them to a select group of business owners (charter operators). These programs also require sector separation, with separate management for guided and unguided anglers. While this already exists in Alaska's guided recreational halibut fishery, it is something the recreational fishing community widely opposes nationwide. Alternative programs could grant privileges to individual anglers, a collective group of charter operators, or a collective group of anglers, as proposed here.

CATCH Concept of a Guided Angler Catch Share Pool

The CATCH program would provide a means for the guided sport fishery to purchase commercial halibut quota on the open market and hold it in a common "pool" for the benefit of all guided anglers. By giving guided anglers a way to permanently increase their allocation, the program aims to provide relief from the economic impacts of overly restrictive regulations, maintain public access to the fishery, and provide stability to the guided recreational sector. The concept would work in the following way:

- An organization or "holding entity" would be formed to purchase, hold, and manage commercial halibut quota shares on behalf of the guided recreational sector. NMFS would approve this entity as a qualified participant in the Alaska Halibut and Sablefish IFQ Program.
- The holding entity would obtain funds from a loan, grant, or other funding source, and would use those funds to purchase halibut quota on the open market from willing commercial IFQ sellers. NMFS would consider controls to protect the objectives of the IFQ program (e.g., limits on quota share transfers).

- This purchased quota would be held in a common "pool" for the benefit of all guided recreational anglers. The pool of quota would be added to the annual guided sector allocation, and this "revised" allocation would be the basis from which the NPFMC and IPHC would recommend the next season's harvest management measures to the Secretary of Commerce.
- The guided sector would retire its debt through some form of long-term funding mechanism such as a halibut stamp, charter fee, or combination of financing tools.
- The charter sector would work with state and federal agencies to improve accountability tools and reporting requirements to ensure guided anglers participate with the level of accountability required for a catch share program.

CATCH RECOMMENDATIONS FOR INTEGRATING A RECREATIONAL FISHERY INTO A CATCH SHARE PROGRAM

- A recreational catch share program should aim to maintain access and opportunity for all anglers equally, and not a select group of anglers.
- Regulators should assign fishing privileges to anglers and not charter operators.
- The program should aim for stability in regulations, exploring creative ways of keeping the sector accountable in ways that avoid in-season management and closures, which are devastating for charter businesses and coastal communities.
- Managers should be flexible when setting annual catch limits and accountability measures for a recreational fishery given the uncertainties in estimating angler demand.
- The program should provide mechanisms that support the best socio-economic utilization of the fishery for coastal communities, whether commercial or recreational.

Guided Angler Holding Entity

The CATCH program requires a holding entity or administrative body to purchase and manage halibut quota share on behalf of the guided recreational sector. The holding entity would perform administrative functions such as arranging and maintaining financing, negotiating quota share purchase prices, and completing the necessary reporting requirements. This report explores different options for a holding entity including the federal government, the State of Alaska, a Regional Fishery Association (as defined in the Magnuson-Stevens Act), and a Recreational Quota Entity (modeled after the Community Quota Entity program in the IFQ program).

CATCH RECOMMENDATIONS FOR A HOLDING ENTITY

- The NPFMC should pursue a Recreational Quota Entity (RQE) program, modeled after the Community Quota Entity (CQE) program.
- NMFS should approve a RQE as an eligible participant of the Alaska IFQ Halibut and Sablefish Program, with authority to purchase, sell, lease and manage halibut quota share in trust for all halibut guided anglers in common.
- One RQE should be formed to represent both IPHC Regulatory Area 2C and Area 3A, with each area having its own, separate quota share management pool.
- One Board of Directors should oversee the program, with subcommittees representing each Area. The Board should be composed of charter operators from Area 2C, charter operators from Area 3A, and recreational anglers. Other stakeholders may also be relevant on the Board, but this decision should be made when the by-laws are written.
- If a State halibut stamp is achieved as a funding mechanism for this program, then a non-profit corporation, as described in the Alaska Non-Profit Corporations Act, should be formed as the legal entity of the RQE.
- If a charter assessment or tax is pursued as an alternate to a State halibut stamp, then a regional non-profit association (RNPA) should be formed as the legal entity consisting of charter operators acting on behalf of their clients. The RNPA should have statutory authority to conduct elections for each Area's charter permit holders to vote on a self-imposed state tax. Any quota share purchased would become the property of all guided anglers in common.

Quota Transfer Mechanisms

Transfer Goals and Needs

The goal of the CATCH program is to transfer enough halibut quota to:

- Maintain a two halibut of any size daily bag limit in Area 3A;
- Reach a one halibut of any size daily bag limit in times of low abundance and a two halibut of any size daily bag limit in times of high abundance in Area 2C.

To reach these goals under CSP management, the report estimates that the CATCH program would need to transfer a total of:

- 785,000 pounds in Area 3A (two halibut of any size).
- 587,000 pounds in Area 2C (initially one halibut of any size).

Transfer and Use Restrictions

The IFQ program has a number of transfer restrictions including geographic trading limits, social trading limits (vessel categories, blocks, quota share use caps, vessel use caps, leasing restrictions, owner-on-board provisions), and administrative-based limitations. The social trading limits were developed to maintain the original objectives of the IFQ program, to prevent consolidation of ownership, limit windfall profits from transfers, protect the traditional makeup of the fishery, and maintain opportunities for new entrants. The report examines how each of these restrictions might apply to the CATCH entity.

Temporary Relaxation of Restrictions

While some restrictions are necessary, too many rules come with trade-offs, and can reduce the economic efficiency and value of the fleet. For this reason, NOAA's Catch Share Policy (2010) urges fishery management councils to "be mindful of imposing too many constraints on the transferability that would stifle the innovation and flexibility fishermen need for competitive cost-efficient business decision making."

The CATCH project commissioned economists from The Research Group to conduct an economic analysis of this project (Davis, Sylvia and Cusack 2013). The economists suggest having a one-time waiver or general waiver on transfer and use restrictions. This would give the CATCH entity a greater chance at finding sufficient quota share to fulfill its bag limit objectives. It would also benefit commercial quota holders who bought into the IFQ market at its peak, and are now interested in selling to recover their losses, or who wish to retire from the fishery but cannot find willing buyers. By relaxing transfer and use restrictions, regulators would increase the value of commercial quota share.

Leasing

A two-way leasing arrangement between the CATCH entity and commercial quota share holders would allow flexibility in adjusting to short term fluctuations in abundance for both sectors. Limitations on leasing would protect each sector from "absentee landlords" (in which either sector buys more quota than they need so that they can lease it back to the other sector at a profit). For example, only 10–15% of IFQ holdings maybe leased between sectors.

How to deal with Surplus IFQ and Quota Shares

If the current trend continues, the CATCH entity would be purchasing quota shares during times of low abundance, which could eventually equate to more fish per quota share unit in times of higher abundance. The report explores the following options for managing a surplus of IFQ and quota shares:

- Do nothing or status quo.
- Allow commercial fishermen to harvest surplus allocation.
- Lease surplus allocation to commercial fishermen.
- Rollover surplus allocation to the next year.

Administrative Issues

Under the CATCH program, guided anglers would be fishing under two different types of allocation: the traditional regulatory allocation, and the quota share pool. The NPFMC would need to manage the two pools separately so that the quota retains its original designation under a two-way transfer. This section explores other administrative issues, such as cost recovery and market-based transfer systems under the CATCH program.

RECOMMENDATIONS FOR QUOTA TRANSFER MECHANISMS

A transfer mechanism design must take into consideration the many trade-offs involved in balancing the economic and social benefits that a reallocation of quota shares may have on each sector. CATCH recommends the following:

- Quota share should be fully transferable (two-way) across sectors, and should retain its original commercial designation.
- All quota share transfers should be between a willing seller and a willing buyer.
- The NPFMC should allow limited, two-way, leasing of quota share between sectors. This would allow flexibility in adjusting to short-term fluctuations in abundance for both commercial and recreational sectors, and would help both sectors improve efficiencies and profitability.
- In defining the quota transfer mechanisms for the CATCH entity, every effort should be made to allow transfers to occur in the least restrictive environment as possible. This would help to ensure quota shares retain their asset values for both the commercial and recreational fisheries.
- When considering transfer and use restrictions, a thorough analysis should be conducted to determine whether a restriction on D shares would have as great a negative impact on new entrants as the original drafters of the IFQ program had anticipated.
- An additional analysis should examine whether there is, in fact, a great threat of consolidation if the CATCH entity were to purchase under relaxed rules.
- A limited rollover of harvest balance, positive or negative, should be considered to allow for flexibility in managing a constantly changing level of recreational fishery participation.

Accountability

Accountability is key to effective fisheries management, and is critical to the success of catch share programs.

How to Keep the Guided Sector Accountable Under the CATCH Program

In traditional catch share programs, participants must stop fishing once they reach their exclusive allocation, or find additional IFQ to purchase or lease to cover their overage. However, in-season closures are extremely detrimental to the charter sector, since anglers book trips many months, or even years, in advance, often with non-refundable air and lodging expenses. Recreational fisheries across the nation have spent years working to promote stability in regulations and oppose in-season management and closures. The NPFMC is also committed to finding solutions that will not result in any in-season changes or in-season closures (NPFMC 2007c).

Numerous reports stress the importance of flexibility and innovation in the design of catch share programs (Bonzon et al. 2010, 99; National Research Council 1999; NOAA 2010). With this in mind, the CATCH program aims to come up with creative ways of holding guided anglers accountable that do not depend on in-season closures or in-season management. The report explores the feasibility of different proactive measures including:

- Setting aside conservative "buffers" to account for uncertainty in angler demand (e.g., setting aside 10% of allocation).
- Voluntary self-management among charter operators (e.g., inducing clients to reduce take of fish).
- Harvest tickets (sometimes called tags), in which a fixed number of tickets are assigned to anglers, and once they are used, fishing must end.

If the proactive measures are not successful at keeping the fishery within allocation, then reactive measures could be implemented such as:

- Leasing or buying additional shares to cover overages.
- Rollover allowances that deduct overharvest from the next season's allocation.

Data Collection and Reporting

Under the CATCH program, charter harvest will need to be tracked in as close to real time as possible to allow fishery participants, managers, and enforcement officials to know, at any given time, how much quota in the pool has been fished, and whether there is enough in the pool to cover the landings. With an electronic reporting system, charter halibut permit holders could report daily on the number of halibut caught by clients through an Internet web-based system similar to the commercial eLandings system or through a phone-in system.

Harvest tags or "jaw tags" could be used to help track the number of fish landed as a way to validate logbooks or electronic reporting. However, harvest tags would not work towards the goal of real-time reporting and would add significant administrative costs.

Precision in Harvest Accounting

There are different ways of measuring harvest in the commercial and recreational halibut fisheries, which pose a challenge for any inter-sector transfer program including GAF. Under the Catch Sharing Plan, the conversion between annual IFQ and GAF will be based on the average weight of halibut that the charter sector landed per region in the previous year, as determined by ADF&G. However, there are different average sizes between sub-regions. NMFS instead recommends measuring the length of each halibut retained, and using the IPHC's length-to-weight table as a standard for calculating transfers between IFQ and GAF (NMFS Alaska 2012c). The CATCH program could also adopt this method.

RECOMMENDATIONS FOR ACCOUNTABILITY

- Regulators should adopt flexible means of holding the guided sector accountable that avoid having to enforce a "stop fishing" measure, which would be devastating to the charter sector. Priority should instead be given to the following accountability tools:
  - » A reasonable buffer should be set aside to account for uncertainties in angler harvest and regulations. Once an appropriate buffer is in place, additional purchased quota share can be used to relax restrictive harvest measures.
  - » The program should include rollover allowances to account for harvest overages and underages, taking into consideration the status of the stocks and the uncertainty in recreational harvest (e.g., if stocks are doing well, the NPFMC can relax from taking immediate action on overages and instead use a three year rolling average in recommending harvest measures.). In addition, rollover underage allowances should only apply to the next season's allocation and should not be banked for use in future years.
  - » The CATCH program should allow limited annual leasing between the commercial and charter sectors, so that if there is a shortage of allocation near the end of the season, or if overharvest has already occurred, the CATCH entity can lease from willing IFQ holders who have not already fished their quota.
- Managers should adopt an electronic reporting system to improve the timeliness and accuracy of charter harvest data, with both an Internet reporting system and possibly an Interactive Voice Recording phone service.
- The program should adopt the NMFS' recommended measurement for GAF fish, which measures the length of each halibut retained and uses the IPHC's length-to-weight table as a standard for calculating transfers.

Funding

The holding entity will need to raise funds to purchase and manage enough quota shares to achieve its daily bag limit objectives. There will be administrative costs such as legal consultation during setup, banking fees, personnel, and filing for taxes. There may also be external government administrative costs, such as NMFS administrative fees to pay for the costs of tracking, purchasing, and sales of quota.

Funding Needs

Funding needs will depend on how much quota share is needed to reach the desired bag limits, and will be influenced by transfer and use restrictions, availability and price of quota on the market, and how the holding entity impacts that price. For illustrative purposes, this report makes a number of assumptions to come up with the following estimates:

- At a price range of $25 to $50 per pound, Area 2C would need between $14.6 million and $29.4 million to transfer 587,000 pounds, and Area 3A would need between $19.6 million and $39.3 million to transfer 785,000 pounds.
- Annual financing costs in Area 2C would be approximately $1.32 million. The annual revenue raised by a $20 stamp would come to an estimated $1.48 million. Therefore, a $20 halibut stamp would likely be sufficient to cover the annual costs for loan repayment, and even a $10 stamp could have a meaningful impact.

Davis, Sylvia and Cusack (2013) conducted a similar analysis of financing requirements for Area 2C under the CATCH program. Their results show that if adequate quota share could be secured at $35 per pound and angler participation increased significantly at a stamp fee of $20 per day, revenues would be adequate to finance the necessary purchase. However, if quota share costs were $50 per pound or more, then even a $30 stamp per angler day would be inadequate to finance the required purchase, unless angler participation rates increased by 30% or more.

Financing Mechanisms

The CATCH program would require initial capital to start purchasing quota share and a long-term revenue stream to retire any loans acquired and to continue purchasing quota share. Grants from government programs, philanthropic foundations, individuals, or non-governmental organizations are the most affordable funding source, but can be limited in amount. Some banks have made loans to purchase quota share/IFQ, but commercial banks may be unwilling to lend to a new, high-risk entity with no credit history, proven operating capacity, or existing assets. They also may be unwilling to accept quota share as collateral for loans. The entity will likely have a better chance applying for government or special interest loans.

To pay off the loan, a federal halibut stamp could be modeled after the successful Federal Duck Stamp Program. However, the process would be lengthy and full of uncertainties, and may require amendments to the Magnuson-Stevens Act or Halibut Act. A state halibut stamp would not require congressional action, and could be modeled after the Alaska king salmon stamp program and enforced in the same manner. Either the Alaska Department of Revenue or ADF&G could collect the funds. ADF&G could also collect revenue from a state halibut surcharge stamp on sport fishing licenses, and deposit it into a special account within the Fish and Game Fund. A state halibut stamp would not conflict with federal regulations, since it would be a revenue-generating mechanism and not a management tool. A state halibut stamp does not violate the state's uniform application clause, equal access clause, or dedicated funds clause, but would need state legislation to authorize it.

The CATCH program could also raise revenue via a charter halibut tax, modeled after the state's Salmon Enhancement Tax, which would require special state legislation. The entity would have to form a special-interest non-profit corporation such as a Regional Non-Profit Association (RNPA) with the ability to self-tax. A charter halibut permit fee could be issued to permit holders, who could pass the fee on to their clients or absorb it as part of their operating expenses. The fee could also be based on charter halibut permit angler endorsements. This would require an amendment to the charter halibut permit program and would have to be approved through the NPFMC and NMFS regulatory process. A major issue would be the unequal benefits realized among active and less active permit holders. However, a fee on permits could help dissuade people from holding on to idle or minimally used permits. Another option is to base the fee on individual angler effort. Charter operators would pay fees based on charter logbook records of number of anglers involved in halibut fishing trips.

A challenge with charter operator fees, is that charter operators would be essentially paying for something that belongs to guided anglers. This would have to be clarified and legally documented. Some operations may have difficulty absorbing the increased expense. Consideration must be given to how taxes and fees would be reported, paid, and enforced.

Termination of Revenue Stream

In its simplest form, the CATCH program would stop purchasing quota share once program goals were met (plus a reasonable buffer to account for annual fluctuations in angler demand). Funding programs (i.e., halibut stamp, charter assessment) would stop once all incurred debts were paid. Another option is to continue the revenue stream indefinitely, and once the CATCH program objectives (bag limits) were reached, the funds could be used for other purposes (e.g., research or extra administrative fees). If transfer and use restrictions are in place, then this should ease concerns that an open-ended funding stream would be used to purchase halibut quota share in perpetuity.

RECOMMENDATIONS FOR FUNDING

- The CATCH program should pursue a diverse portfolio of funding, using a combination of financial tools to help finance the purchase of quota shares and to cover administrative costs. This will help during market downturns, make payments on debt service more manageable, and lower the risk for lenders.
- Priority should be given to pursuing a state halibut stamp for all guided halibut anglers who wish to fish and retain halibut. If possible, anglers should have to purchase this stamp prior to departing on a halibut trip. The CATCH program should secure a loan with debt service accomplished using revenues from this state halibut stamp.
- In the event that a state halibut stamp is not attainable, the program should pursue a charter halibut tax, or client based user fee, for those who wish to fish and retain halibut off a charter vessel. This fee could be modeled after the Salmon Enhancement Tax. All CHP holders could be levied a tax and/or fee based on charter logbook records on halibut landings or some other acceptable recording method. Each CHP holder would in turn collect fees from their clients to cover the expense of this tax. It must be made implicit that quota share purchased through this funding method belong to guided anglers in common and not charter businesses.

CONCLUSIONS

The results show that the CATCH program is a feasible approach for increasing fishing opportunities in Alaska's guided halibut sport fishery. The NMFS has already set the precedent for adding a community of users to the IFQ program through the Community Quota Entity Program (CQE), which could be adapted for a Recreational Quota Entity (RQE). Funding through a halibut stamp would be sufficient to purchase the needed quota share. There are creative ways of holding guided anglers accountable to a catch limit that do not depend on in-season closures, which are devastating for charter businesses, and which the NPFMC opposes. An electronic reporting system for the guided sport sector would improve accountability. While a temporary relaxation of restrictions may increase the price of quota, it would also increase the long-term asset value for both the commercial and recreational fleets. By being flexible and adaptive, fisheries managers are supporting the objectives of catch share programs, and helping ensure that the best economic value is placed on fishery resources for coastal communities.

1

Introduction

Marine recreational fishing is a favorite national pastime in the United States, with more than twelve million anglers visiting U.S. coastal regions each year (NOAA Fisheries 2011a). Alaska is a top destination for anglers who are drawn to the state's abundance of salmon and bottom fish and the excitement of fishing in this "last frontier."

The economic benefits of recreational fishing have spread throughout Alaska's communities, with anglers paying for travel, lodging, hospitality, guide services, licenses, equipment, supplies, tackle and fish processing. In 2011, recreational fishing in Alaska generated approximately 6,300 jobs, and anglers spent more than $446 million (NMFS 2012).

Pacific Halibut (*Hippoglossus stenolepisis*) is Alaska's most commonly caught recreational species (NMFS 2012). Known for its delicate and tasty meat, halibut is a prized trophy fish, with some individuals growing more than eight feet long and over 500 pounds (NPFMC 2012a, 33). The North Pacific Fishery Management Council (NPFMC) has managed "guided" anglers (those who use the services of a guide or charter boat) in Southeast and Southcentral Alaska under a Guideline Harvest Level (GHL) program since 2003, with daily bag limits and annual target harvest levels. In 2014, a new Catch Sharing Plan (CSP) will replace the GHL. Under the CSP, the NPFMC will continue to manage the guided sport (charter) sector under daily bag limits and annual target harvest levels, but the guided sector will share a combined annual catch limit with the commercial halibut fishery. The NPFMC manages "unguided" or private anglers (those who fish on their own) with daily bag limits, and no annual target harvest levels.

Pacific halibut is also a highly valued commercial species, with a well-developed commercial halibut fishery that has been in operation since the late 1880s. Commercial fisheries have shaped the character of Alaska's coastal communities, providing jobs on vessels, in fishing plants, and within the related dockside industries. The commercial halibut longline fishery, has been managed under an Individual Fishing Quota (IFQ) program since 1995. Under this program, the total annual allowable catch is divided into shares, or quota, and allocated to individual fishermen who can harvest, lease (in some circumstances), or sell their IFQ.

Since the sport and commercial halibut fisheries are targeting the same resource, there is tension between the two sectors over access to that resource. The International Pacific Halibut Commission (IPHC) has historically set annual commercial catch limits after deducting the previous years' bycatch, wastage, and non-commercial (sport and subsistence) catches off the top. As a result, there has been a direct correlation between increased halibut sport catch, and decreased commercial allocation. An increase in sport harvest has directly decreased the amount of fish available to commercial fishermen under the IFQ program, thus any growth in the charter fleet has been viewed as a de facto reallocation of halibut from the commercial to the charter sector. For years, commercial interests with strong political support have lobbied the NPFMC to take action to prevent the erosion of their allocation.

The situation has been exacerbated in recent years due to decreasing fish stocks, heightened environmental concerns, and increasing restrictions. Pacific halibut stocks are in decline, with a 50% decrease in exploitable biomass over the past decade (NPFMC 2012b). In response, the IPHC has taken aggressive action to reduce harvests, lowering the overall catch limit for all areas and sectors by more than 58% from a high of 74.92 million pounds in 2002 to a low of 31.03 million pounds in 2013 (Leaman et al. 2013). IPHC Regulatory Area 2C (Southeast Alaska) has been the hardest hit, both in the sport and commercial sectors. Area 2C commercial catch limits dropped by nearly 80%, from 10.93 million pounds in 2005 to 2.33 million pounds in 2011 (this was back up slightly to 2.97 million pounds in 2013). The charter sector's GHL dropped from 1.432 million pounds in 2007 to 0.788 million pounds in 2009, with the traditional two-halibut of any size daily bag limit reduced year after year until it reached an historic low of one halibut per day equal to or under 37 inches in length in 2011.[1] The resulting restrictions have greatly impacted commercial fishermen, charter businesses, and the local communities that depend on them.

These limitations threaten the long-term economic viability of Alaska's guided sport halibut fishery and the communities that depend on it.

The NPFMC has spent countless hours trying to resolve allocation conflicts. After years of planning and a failed attempt to absorb the guided sport sector into the IFQ program, the NPFMC proposed the Catch Sharing Plan (CSP), which has a combined annual catch limit for the commercial and charter sectors, with each receiving a percentage of the allowable harvest. The exact percentage will vary based on abundance. Under the CSP, the guided sport fishery's catch will no longer be deducted before setting the commercial catch limit. In October 2012, the NPFMC took final action on the CSP and it is scheduled for implementation in 2014.

Unfortunately, while commercial fishermen have some economic relief when stock abundance declines, since ex-vessel prices tend to increase when supply is low and demand is high, the charter fleet cannot increase prices when there is less fishing opportunity for guided anglers. While commercial fishermen have the freedom to buy and sell IFQ to adjust to the needs of individual business plans, the guided sport fishery has no mechanism to purchase additional allocation to increase fishing opportunities in times of low abundance. These limitations threaten the long-term economic viability of Alaska's guided sport halibut fishery and the communities that depend on it.

For several years, members of the halibut charter sector have been discussing a concept that could permanently increase guided angler allocation while working within existing catch limits. Through this concept, the guided sport fishery would purchase commercial halibut quota from willing IFQ sellers and hold it in a common "pool" for all guided anglers. This pool of quota could then be used to increase the guided angler allocation so that Area 3A (Southcentral Alaska) would be able to maintain its historic daily bag limit of two fish of any size, and Area 2C (Southeast Alaska) would eventually return to two halibut per day of any size in times of high abundance. To purchase quota from IFQ holders, an organization representing guided anglers would become a legal participant of Alaska's Halibut and Sablefish IFQ program. This would be the first ever, pool-based catch share plan for a recreational sector.

In 2010, the National Fish and Wildlife Foundation announced its new Fisheries Innovation Fund established "to foster innovation in US fisheries and support effective participation of fishermen and fishing communities in the design and implementation of catch-share fisheries." Two charter associations, the Alaska Charter Association (ACA) and Southeast Alaska Guides Organization (SEAGO), submitted a joint proposal to research the concept of developing this pool-based catch share plan for

1 The decline in Area 2C was in part due to the IPHC's 2008 adoption of a coastwide assessment approach to estimating exploitable biomass that shifted the balance of apportionment from eastern to western Alaska.

Alaska's guided recreational fishery. The organizations received funding, and in May 2011, established the Catch Accountability Through Compensated Halibut (CATCH) project, a 501(c)6 organization, to research the feasibility and applicability of the plan. This report, prepared by the CATCH project, provides an overview of the research findings, with recommendations for how such a program could best be implemented.

Although this report examines the concept of a recreational catch share plan as it applies to Alaska's guided halibut sport fishery, the concept has been designed to serve as a prototype for any fishery where allocations have led to decreased fishing opportunities for recreational anglers. It stands as an innovative case study on how to apply a catch share program to a mixed-use fishery.

Problem Statement

In recent years, declining Pacific halibut stocks have prompted regulators to increase restrictions for Alaska's guided anglers. Charter operators, who depend on guided angler business, are struggling in the face of their clients' declining fishing opportunities. There is currently no mechanism for the guided sector as a whole to increase its allocation, other than through the North Pacific Fishery Management Council's authority to reallocate halibut resources between user groups. This situation poses a great risk to the long-term economic viability of the guided sport sector and the coastal communities it supports. The CATCH proposal for a guided angler pool plan offers a permanent, market-based solution for addressing these allocation issues without undermining the conservation goals of the Halibut and Sablefish IFQ Program.

CATCH Concept

The guided angler catch share pool plan is a way for Alaska's guided recreational fishery to supplement its annual regulatory allocation of halibut by purchasing commercial halibut quota and transferring it to the guided recreational sector. The concept would work in the following way:

- An organization or "holding entity" would be formed to purchase, hold, and manage commercial halibut quota share on behalf of the guided recreational sector. The NPFMC and the National Marine Fisheries Service would approve this entity as a qualified participant in the Alaska Halibut and Sablefish IFQ Program.
- The holding entity would obtain funds from a loan, grant, or other funding source, and would use those funds to purchase halibut quota on the open market from willing commercial IFQ sellers. The NPFMC would consider controls to protect the objectives of the IFQ program (e.g., limits on quota share transfers).
- This purchased quota would be held in a common "pool" for the benefit of all guided recreational anglers, and would be used in the following ways:
    - » The pool of quota would be added to the annual guided sector allocation, and the NPFMC and IPHC would use this "revised" allocation when recommending the next season's harvest management measures.

      Annual Allocation + Guided Angler Pool
      =
      Revised Guided Sector Annual Allocation

    - » The pool of quota could be held on reserve, and used as a buffer to account for uncertainties in harvest.
- Over time, the entity would purchase enough quota to make a meaningful impact on the guided sector's annual harvest measures.
- The guided sector would retire its debt through some form of long-term funding mechanism such as a halibut stamp, charter fee, or combination of financing tools.
- The charter sector would work with state and federal agencies to improve accountability tools and reporting requirements to ensure guided anglers participate with the level of accountability required for a catch share program.
- Quota share should be fully transferable (two-way) between sectors, and retain its original commercial designation.

GOAL, OBJECTIVES AND OUTCOMES

Goal

To maintain or increase guided angler halibut fishing opportunities in Alaska (IPHC Regulatory Areas 2C and 3A) through an open market transfer of halibut quota from the commercial sector to guided anglers in common.

Objectives

- Southcentral Alaska (Area 3A) maintains a two halibut of any size daily bag limit.
- Southeast Alaska (Area 2C) reaches a one halibut of any size daily bag limit in times of low abundance, and a two halibut of any size daily bag limit in times of high abundance.

Outcomes

Immediately, a "willing seller/willing buyer" IFQ market would be established, allowing the transfer of halibut quota between the commercial and guided recreational sectors. Commercial fishermen interested in selling their quota would benefit from a new buyer on the market. Commercial fishermen would be compensated when halibut is moved from commercial to recreational use.

After a few years, the guided angler allocation would have a small but growing buffer to account for potential fluctuations in angler demand. With this buffer and new reporting and accountability tools, the guided recreational sector would have a means to adjust to uncertainties in guided angler harvest.

This would reduce the potential for overharvest by the guided recreational sector that would impact the future yields for both the commercial and recreational fisheries. The program would help achieve conservation goals and reduce the tension between the charter and commercial sectors.

In the long-term, stability in regulations would bring better business stability and market predictability for charter operators. This would increase fishing opportunities for guided anglers, even in times of low abundance, thereby preserving public access to the resource. Charter operators and their staff, supporting businesses, and Alaska's rural coastal communities would all benefit from a sustainable halibut sport fishing industry. Since all charter operators would benefit equally through the pool plan, this would provide predictable and equal access to the halibut resource for all guided anglers, and not just through those operators who can access GAF under the new Catch Sharing Plan.

By achieving conservation goals, preserving public access, and lessening the tension between fishing sectors, this program would free up time and resources for the NPFMC to focus on other management objectives. Regulators and managers would not have to revisit the issue each year.

Other mixed-use fisheries across the U.S. and throughout the world would be able to use this innovative recreational catch share plan as a model for their own fisheries.

Research Methodology

The CATCH Board tasked the project team with determining whether the concept of a guided angler pool plan could work in Southeast and Southcentral Alaska, how it could work, and how it could best meet the needs of the various stakeholders. The research plan involved examining a range of choices from which the CATCH Board could consider when making its final recommendations. Between the summer of 2011 and the winter of 2013, the CATCH project team used the following research approach:

Expert Consultation: The research team relied on the help of experts throughout all stages of the project, whether through telephone interviews, e-mail exchanges, in-person meetings, attendance at workshops, or as hired consultants. Experts included: staff from the National Marine Fisheries Service, North Pacific Fishery Management Council, International Pacific Halibut Commission and Alaska Department of Fish and Game; economists; lawyers, non-governmental organizations; and other experts in the field. Economists from the Research Group conducted an extensive economic analysis of the CATCH concept. With the support of the Environmental Defense Fund, K&L Gates, an international law firm, provided us with early legal analysis. Results from this expert consultation are referenced throughout the report.

Document Review: The research team reviewed a wide range of materials including National Marine Fisheries Service regulatory analyses, IPHC reports, NPFMC minutes and analyses, Charter Halibut Stakeholder Committee meeting minutes, workshop proceedings, reports by non-governmental organizations, websites, and academic papers (see list of references).

Stakeholder Meetings: CATCH held a number of meetings with commercial and recreational stakeholders. At these meetings, the research team received first-hand information regarding stakeholder concerns about a guided angler pool plan, and feedback on features necessary to gain stakeholder support. CATCH also held a two-day charter sector stakeholder workshop in Sitka, Alaska, in which eighteen stakeholders went through the details of a conceptual guided angler pool plan, and gave recommendations to the CATCH Board on the final design (Appendix C).

Stakeholder Surveys: CATCH developed and distributed two surveys to charter stakeholders (127 and 95 responses) and one survey to guided anglers (491 responses). These informal surveys were designed to obtain general feedback from a larger number of people (see Appendix C).

Organization of Report

Section I provides an introduction; problem statement; overview of the concept; goals, objectives, and outcomes; and research methodology.

Section II presents background information including a description of halibut management in Alaska, an explanation of catch shares, and an overview of Alaska's commercial and sport halibut fisheries. The authors drafted this section to provide context for the study, but also to raise awareness among charter operators, in hopes that it will increase their involvement in management issues.

Section III offers a synthesis of key findings based on expert consultation, stakeholder feedback, and document review. It examines the challenge of integrating a recreational fishery into a catch share program, delves deeper into the concept of a guided angler pool, and examines different options for a holding entity, transfer mechanisms, accountability, and funding. Each subsection presents different alternatives and their limitations, and concludes with final recommendations on that particular issue.

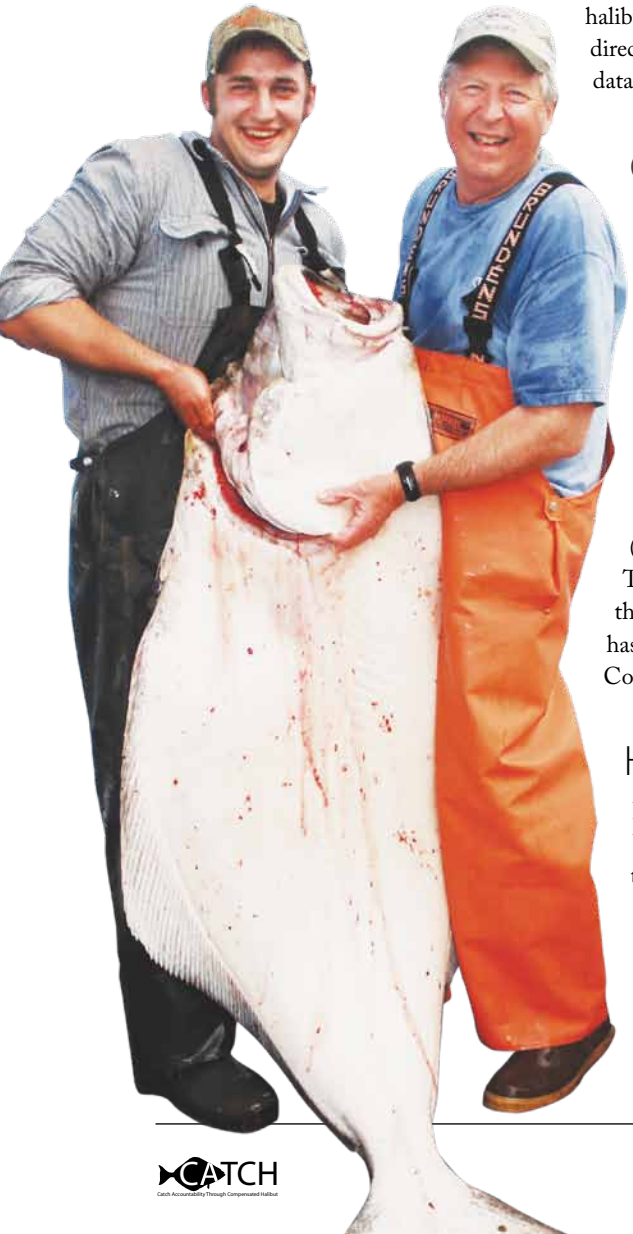
Section IV presents the conclusions and a summary of all recommendations.

2

Background

Halibut Management in Alaska

The Pacific halibut fishery is managed at the international and national levels, with assistance at the state level (see Figure 1). The International Pacific Halibut Commission (IPHC) manages halibut under a treaty between the U.S. and Canada. Each year, prior to the fishing season, the IPHC recommends to the U.S. and Canadian governments catch limits for each of the IPHC regulatory areas. At the federal level, the Northern Pacific Halibut Act of 1982 gives authority to the Secretary of State (with the concurrence of the Secretary of Commerce) to accept or reject the IPHC recommendations. If accepted, NOAA's National Marine Fisheries Service publishes and implements the regulations. The North Pacific Fishery Management Council (established by the Magnuson-Stevens Act) decides how to allocate halibut catch among the various user groups. Although the State of Alaska does not have direct management authority over halibut, it does play an important role in issuing licenses, data collection, analysis, and enforcement.



GOVERNING ACTS

Halibut Convention

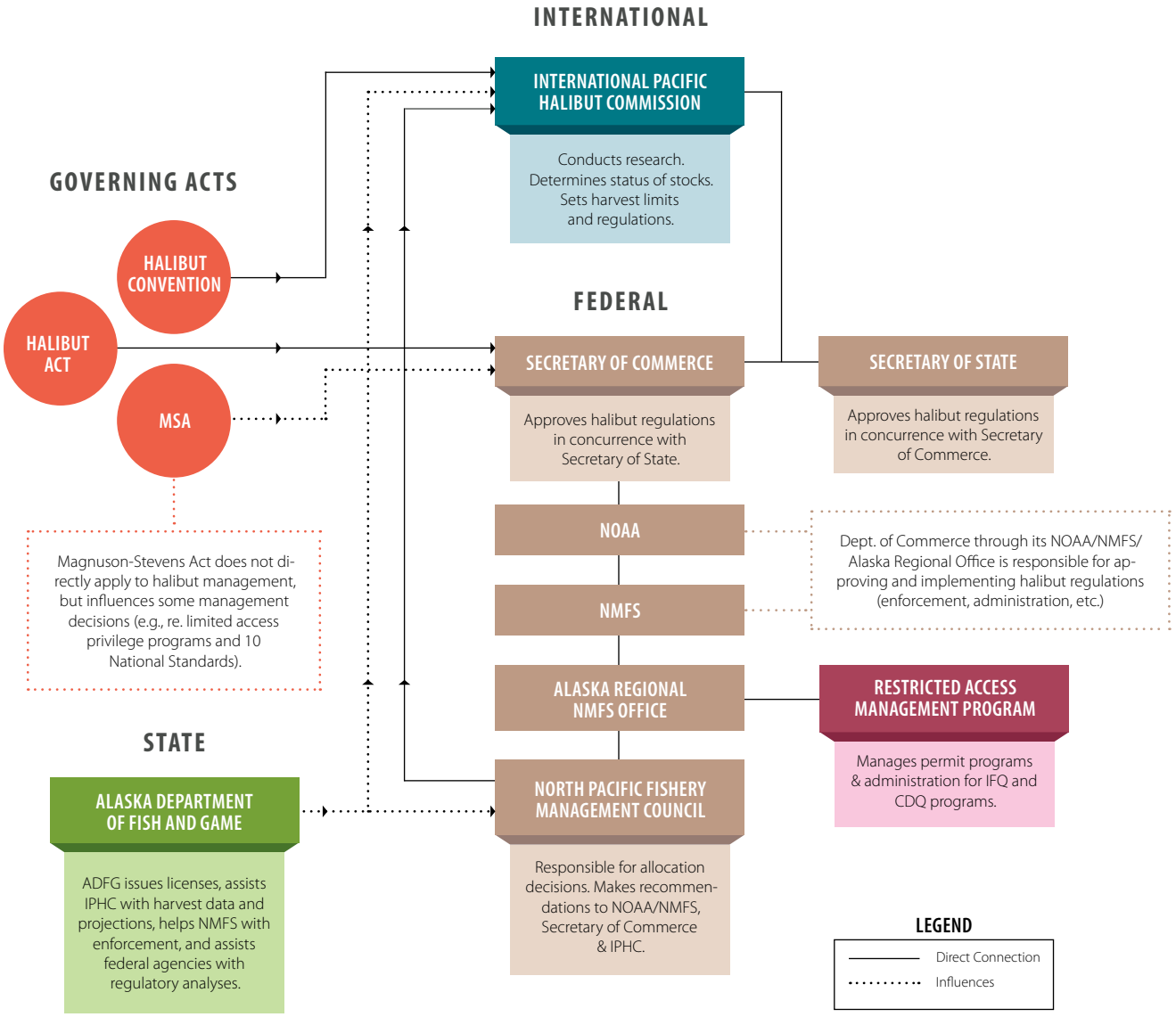
In 1923, because of concerns over declining halibut stocks, Canada and the U.S. signed the *Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean* (Convention), an agreement between the two countries concerning the conservation and management of Pacific halibut. The Convention appointed the IPHC as the body responsible for carrying out the Convention (see description of IPHC below).

The Convention requires that all fishing for Pacific halibut within Convention waters (from California to the Bering Sea) comply with the Convention and IPHC regulations. The Convention also permits each country to establish additional halibut regulations that are more restrictive than those adopted by the IPHC (Ginter 2006). The Convention has been revised several times, most recently with the 1979 Protocol to the Halibut Convention of 1953.

Halibut Act

In the U.S., the fisheries for Pacific halibut are governed under the authority of the Northern Pacific Halibut Act of 1982 (Halibut Act), which authorizes the government to implement the Halibut Convention. The Halibut Act gives the Secretary of State (with the concurrence of the Secretary of Commerce) the authority and responsibility

FIGURE 1: Overview of Halibut Management



to accept or reject, and carry out, IPHC recommendations. It also authorizes the regional fishery management councils to "… develop regulations governing the United States portion of Convention waters, including limited access regulations, applicable to nationals or vessels of the United States, or both, which are in addition to, and not in conflict with, regulations adopted by the [IPHC]" (The Northern Pacific Halibut Act 1982). The Halibut Act does not provide any authority to state governments to directly regulate halibut.

Magnuson-Stevens Act

The Magnuson-Stevens Fishery Conservation and Management Act, commonly referred to as the Magnuson-Stevens Act or MSA, is the primary law governing marine fisheries within the U.S. Exclusive Economic Zone. It was originally developed in 1976 to control foreign fishing off the U.S. coast and to promote the domestic fishing industry. It has been amended many times over the years, most recently with the *Sustainable Fisheries Act of 1996* and the *Magnuson-Stevens Fishery Conservation and Management Reauthorization Act*, as amended through January 12, 2007.

The Magnuson-Stevens Act requires agencies to undertake efforts to prevent overfishing, rebuild overfished species, ensure conservation, minimize bycatch, protect essential fish habitats, and maximize the potential of U.S. fishery resources. It also requires agencies to consider the importance of fishery resources to fishing communities, encourage sustained participation of those communities, and, to the extent possible, minimize the adverse economic impacts of conservation and management measures on such communities. The reauthorized Magnuson-Stevens Act calls for the establishment of annual catch limits and accountability measures.

Due to the unique federal status of halibut, only certain provisions of the Magnuson-Stevens Act apply to the management of halibut. Primarily, the Magnuson-Stevens Act explains the role and operations of eight regional fishery management councils, including the NPFMC, which is responsible for allocating Alaska's halibut catch between user groups. Although the Magnuson-Stevens Act created the NPFMC, the Halibut Act grants the NPFMC authority to develop halibut regulations, which are then adopted by the Secretary of Commerce.

REGULATORY AGENCIES

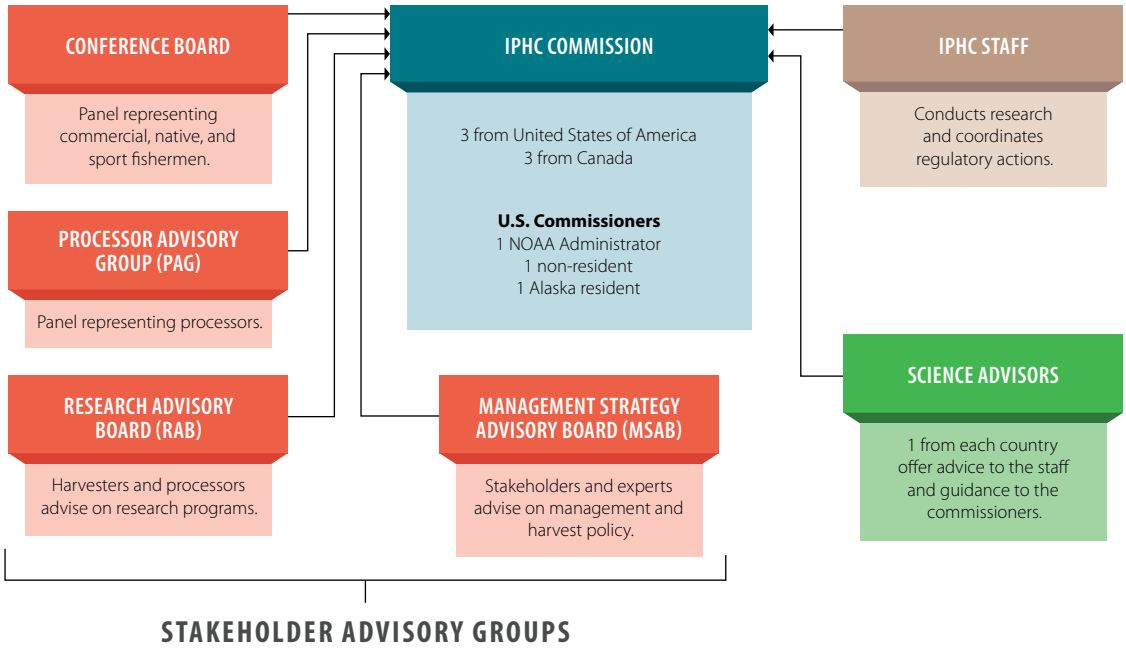
International Pacific Halibut Commission

The International Pacific Halibut Commission (IPHC) has managed the halibut resource and fishery since 1923. The IPHC was established to implement the Halibut Convention "to conserve, manage, and rebuild the halibut stocks in the Convention Areas to those levels that would achieve and maintain the maximum sustainable yield from the fishery." Maximum sustainable yield (aimed at maximizing biological yield) was changed to optimum sustainable yield (allowing for economic, social, and other considerations) by the amending 1979 Protocol.

The IPHC consists of a Commission and a staff. The Commission is comprised of six members, three of which are government-appointed commissioners from each of the respective countries. Of the U.S. Commissioners, one is an official from the National Oceanic and Atmospheric Administration (NOAA) that also sits on the NPFMC, one an Alaska resident, and one a non-resident of Alaska. Of these three U.S. Commissioners, one is a voting member of the NPFMC. The IPHC staff consists of approximately 30 employees, including fishery biologists, administrative personnel and support staff. The staff undertakes research programs and coordinates regulatory actions.

A Conference Board, a Processor Advisory Group, a Research Advisory Board (RAB), and a Management Strategy Advisory Board (MSAB) act on an advisory level to the IPHC. The Conference Board is a panel representing U.S. and Canadian commercial, native, and sport halibut fishermen. The IPHC created the Conference Board in 1931 to ensure that industry, sport, and native harvester's perspectives are represented at the Annual Meetings. Similarly, the IPHC created the Processor Advisory Group (PAG) in 1996 to represent halibut processors. The Research Advisory Board, created in 1999, represents both harvesters and processors who advise the IPHC staff on Commission research programs. The Management Strategy Advisory Board, introduced in 2013, advises the IPHC on management objectives and harvest policy, and is comprised of harvesters, managers, processors, academia, IPHC staff, and IPHC science advisors. An Alaska Department of Fish and Game (ADF&G) representative attends the meetings as an analyst.

FIGURE 2: IPHC Organizational Structure



The main functions of the IPHC are to conduct scientific studies on halibut fisheries, develop regulations to achieve optimal utilization of halibut stocks, and submit regulatory proposals to the two governments for approval. The IPHC establishes catch limits for each regulatory area using commercial fishery data and scientific surveys, elaborate models, and input from stakeholders (see discussion below on Determining Catch Limits). At the annual IPHC meeting, the staff and Commission discuss and approve the budgets, research plans, biomass estimates, catch recommendations, and regulatory proposals. In the U.S., these recommendations depend on Secretary of State approval, with concurrence from the Secretary of Commerce.

U.S. Department of State

The U.S. Department of State (also called the State Department) is the federal department concerned with foreign affairs. The head of the Department, the Secretary of State, is the President's chief foreign affairs advisor. The Halibut Act gives authority to the Secretary of State to accept or reject the IPHC recommendations on halibut management and catch limits (with the concurrence of the Secretary of Commerce). The Secretary of State (in consultation with the Secretary of Commerce) may also designate from time to time alternate U.S. Commissioners to the IPHC. The U.S. Department of State also has one non-voting seat on the NPFMC.

Department of Commerce/NOAA's National Marine Fisheries Service

The U.S. Department of Commerce is the federal department concerned with promoting economic growth and trade. It has twelve operating units, including the National Oceanic and Atmospheric Administration (NOAA), which is the scientific unit focusing on oceans and the atmosphere. Under NOAA, the National Marine Fisheries Service (NMFS) is responsible for the management, conservation and protection of living marine resources within the U.S. Exclusive Economic Zone (water three to 200 miles offshore). The Alaska Region of NOAA's NMFS oversees sustainable fisheries off Alaska, with Pacific halibut being the only recreational species that they manage (the State manages all other recreational species).

Each year, the Secretary of Commerce (in concurrence with the Secretary of State) accepts or rejects the IPHC recommendations. If accepted, NMFS publishes a rule in the *Federal Register* implementing the catch limits as part of its annual management measures. Once accepted, NMFS is the primary agency responsible for implementing the regulations (with support from the State). NMFS also supports the NPFMC with research, environmental modeling, stock assessment advice, analytical assistance, regulatory implementation, and in-season monitoring and management

(NPFMC 2009). In the past, NMFS provided the State with funding for data collection programs to support recreational fishery management. NMFS' Restricted Access Management (RAM) program manages Alaska's region permit programs including the Charter Halibut Limited Access Program, and prepares reports on landings in the halibut IFQ and Community Development Quota programs. The Alaska Regional Director for NMFS has a voting seat on the NPFMC.

North Pacific Fishery Management Council

The North Pacific Fishery Management Council (NPFMC) is one of eight regional councils in the U.S. established by the Magnuson-Stevens Act to oversee management of the nation's fisheries. The NPFMC is composed of 15 members:

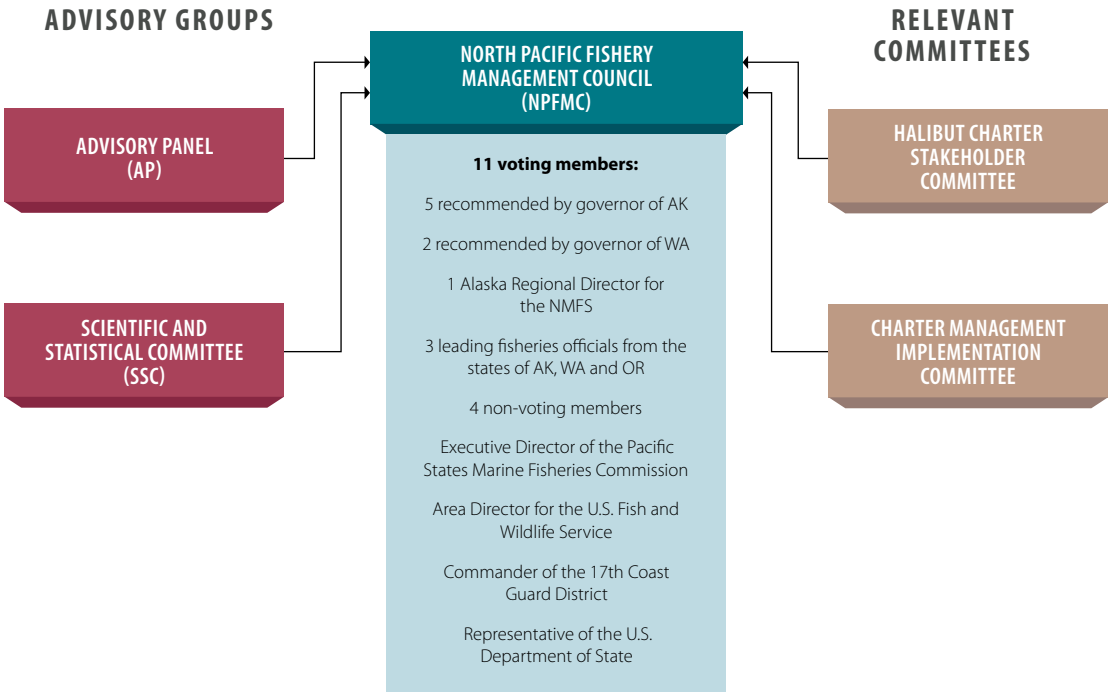
11 voting members (mix of stakeholder and government)

- 5 public members appointed by the Governor of Alaska[1]
- 2 public members appointed by the Governor of Washington
- 1 Alaska Regional Administrator of NOAA Fisheries
- 3 leading fisheries officials from the States of Alaska, Washington, and Oregon

4 Non-Voting Members

- Executive Director of the Pacific States Marine Fisheries Commission
- Area Director for the U.S. Fish and Wildlife Service
- Commander of the 17th Coast Guard District
- Representative of the U.S. Department of State

FIGURE 3: NPFMC Organization and Advisory Groups



1 Four of these members are currently from the commercial fishing sector while one member is from the recreational fishing sector.

The NPFMC meets five to six times each year, and receives advice at each meeting from its 20-member Advisory Panel (AP) representing user groups, environmentalists, recreational fishermen, and consumer groups; and from its 12-member Scientific and Statistical Committee (SSC) composed of expert resource economists and biologists. The NPFMC also has ad hoc Committees, which advise NPFMC members on specific issues. Committees relevant to this project include the Charter Management Implementation Committee established to recommend harvest measures to the NPFMC, and the Halibut Charter Stakeholder Committee formed to recommend long term solutions to charter halibut management.

The NPFMC is responsible for allocating the halibut resource among competing commercial, sport, and subsistence users. It has broad discretion to implement allocation plans and develop regulations that are in addition to, and not in conflict with, regulations adopted by the IPHC. The NPFMC is also responsible for making decisions regarding limited access programs.

It is important to note that the NPFMC has no independent regulatory authority over halibut. The conservation and management measures developed by the NPFMC are forwarded for approval to the Secretary of Commerce, who delegates authority to NMFS to ensure consistency with the requirements of the Convention and all applicable laws. Final authority rests with the Secretary of Commerce.

IPHC DEFINITIONS

Biomass: Weight in net (head off, eviscerated) pounds.

CEY (Constant Exploitation Yield): Amount of yield available for harvest, measured as TCEY or FCEY.

Ebio (Exploitable biomass): Fraction of the Total biomass catchable by hook and line gear.

FCEY (Fishery Constant Exploitation Yield): Amount of yield available for the commercial and guided sport fisheries.

Sbio (Spawning Biomass): Female spawning biomass, measured in weight, which is comprised only of sexually mature female halibut.

Reference points: In fisheries management, biological reference points (e.g., threshold or limit reference points) are used as indicators of stock status.

The Alaska Department of Fish & Game

The Alaska Department of Fish and Game (ADF&G) does not have direct management authority over halibut in Alaska waters. However, ADF&G manages most recreational fisheries in Alaska, and because of the significant overlap between halibut and non-halibut recreational fishing, it still plays an important role in halibut management. The Division of Sport Fish within ADF&G is charged with managing recreational fishing within State waters. Division of Sport Fish personnel also serve as advisors to the Alaska Board of Fisheries, which is responsible for regulatory and fisheries resource allocation decisions, with the exception of halibut (ADF&G 2010).

ADF&G issues licenses to anglers, sport fishing businesses, and guides. ADF&G also administers the charter vessel logbook program, and estimates recreational harvest and effort using creel census, logbook, and mail survey information. Furthermore, ADF&G leads research on stock structure, estimates characteristics of harvest and catch, estimates fishery performance indicators, and conducts research on angler attitudes and opinions. These surveys contribute to the IPHC's forecasting of halibut stock abundance. According to Meyer and Stock (2002), "the ADF&G objective with respect to halibut management is to provide the agencies… with the best possible information regarding the recreational halibut fishery, so that management and allocation decisions can be made that optimize the social and economic benefits of the fishery." ADF&G has influence over the NPFMC process with a Commissioner of ADF&G (or designee) as a voting member of the NPFMC.

DETERMINING HALIBUT CATCH LIMITS

Every year, the IPHC sets fishery catch limits for each Regulatory Area. They determine these limits based on how much halibut can be harvested from each Area while maintaining the long-term productivity and health of the stock. The IPHC undertakes the following steps:

Estimate the Total Biomass (Tbio) and Exploitable Biomass (Ebio)

Target harvest rate: percentage of the exploitable biomass that can be harvested without jeopardizing the sustainability of the stock.

Tbio (Total biomass): The biomass of all halibut coastwide, generally ages 8 and older.

TCEY (Total Constant Exploitation Yield): The total amount of yield available for harvest in an area.

Source: IPHC 2012a

The IPHC staff starts by estimating: (a) the total biomass (Tbio) of Pacific halibut that year, which is the total amount of halibut coastwide by weight in pounds, and; (b) the exploitable biomass (Ebio), which is the fraction of the Tbio catchable by hook and line gear (generally fish over 32 inches in length). The Ebio is then apportioned (or divided) into specific amounts for each Regulatory Area for management purposes.

The scientists arrive at these estimates using all available data from fishery catch sampling and scientific surveys, in particular the IPHC's annual standardized stock assessment (SSA) survey. The survey takes place every summer in a coastwide grid of approximately 1250 stations from the Oregon/California border through Washington, British Columbia, Southeast Alaska, central and western Gulf of Alaska, Aleutian Islands, and up to the Bering Sea continental shelf. The surveys all use the same gear and bait, a prescribed daily fishing schedule, and other standardized procedures to reduce the chance for bias. The surveys produce information such as age, sex composition, and changes in distribution within an area.

The results of the SSA, which give a good picture of the regional distribution of the halibut stock during the summer feeding season, are used to apportion the Ebio among the Regulatory Areas. The IPHC staff uses and weights survey results from the last three years to apportion the coastwide Ebio among areas, with data from the most recent year receiving the largest weighting. After making refinements and adjustments to reduce bias and ensure objectivity, they arrive at the final regulatory area Ebio (see boxed insert below on Coastwide Assessment for more details).

COASTWIDE ASSESSMENT

In 2008, the IPHC adopted a new approach to estimating exploitable biomass, which dramatically impacted commercial and charter fishermen in Area 2C. For years, IPHC staff estimated the halibut stock biomass through a closed-area assessment in each regulatory area. In doing so, scientists relied on the assumption that the stock of fish of catchable size in each area was closed, meaning the net migration (the rate of fish moving in and out of the area) was negligible. However, in the mid-2000s it became apparent that there was a continuing eastward net migration of catchable fish from the western Gulf of Alaska (Areas 3B and 4) to the eastern side (Area 2). The closed-area stock assessments were thereby producing underestimates of abundance in the western areas and overestimates of abundance in the eastern areas (Clark and Hare 2006; Clark and Hare 2007).

To account for this west-to-east migration of catchable-sized fish, in 2008 the IPHC introduced a new coastwide assessment approach to estimating exploitable biomass. Instead of closed-area assessments, scientists began assessing halibut stocks as a single, coastwide unit to accommodate movement of halibut. They then apportioned (or divided) the single estimate into IPHC regulatory areas using data from the IPHC setline stock assessment survey and estimates of bottom area from each regulatory area. Scientists calculated an index of abundance for each regulatory area by taking three years of data from the setline surveys (in weight per unit effort, or WPUE) and multiplying that WPUE by total bottom area between 0 and 400 fm. As explained by Hare (2009), "the logic of this index is that survey WPUE can be regarded as an index of density, so multiplying it by bottom area gives a quantity proportional to total abundance."

The shift from closed-area to coastwide assessment shifted the balance of apportionment from eastern to western Alaska. This contributed to the sharp decline in Area 2C's Fishery CEY, which dropped from 10.33 million pounds in 2006 to 4.98 million pounds in 2007 and the GHL, which dropped from 1.432 million pounds in 2007 to 0.931 million pounds in 2008.

Total Constant Exploitation Yield and Target Harvest Rate

The IPHC staff members then determine the amount of fish that can be sustainably harvested by all users in an area in the coming year, which is termed the **Total Constant Exploitation Yield (TCEY)**[2]. The TCEY is calculated by multiplying the estimate of exploitable biomass by the IPHC's target harvest rate.

TCEY = Ebio x Target Harvest Rate

The **target harvest rate** is the percent of the exploitable biomass that the IPHC has determined can be harvested without jeopardizing the long-term productivity of the stock. The target harvest rate is 21.5% for Areas 2A, 2B, 2C and 3A and 16.1% for Areas 3B, 4A, 4B and 4CDE (due to greater conservation needs in these areas).[3]

The IPHC staff has developed target harvest rates through a series of modeling exercises that model the long-term productivity of the stock and the appropriate rate of removal that will keep the stock from falling below long-term biological reference points. In fisheries management, **reference points** are used as indicators of a stock's status. If a stock falls below a "limit" reference point, or risks falling below it, the harvest policy dictates that conservation and management action should be taken. In the case of Pacific halibut, the IPHC uses **spawning biomass (Sbio)** for its indicator of stock status. Sbio is the total weight of all females in the stock that are old enough to spawn.[4] The IPHC harvest policy states that harvest rates can remain unchanged when Sbio is above the **threshold** (or precautionary) reference point of 30% of total unfished Sbio (the state of Sbio had it not experienced human fishing effort). However, harvest rates are reduced if Sbio falls below the threshold reference point until Sbio hits the **limit** reference point of 20% of total unfished Sbio. Once it hits the limit reference point, the harvest rate is reduced to zero and fishing must stop. Presently, the stock is at about 35% of unfished Sbio (Gregg H. Williams, personal communication November 26, 2012).

Fishery Constant Exploitation Yield

After determining the TCEY, the IPHC then calculates the Fishery CEY (FCEY), which is the amount of fish available for the directed and guided sport fisheries. The FCEY is calculated by subtracting all "Other Removals" from the TCEY.

FCEY = TCEY – Other Removals

"Other Removals" is the collective term used to describe removals that fall outside the IPHC's jurisdiction, such as bycatch mortality by groundfish fisheries (e.g., trawl and longline fisheries), or removals that do not have explicit limits including unguided sport and subsistence or personal use removals. The IPHC subtracts these other removals from the TCEY, and the remaining amount is the commercial and guided sport combined FCEY.[5]

2 Although the literature often references the CEY, it should only be used in reference to Total CEY (TCEY) or Fishery CEY (FCEY).

3 In 2013, the harvest rates that resulted from the adopted catch limits were higher than the target harvest rates. The Commission still employs target harvest rates as part of its harvest policy, and these remain unchanged for 2013.

4 Sexual maturity begins as early as 8. IPHC estimates that 50% of the females are mature by age 13 and 100% by age 20 (IPHC 2012a)

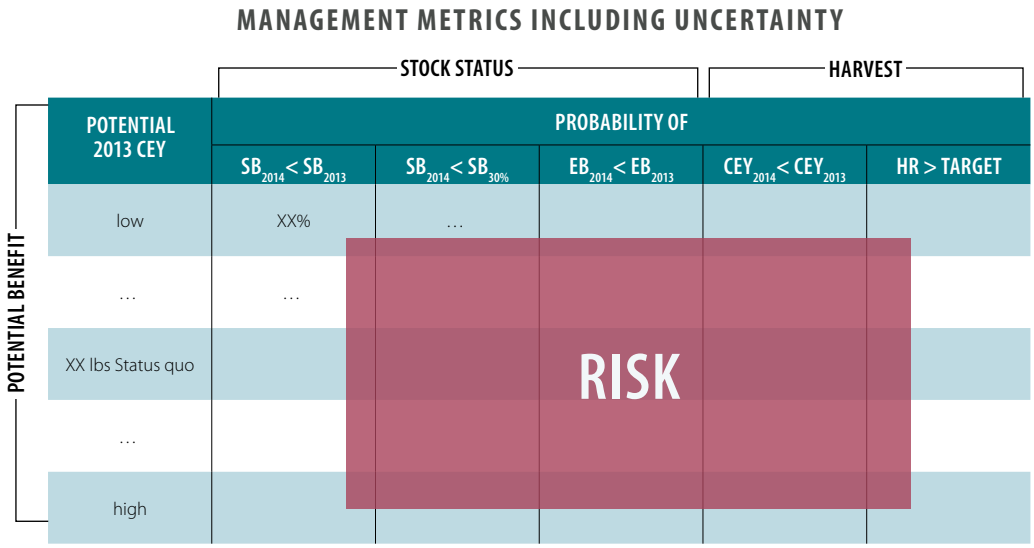
5 Prior to 2014, guided sport removals also fell under "other removals," but this will change with the implementation of the Catch Sharing Plan.

There are some exceptions to this approach in Areas 2A and 2B because of their particular allocation plans. In addition, for bycatch and wastage, only that portion of the catch greater than 26 inches is included in these calculations.

Staff Harvest Advice

In 2013, IPHC started using a risk-based decision making approach for determining halibut fishery catch limits. Instead of a single recommended catch limit for each Regulatory Area, staff advice is now summarized in the form of a risk-benefit table with multiple options that account for the uncertainty of the stock assessments.[6] This approach, which is becoming common practice in the world of fishery management, is intended to provide Commissioners with a better understanding of the risks associated with different fishery harvest options before setting annual catch limits. For example, different catch levels (outcomes) will be examined concerning their impact (risk) on the stock and harvest rates, both in the current and in subsequent years. The Commission and halibut industry will be able to deliberate on these different options before coming up with recommended catch limits. Figure 4 provides an example of how the staff presents advice to the Commission and stakeholders, which began in 2013 (IPHC 2012b).

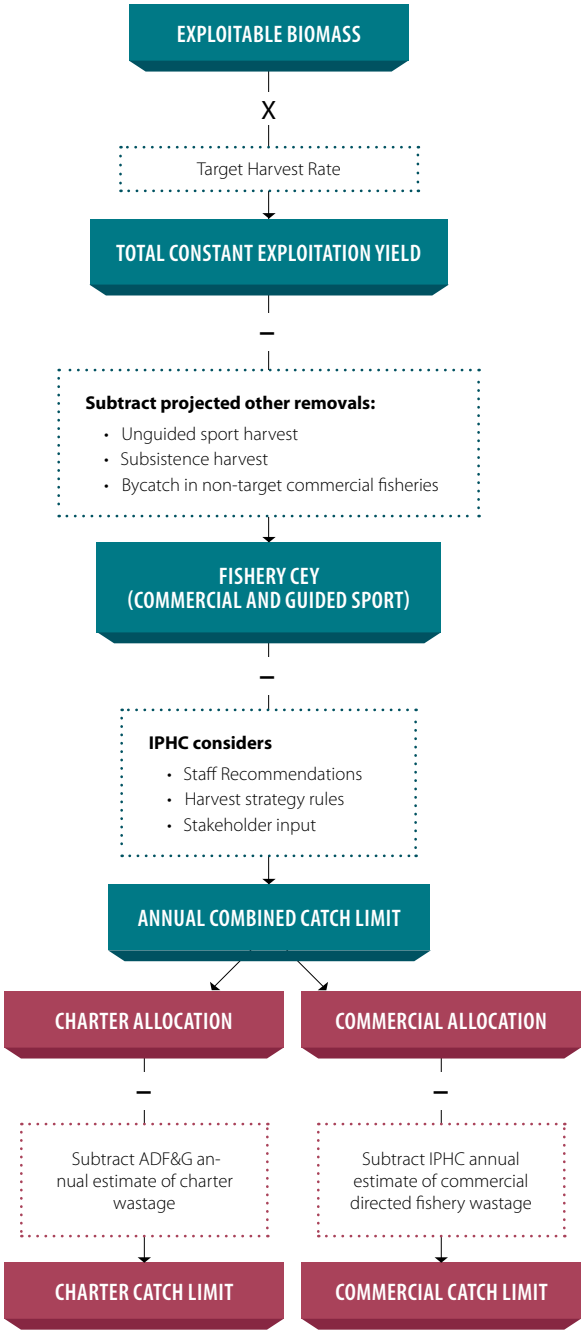
FIGURE 4: Harvest Advice Format



Source: IPHC 2012b

6 Previously, the IPHC staff based their catch limit recommendations on harvest control rules such as Slow Up/Fast Down (SUFastD) and Slow Up/Full Down (SUFullD). These methods produced single numbers for biomass and catch limit recommendations instead of a number of different options, which will be used moving forward.

FIGURE 5: How Catch Limits are Determined



Public Comment and Final Combined Fishery Catch Limits (CFEY)

Finally, the IPHC staff members present their harvest advice at the annual meeting in January, giving time for the halibut fishery stakeholders to discuss and provide comment. Once the meeting commences, the Conference Board and the Processor Advisory Group further discuss the harvest advice and give formal recommendations to the IPHC. The IPHC consider staff and advisory body recommendations, and stakeholder input, before adopting final combined commercial and charter catch limits and other measures.

Commercial and Charter (Guided Sport) Catch Limits

The recently adopted Catch Sharing Plan (2014) divides the FCEY between the commercial and charter sectors based on a percentage allocation, which fluctuates with the level of the FCEY. After applying the appropriate percentage allocation, the CSP policy of separate accountability is implemented, with the IPHC deducting wastage separately from the commercial and charter (guided sport) fisheries. Wastage equates to mortality due to releases of halibut in the sport fishery. After this deduction, each sector is left with its catch limit for the upcoming season..

Status of Halibut Stocks

Pacific halibut stocks are in decline, with a 50% decrease in exploitable biomass over the past decade (NPFMC 2012b). While exploitable biomass (the part of the population allowed to be fished) continues to decline, the total biomass and number of halibut actually remains high. This is because halibut size-at-age is much smaller now than it was 20 years ago. IPHC scientists have shown that much of the total biomass is made of smaller fish, with a general decline in size-at-age across ages, sexes, and areas (NPFMC 2012b, 2012c; Valero 2011).

Scientists and managers are struggling to understand why young halibut are disappearing before they reach spawning age, and why they are growing slower than in the past. Although there is a lot of finger pointing, it is likely due to a combination of factors including competition for food, population densities, incidental catch by trawlers and longliners, biological threats, analytical errors in assessing exploitable mass, and fishing pressure from all sectors.

Recently, there has been a great deal of attention on trawler bycatch as a primary cause of the decline in exploitable biomass. Trawl fisheries, and to a lesser extent hook and line fisheries, have been incidentally catching millions of halibut each year. As a "prohibited species," the trawlers are required by law to discard the halibut, many of them dead, back into the ocean. Until very recently, over 5 million pounds (2,300 metric tons) of halibut bycatch was allowed in the Gulf of Alaska groundfish fisheries annually.[7] By comparison, the average annual catch for guided anglers in both 2C and 3A combined is less than 5 million pounds.[8] According to the IPHC, each pound of bycatch results in lost yield ranging from .9-1.1 pounds, which means that 1 pound of halibut caught as bycatch results in 1.5–1.7 pounds of lost spawning biomass (Hare 2012). Since the IPHC manages halibut based on the biomass of the halibut stock, this directly impacts all halibut fisheries.

Furthermore, IPHC staff recently announced that they might have been overestimating halibut biomass for years. For example, they originally estimated exploitable biomass for 2011 at 317 million pounds. They subsequently decreased this to 292 million pounds, and further to 245 million pounds (Hare 2012). As a result, the harvest rate in previous years was likely much higher than the target rate. Based on the IPHC's retrospective analysis, they should have imposed much more restrictive harvest policies, which likely contributed to over harvesting of the halibut stock during that year and potentially other years as well.

7 Bycatch limits have remained unchanged for trawl fisheries since 1986 and for fixed gear fisheries since 1995. On June 8, 2012, the NPFMC voted to reduce the allowable halibut bycatch by trawlers and longliners by 15%, to be phased in over three years with a targeted implementation in 2014. This amounts to about 311 metric tons, or about 685,000 pounds, once fully implemented.

8 Between 2000 and 2012, the average total catch in pounds for Areas 2C and 3A was 4.540 million pounds (IPHC 2013b).

Catch Shares

"Catch share" is a term used to describe a fishery management strategy that gives individuals or groups' exclusive rights to harvest a share of the total allowable catch (TAC) of a given fishery. There are various catch share types and terms (see Table 1). In general, participants of a catch share program can fish their exclusive portion of the total allowable catch throughout the season, but they are required by regulation to stop fishing when their share is reached. If participants exceed their shares in a given year, they must lease or buy additional shares to cover their overage or they are subject to a penalty or revocation of their privilege (Bonzon et al. 2010).

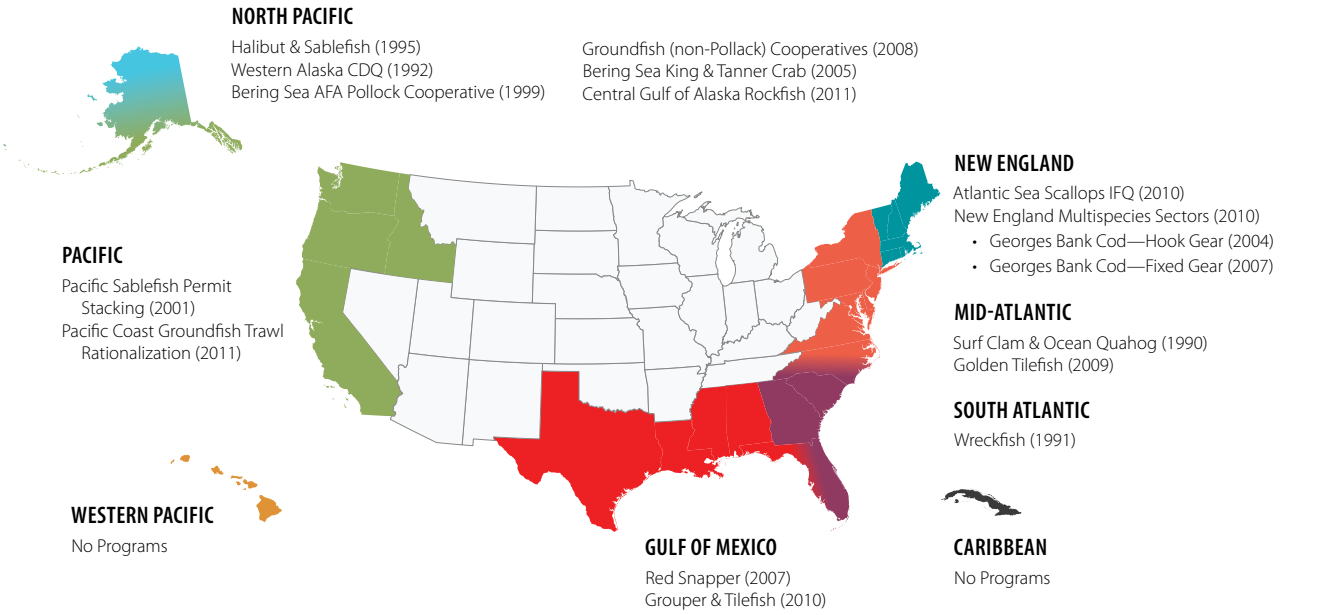
Catch shares were first used in Australia, New Zealand, and Iceland in the 1970s, and are now a common fisheries management tool throughout the world. In 2010, over 275 catch share programs in 35 countries managed more than 520 unique species of fish (Bonzon et al. 2010). The first catch share program in the U.S. was implemented in 1990 in the Mid-Atlantic Surf Clam and Ocean Quahog Fishery (NOAA Fisheries 2013). In 1996, due to concerns about the impacts of IFQs on communities, Congress imposed a moratorium on IFQs in federal fisheries (excluding those already in operation). This moratorium lapsed in 2002, and in 2010, NOAA published a Catch Share Policy encouraging the consideration and use of catch shares as a fishery management tool. The policy states:

> 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 their amendments, and will support the design, implementation, and monitoring of catch share programs (NOAA 2010).

TABLE 1: Catch Share Terminology

CATCH SHARE PROGRAM	EXPLANATION
Limited Access Privilege or Dedicated Access Privilege	Umbrella terms that describe all catch share programs. Limited Access Privilege is used in the Magnuson-Stevens Act and is the preferred term since it encompasses both individuals and communities.
Individual Fishing Quota Individual Quota Individual Vessel Quota	An individual or entity has the privilege to harvest a percentage of the Total Allowable Catch.
Individual Transferable Quota	A type of IFQ that allows quota to be transferred from one individual or entity to another either through sale or lease. Most IFQs are transferable. This term is common in New Zealand and Australia fisheries.
Territorial Use Right Fisheries (TURFs)	Program that grants an exclusive privilege to an individual or entity to fish in a geographically designated fishing ground.

FIGURE 6: Map Showing Catch Share Programs by Region



Source: NOAA Fisheries 2013

Today in the U.S., catch share programs are used in 15 fisheries managed by six regional fishery management councils, with additional programs in development (Figure 6) (NOAA Fisheries 2013).

PROS AND CONS OF CATCH SHARES

Many managers, economists, industry advocates, and environmental groups have praised catch shares for achieving environmental and economic goals (Bonzon et al. 2010; Costello, Gaines and Lynham 2008; Fina 2011; Grafton Nelson and Turris 2005). Proponents claim that compliance to catch limits improves with catch share programs, thereby helping prevent stock collapse and promote fishery sustainability (Branch 2008). Longer seasons provide more stability and predictability for fishermen, helping stabilize fish landings and catch limits, improve product quality, and increase profits (Essington 2010; Grafton, Squires and Fox 2000; Newell, Sanchirico, and Kerr 2005). Catch share programs often aim to address overcapitalization by reducing the number of vessels in operation. This helps participating fishermen further increase profits and reduce operating expenses (Fina 2011). Catch share programs also have a record of improving job stability and safety for fishermen (Knapp 1999). Proponents claim that catch shares increase incentives for participants to conserve the resource, since shareholders are the ones that will be most impacted by overexploitation (Grafton, Nelson and Turris 2005). Studies have also found that catch share programs have resulted in reduced ecological waste, such as discards and bycatch (Branch 2008; Essington 2010).

Despite this support for catch share programs, they are also very controversial, with industry stakeholders, academics, public interest groups, and some politicians pointing to a number of problems (Fina 2011; National Research Council 1999). As Ecotrust Canada (2009) states, "debate about [catch shares] is often polarized and fuelled more by ideology than reality." One of the greatest controversies exists over the fairness of the initial allocation and the effects it has on excluded user groups. Fishermen that do not receive an initial allocation are often forced out of business unless they can afford to purchase or lease quota from shareholders. Crews are said to suffer from reduced compensation as vessel owners struggle to cover the costs of leasing or purchasing quota (Pinkerton and Edwards 2009).

There are also concerns that catch shares in mixed-use fisheries end up marginalizing anglers and charter operators who are not given the same access privilege. As stated by four Gulf of Mexico governors in a letter sent to the Secretary of Commerce in October of 2009:

> Access and opportunity are the lifeblood of recreational fishing. Catch shares limit accessibility for those who do not have an opportunity to participate. While this does not create a problem when the resource is targeted exclusively by one segment, such as commercial fishers, it squeezes out other users when applied to a mixed-use fishery (Perry et al. 2009).

Opponents have also pointed out that without proper controls, such as owner-on-board provisions, some programs have resulted in absentee owners (Ecotrust Canada 2009). Small coastal communities have suffered from outside investors and landings moving to larger and more efficient ports (Ecotrust and Ecotrust Canada 2004; Macinko 2005; Macinko and Whitmore 2009). Fleet consolidation associated with catch share programs is said to result in further job loss, excessive license and quota prices, and the exclusion of rural, small-scale, and aboriginal fishermen that can no longer afford to be in the fishery (Ecotrust Canada and Ecotrust 2004). Catch share programs can also increase administrative costs (PEW 2009).

There is also some debate about whether catch share programs actually improve the ecological health of the fisheries in which they have been implemented. Poorly designed catch share programs can encourage behavior such as high grading (discarding low-market value fish), misreporting, or underreporting of catch (PEW 2009). In some cases, anticipation of catch share programs has prompted fishermen to increase harvest levels so that they can receive a higher portion of the initial allocation, thus exacerbating stock decline (Sea Grant 2011).

Many stakeholders oppose the overall concept of catch shares claiming that it goes against the "public trust doctrine." This is the principle that certain natural resources belong to the public and the government is required to maintain those resources for the public good, rather than for the exclusive benefit of private individuals. From this perspective, the government is taking a public resource and giving it to an individual for free, and then permitting that individual to make a profit by selling or leasing that resource back to the public. Regulators are quick to point out that catch shares are, in fact, not a property right, but a privilege to access a public resource, and this privilege can be revoked at any time. To emphasize this, the Magnuson-Stevens Act describes them as *limited* access privilege programs, and the U.S. Commission on Ocean Policy describes them as dedicated access privileges. For the most part, however, once established, catch shares are very difficult to modify or revoke because of vested interests in the fishery (PEW 2009).

CATCH SHARES AND RECREATIONAL FISHERIES

While commercial fisheries in the U.S. have been managed under catch share programs since the early 90's, there are still no recreational catch share programs. As pointed out in the Environmental Defense Fund's *Catch Share Design Manual*, recreational catch share programs face challenges from "the absence of real-time data, insufficient monitoring and untested methods of assigning quotas to individual anglers" (Bonzon et al. 2010). Nonetheless, there is growing interest in implementing recreational catch shares, with several pilot projects underway.

The Alaska halibut Charter IFQ Program, approved by the NPFMC in 2001 but never implemented, was the first attempt at developing a quota-based fishery for a charter fleet (see discussion below). In the Gulf of Mexico, the Gulf Headboat Cooperative is undergoing an IFQ pilot test for red grouper and gag grouper. The Rhode Island Party and Charterboat Association is also undertaking a pilot catch share program for summer flounder. Each of these proposals allocates a secure share of the catch to a charter operator, party boat, or head boat captain.[9] In contrast, the CATCH proposal outlined here is the first attempt to allocate shares to a community or pool of anglers.

There are few documented examples of compensated reallocation of fishing rights between commercial and recreational sectors. In Iceland, recreational fishing organizations have bought up farmer's traditional netting rights in salmon rivers, and in the North Atlantic, the North Atlantic Salmon Fund has bought ocean salmon fishing rights from commercial fishers (McBride 2005). Fisheries and Oceans Canada is in its second year of testing a mechanism in the Pacific halibut fishery that allows a recreational "experimental license holder" to lease halibut quota from commercial harvesters based on market value. These license holders are permitted to fish leased halibut outside of the recreational allocation. The 2012 IPHC Blue Book reported limited success in 2011, with only 4,000 pounds transferred and few pounds caught (IPHC 2012d). Nonetheless, according to a recent press release, "Fisheries and Oceans Canada will move forward with regulatory changes to continue this market-based transfer mechanism for the long-term" (Fisheries and Oceans Canada 2012). This Canadian leasing mechanism is similar to the Guided Angler Fish program being implemented as part of the NMFS's Catch Sharing Plan (described below).

9 The term "head boat" generally refers to a larger party boat that takes out many anglers for a lesser fee. This is in contrast to a charter boat, which is a private charter carrying no more than six passengers for a more private experience, at a higher fee.

Alaska's Commercial Halibut Fishery

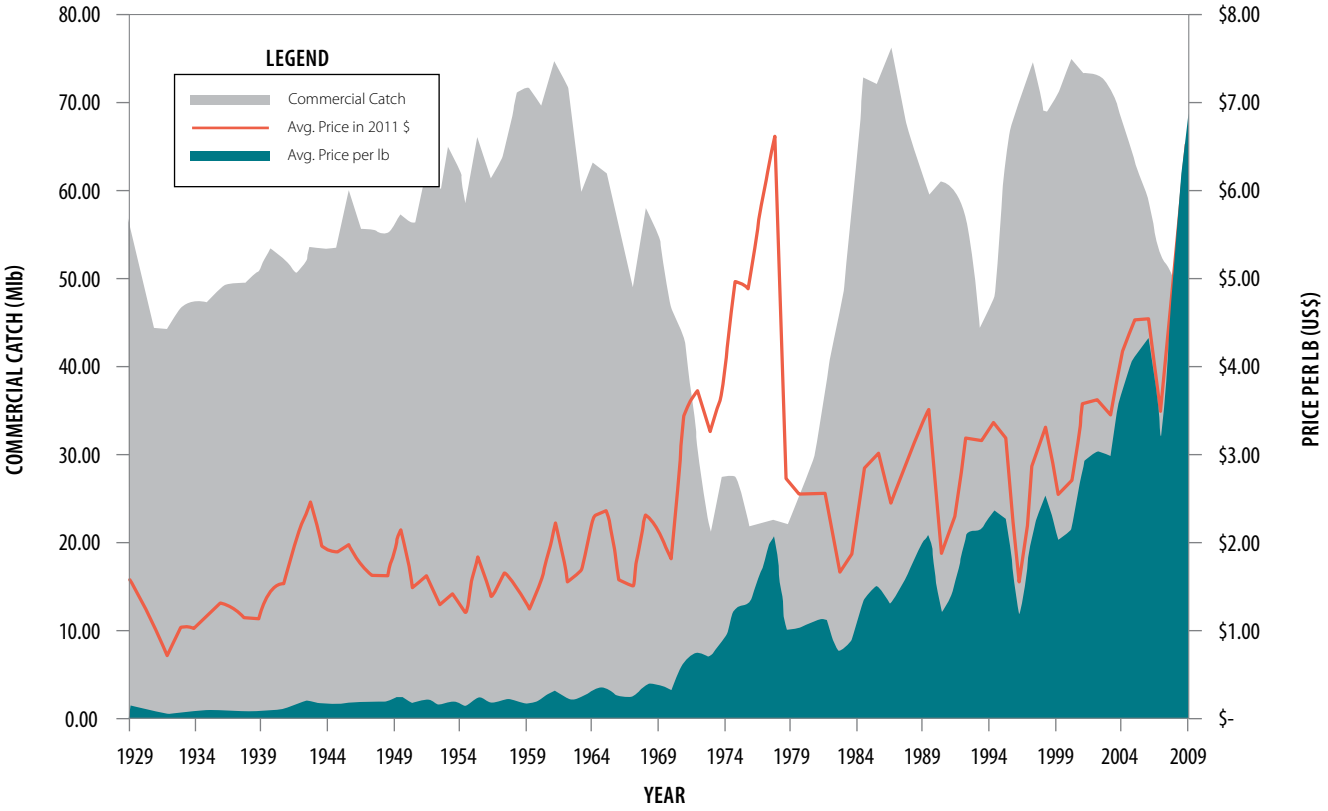
OVERVIEW

Commercial halibut fishing in Alaska spans the Gulf of Alaska to the Bering Sea and Aleutian Islands. Fishermen use fixed gear, primarily longline, with vessels ranging from small catcher vessels under 35 feet (boats that deliver iced catch to shoreside processors) to large catcher-processor vessels or freezer longliners over 120 feet (vessels that stay out longer and process fish at sea) (Pautzke and Oliver 1997).[10]

The commercial fishery has been managed under the Alaska Halibut and Sablefish Fixed Gear Individual Fishing Quota Program since 1995. In 2011, around 1,034 people were employed monthly as commercial halibut fishermen (Cannon and Warren 2012). In 2012, there were 1,227 vessels catching halibut in Alaska, and 2,574 individuals held quota (Gilroy 2013, 22).

Annual commercial halibut catches have fluctuated significantly over the past century (Figure 7). Commercial harvest reached an historic low of 21 million pounds in the 1970s, and peaked at around 75 million pounds in the late 80s and again in the late 90s and early 2000s. It has declined since then, with the lowest catch in more than 30 years occurring in 2013 at 28.3 million pounds (preliminary estimates from IPHC Bluebook 2014).

FIGURE 7: Halibut Price and Catch 1929–2011



Source: IPHC

10 "Fixed-gear" refers to one or more stationary lines with hooks that can be anchored to the bottom of the ocean, including longline, jigs, handline, and troll gears.

The halibut commercial fishery has traditionally been a very valuable fishery. The average ex-vessel price of halibut reached an historic high of $6.29 per pound in 2011, which fell back to $5.50 per pound in 2012. The statewide harvest value was $140.3 million in 2012 and $198.1 million in 2011 (Davis, Sylvia and Cusack 2013).

There is also an important processing community that supports the commercial and charter halibut fishing industries in Alaska. In 2010, 31 different processors purchased halibut caught in Area 2C, and 30 different processors purchased halibut caught in Area 3A. Of these processors, the Area 2C dependency on halibut was 21%, and the Area 3A dependency on halibut was 42%. In addition to commercial processing, there are processors in communities with a large charter fleet presence that provide filleting, packaging, freezing, and shipping services to anglers (Davis, Sylvia and Cusack 2013)

PRE-IFQ AND THE RACE FOR FISH

Alaska's commercial halibut fishery has undergone many changes since it started in the late 1880s, most occurring in the past few decades. Before the mid-1990s, the fishery was managed as an open-access resource with a total allowable catch and a limited season. In the 1970s, halibut were fished over a five-month season. During the 1980s and 1990s, biomass decline prompted managers to progressively shorten the fishing season. At its most extreme, halibut seasons were reduced to one or two 24-hour openings (Fina 2011). This resulted in a "halibut derby" or "race for fish," with commercial fishermen competing with one another to catch as much halibut as possible in the shortest amount of time. Fishermen invested in bigger and faster boats and fished in dangerous conditions to maximize their catch. The negative impacts of this derby-style fishing are well documented, resulting in overcapitalization of the fleet, allocation conflicts, gear conflicts, safety issues, increased halibut removals in non-directed fisheries and discard mortality, poor catch quality, price declines, and economic instability in the fisheries and fishing communities (Fina 2011; Pautzke and Oliver 1997). Gear lost during the derbies also resulted in almost two million pounds of halibut mortality in 1990 through "ghost fishing," with lost gear continuing to catch fish (Fina 2011).

However, some anecdotal reports suggest that during this "race for fish," most commercial vessels fished away from town to catch the most poundage in a short opening. This reportedly left a lot of halibut in the water closer to shore for subsistence and sport users to harvest. This changed with the IFQ program.

INDIVIDUAL FISHING QUOTA (IFQ) PROGRAM

In 1995, NMFS implemented the Alaska Halibut and Sablefish Fixed Gear IFQ Program to control growth in the fishery and put an end to the derby. The program assigned a percentage of the sablefish and halibut quotas to individuals with a history of harvest in the fisheries. The transition from open-access to IFQs "was a long, arduous process marked by periods of progress, followed by periods of retreat" (Hartley and Fina 2001). After fifteen years of research, social and economic analysis, negotiation, discussion, public meetings, comment periods, consideration of alternatives, and regulatory processes, the program was finally implemented.

The conservation and management objectives of the IFQ program were to improve safety, promote economic efficiency, improve product quality and value, and promote the conservation and management objectives of the Magnuson-Stevens Act and the Halibut Act. It was also one of the first catch share programs to strongly emphasize social goals aimed at preserving the traditional character of the fishing fleet, avoiding excessive consolidation, and preserving community stability through revenue and jobs. Measures were implemented to protect small-scale fishermen, retain opportunities for new entrants, and maintain an owner-operator fleet (DiCosimo 2010; Barlow and Bakke 1999; Bonzon et al. 2010; Hartley and Fina 2001).

How Does the IFQ Program Work?

Halibut quota share privileges were initially assigned to individuals and non-individuals based on their historical activity in the fishery. Every year, the IPHC determines the Total Allowable Catch (TAC) for the commercial fishery for each regulatory area. The amount of IFQ issued to an individual depends on how much quota share they hold relative to all quota holders in that same regulatory area (i.e., the Quota Share Pool) (Smith 2004). In other words:

Quota Share / Quota Share Pool x Total Allowable Catch
=
Individual Fishing Quota

Quota holders then receive their IFQ permit, which authorizes them to harvest a specific number of pounds of halibut in a specific regulatory area for that year. The permits are issued annually, at no charge, to the IFQ holders, and are not specific to vessels. Quota shares are categorized by species (halibut or sablefish), regulatory area (Areas 2C, 3A, 3B, 4A, 4B, 4C, 4D, 4E for halibut), vessel category (A–D), and "blocked" or "unblocked" quota share.

Initial Quota Share Assignments

Halibut quota shares were initially assigned to individuals and a small number of companies or corporations based on historical activity in the fisheries. Individual vessel owners and lessors that made at least one landing in any one of the years 1988, 1989, or 1990, were allocated shares based on the best five years of their 1984–1990 landings. The NMFS Restricted Access Management (RAM) program processed all applications for initial issuance of quota share, and quota shares were assigned to eligible applicants starting in November of 1994.

Quota Share Transfers

Catcher boat shares can be transferred to eligible buyers, which include persons (individuals or corporations) who:

- Received quota share during initial IFQ allocation
- Obtain a Transferable Eligibility Certificate requiring proof of U.S. citizenship and documentation of 150 days of commercial fishing experience in the U.S.
- Are corporations and partnerships that were initial recipients only (Pautzke and Oliver 1997).
- Are eligible community quota entities (CQEs) (see discussion on CQEs below).

Once issued, the individual or entity holds that quota until it is transferred, suspended, or revoked.

Transfer and Use Restrictions

Geographic Restrictions

Quota shares were assigned to the existing IPHC regulatory areas to ensure they were distributed geographically. Shares can only be used and sold within the area that they were originally allocated.

Vessel Categories

Vessel categories were established to help ensure that the IFQ program was not dominated by large vessels and to maintain the traditional structure of the fleet. Shares can only be sold to the same vessel category to which they were originally allocated, and each vessel category holds particular rules on trading. The four vessel categories, A–D, include:

A—Freezer vessels of any length
B—Catcher vessels over 60'
C—Catcher vessels 36' to 60'
D—Catcher vessels 0 to 35'

TABLE 2: Halibut Quota Share Vessel Category Distribution by IPHC Area in 2011

IPHC AREA	VESSEL CATEGORY	2011 PERCENTAGE OF QUOTA SHARE
2C	A-Freezer Vessel (any length)	2.1%
2C	B-Catcher Vessel > 60 ft	4.5%
2C	C-Catcher Vessel 36–60 ft	78.4%
2C	D-Catcher Vessel < or = 35 ft	15.1%
		100%
3A	A-Freezer Vessel (any length)	2.6%
3A	B-Catcher Vessel > 60 ft	37.1%
3A	C-Catcher Vessel 36–60 ft	53.5%
3A	D-Catcher Vessel < or = 35 ft	6.9%
		100%
All Areas	A-Freezer Vessel (any length)	2.8%
	B-Catcher Vessel > 60 ft	37.0%
	C-Catcher Vessel 36–60 ft	52.3%
	D-Catcher Vessel < or = 35 ft	7.9%
		100%

Source: Davis, Sylvia and Cusack 2013

Class A vessel permit holders can process harvests on board and the permit owners can lease their quota for harvesting by others. Class B through D permit owners must deliver harvests to registered floating or shoreside processors, and permit holders must be on-board (except for the original permit owners). Category D is the least expensive category, generally intended for smaller operations or new entrants. Table 2 presents the 2011 distribution of halibut quota share by vessel category, showing that most quota share is held in class C, with the least amount in class A and class D. The table also illustrates the regional differences, with Area 3A having much more class B quota share (37.1%) than Area 2C (4.5%).

Blocks

The NPFMC established quota share "blocks" to help ensure smaller amounts of quota share are available and affordable for small owner-operators and new entrants. Quota share that originally yielded less than 20,000 pounds of IFQ (using 1994 quota share pounds and total allowable catch) was issued as blocks, which cannot be subdivided upon transfer. An individual IFQ holder can only hold three blocks per management area, and an individual that holds any amount of unblocked quota share in a management area is only permitted to hold one quota share block in that area. Very small blocks can be "swept up" to form one larger block up to a maximum size specified for each area. This was done to promote usefulness of small blocks otherwise uneconomic to fish (NMFS Alaska 2012a, 88). Larger blocks must be bought in their entirety.

In 2007 the NPFMC amended the block program for halibut by: a) allowing a shareholder to hold three blocks rather than two; b) dividing halibut blocks in Area 3B and 4A that yield more than 20,000 pounds into a block of 20,000 pounds, and the remainder unblocked, and; c) increasing the halibut sweep-up level in 2C and 3A to 5,000 pounds.[11]

Use Caps and Vessel IFQ Caps

To ensure that quota shares are not consolidated into a few hands, the NPFMC established ownership use caps. No one individual can hold or control more than 0.5–1.5% of the halibut shares in a management area, with the exception of individuals who were "grandfathered" in, having received more during the initial issuance of quota shares (but they cannot increase their quota by transfer). Similarly, caps on vessel use help ensure continued participation by at least a minimum number of vessels (Table 3).

TABLE 3: Quota Share Use Caps and Vessel IFQ Caps 2013

QUOTA SHARE USE CAPS

APPLICABLE %	SIZE OF RELEVANT QSPS	QS USE CAP
1% of Halibut 2C QSP	59,979,977 QS units	599,799 QS units
.5% of Halibut 2C, 3A, 3B QSP	300,564,647 QS units	1,502,823 QS units
1.5% of all Halibut Area 4 QSP	33,002,937 QS units	495,044 QS units

Note: The "Relevant" QSPs for calculating the Use Caps for both halibut and sablefish are the 1996 QSPs.

VESSEL IFQ CAPS

VESSEL USE CAP %	ANNUAL IFQ TAC	VESSEL USE CAP
1% of 2C Halibut IFQ TAC	2,970,000 net pounds	29,700 net pounds
.5% of all Halibut IFQ TAC	21,810,800 net pounds	109,054 net pounds

Source: NMFS Alaska 2013b

Notes:

- Vessel IFQ Caps are calculated on the IFQ TAC only; CDQ TACs are not included in the calculations.
- QSP=Quota Share Pool or Pools; IFQ=Individual Fishing Quota; TAC=Total Allowable Catch.
- Halibut weights are expressed in net (headed and gutted) pounds, and sablefish weights are expressed in round pounds.

11 Community Development Quota Program. Final Rule. Federal Register Volume 72, Number 153 (Thursday, August 9, 2007) (to be codified at 50 CFR Part 679).

Limits on Leasing

Catcher-processor vessel quota shares (category A) are fully leasable with no restrictions. There are, however, tight restrictions on leasing catcher-vessel shares (categories B, C and D). In the first three years of the program, an individual was allowed to lease 10% of his or her catcher vessel shares per holder, per area. Now, leasing of catcher vessel shares is limited to surviving heirs, medical transfers, National Guard and military reserves, and from CQEs to community residents (NPFMC 2012a, 54). There has been some de facto leasing of IFQ from an original IFQ recipient to a "hired skipper," but the NPFMC continues to attempt to limit such activity (Jane DiCosimo, personal communication, October 23, 2012).

Owner-on-Board

An "owner-on-board" provision requires that owners be on the boat during fishing operations and sign the fish ticket upon landing the fish. The intention is to prevent IFQ shares from being accumulated by absentee owners or speculators. An exception to this rule is with some of the initial recipients of IFQ, who are allowed to hire skippers to fish their annual IFQ. For the most part, however, the owner must be on board. At present, the quota holder must hold a 20% ownership interest in the fishing vessel (NPFMC 2012a, 54).

The NPFMC has recommended tightening restrictions on the use of hired skippers, as their use by initial quota holders has increased over time. The NPFMC has recommended: 1) requiring a 20% ownership interest in the fishing vessel during the previous year; and 2) prohibiting the use of hired skippers of halibut and sablefish B, C, and D class quota shares transferred after February 12, 2010 (NPFMC 2011a).

Protecting New Entrants

An objective of the IFQ program is to provide opportunities for new entrants (such as crew wanting to become vessel owners and operators) to enter the fishery. A typical pathway for new entrants is to gain sea-time experience and wealth working as crew and skippers on Class C vessels, then purchase Class D QS (Davis, Sylvia and Cusack 2013). Vessel categories, blocks and caps were designed to facilitate new entry. There are also funding programs such as NOAA's Fisheries Finance Program (funded through a congressional appropriation), which provides loans to entry-level and small boat owners.

Administration and Enforcement

The Secretary of Commerce (or designee) must approve all sales, transfers, or leases of quota shares. NMFS monitors these activities through its RAM Division, which was created to determine initial IFQ allocations and to administer the IFQ program.

No high grading is allowed, and a fisherman must stop fishing when he/she runs out of IFQ. Participants are permitted overages of 10% of the IFQ amount remaining at the beginning of the last trip, but they are counted against the individual's quota the following year. There are different penalties for overages above 10%, including confiscation. Underages of up to 10% of a person's total annual IFQ account for a current fishing year is added to their account the next year.

An individual's catch is logged against his or her quota using electronic monitoring and a debit card system. NMFS enforcement agents monitor and log landings at 16 primary ports, and do random spot-checks at smaller ports to crosscheck the actual landings against the shareholder's landings record. As of January 2013, a new and revised observer program requires partial or full coverage for all sectors of the groundfish fishery, including vessels less than 60 feet (previously smaller vessels did not require observer coverage).

Cost Recovery

In 2001, a cost recovery fee was implemented for NMFS, and managed by RAM, to recover the costs of managing and enforcing the IFQ program. This fee was authorized in the 1996 amendments to the Magnuson-Stevens Act section 304(d)(2)(B), which require the Secretary of Commerce to "collect a fee to recover the actual costs directly related to the management and enforcement of any…individual fishing quota program" (NMFS Alaska 2000). The maximum amount of the annual fee is 3% of the total ex-vessel value of IFQ halibut and sablefish harvested, but NMFS may reduce this if costs can be recovered using a lower percentage. On average, the cost recovery fee has been around 2% with the 2011 cost recovery fee percentage at 1.6% (NMFS Alaska 2012b). Cost recovery is not authorized on non-commercial harvests.

Community Development Quota Program

Quota shares were also allocated to groups via the Western Alaska Community Development Quota (CDQ) program, which allocates a percentage of all Bering Sea and Aleutian Islands quotas for groundfish, prohibited species, halibut, and crab to coastal western Alaskan communities. The program was designed to provide economically disadvantaged communities with the opportunity to generate capital and develop stable local economies based on fishing. Six CDQ groups (regional non-profit corporations) representing 65 communities were formed.

CDQ groups manage and administer the CDQ allocations. Typically, CDQ groups lease their allocations to other companies to harvest and process, and these fishermen often agree to hire local crew, and land fish in their community. Early in the program, 100% of CDQ allocations were leased to companies that had no CDQ ownership. Over the years, CDQ groups acquired ownership, and by 2008, according to the Aleutian Pribilof Island Community Development Association's website, more than 75% of CDQ allocations were harvested and processed by companies of which CDQ groups own all or part (APICDA 2013).

Community Quota Entity Program

Early in the IFQ program, it became apparent that much of the quota shares allocated to individuals in small communities were migrating out of those communities. Anecdotal reports suggests that individuals in small communities had to sell their quota because their initial allocation was too small to remain economically viable. As a result, many coastal communities with few economic opportunities were left without any access to the halibut fishery. Community leaders petitioned the NPFMC, and in 2004, NMFS implemented the Community Quota Entity (CQE) program as a revision to the Halibut and Sablefish IFQ Program.[13]

Under Amendment 66, 42 rural communities were deemed eligible to participate in the IFQ program (this recently increased to 45 communities). These communities must have less than 1,500 people, no road access to larger communities, direct access to saltwater, and a documented historic participation in the halibut and/or sablefish fisheries. The communities need to form non-profit corporations called CQEs, which can then purchase and hold catcher vessel quota in Areas 2C, 3A, and 3B, and lease the resulting annual IFQ to individual community residents. The CQE program has since been expanded to include fishing privileges in the Charter Halibut Limited Access Program and the Western and Central Gulf of Alaska fixed gear Pacific cod fishery license limitation program. As of 2011, CQEs had requested 123 charter halibut permits (Davis, Sylvia and Cusack 2013).

How Does the CQE Program Work?

Under the CQE program, an interested and eligible community must first form a new nonprofit corporation to act on its behalf (i.e., the CQE), which must be incorporated under the laws of the State of Alaska. A single CQE can also represent several eligible communities. The CQE must apply to NMFS for recognition as a CQE (with the written approval of the community). Upon approval by NMFS, the CQE can buy, sell and hold halibut and sablefish quota for the community. The CQE then leases the resulting IFQ to individual community residents. The CQE must raise its own funds, which it may do through a variety of bond, loan, and grant programs (NMFS Alaska 2010). NMFS is responsible for administrative oversight, which includes authorizing non-profit entities as eligible CQEs, and reviewing annual reports submitted by the CQE.

13 Community Purchase. Final rule. Federal Register Volume 69, Number 84 (April 30, 2004) (to be codified at 50 CFR Part 679).

CQE Transfer and Use Restrictions

The CQE and leaseholders must abide by a number of restrictions. Some restrictions were designed to provide more flexibility to CQEs, given that they represent an entire community and not an individual. Other provisions were more limiting to CQEs than individual quota holders to protect the individuals during the uncertainty of the first few years of the program (NMFS Alaska 2010; Baker 2012).

Geographic Restrictions

A CQE can only purchase quota in the regulatory area that the community traditionally fished in (for example, a CQE in Area 3A is not allowed to purchase quota from Area 2C).

Vessel Categories

CQEs cannot acquire quota assigned to vessel category D (under 35 feet). However, IFQ held by a CQE can be fished from a vessel of any size regardless of the quota share vessel category from which the IFQ was derived. This provision was developed to accommodate the wide range of vessel types in rural communities.

Blocks

No individual community can hold more than 10 blocks of halibut quota at any point in time in each regulatory area, and those blocks cannot be subdivided. There are additional restrictions for each regulatory area on holding very small blocks (for example, CQEs in Area 2C cannot purchase blocks less than or equal to 19,992 units and in 3A less than or equal to 27,912 units). These limits were intended to prevent the consolidation of blocked quota shares and to ensure small units are available for new entrants.

Use Caps for Individual Communities

- CQE's have the same use limitations as individual quota share holders:
- 1% of Area 2C quota shares (599,799 units)
- 0.5% of the combined Area 2C, 3A, and 3B halibut quota shares (1,502,823 units)

Cumulative Use Caps for all CQEs

Cumulative Use Caps are caps on the total amount of quota shares that all CQEs can purchase. These caps were established because of concerns that CQEs would buy out all quota shares. Cumulative use caps started at 3% in first year (2004), and increased by 3% per year until they ultimately reached a maximum of 21% of all the halibut and sablefish quota shares in each regulatory area.

Vessel Caps

No more than 50,000 pounds of halibut can be used on an individual vessel. This limitation is intended to encourage the broad distribution of community-held IFQ on vessels that might not otherwise be able to participate in the IFQ program.

Limits on Leasing

CQEs cannot lease more than 50,000 pounds of halibut to an individual resident. Individual leaseholders are considered to be IFQ permit holders and must comply with the same regulations, including payment of annual fees for the IFQ cost recovery program. There are additional restrictions for leaseholders (for example, they must be domiciled in the community for at least 12 months before the lease request).

Sale Restrictions

A CQE can only sell its quota if the proceeds will be used to improve, sustain, or expand the opportunities for community residents to participate in the IFQ fisheries. NMFS must authorize any transfer.

Review of the CQE Program

CQEs have purchased very little quota to date. In 2013, just 31 of 45 eligible communities have formed CQEs, and only two were halibut quota holders in 2012 (Davis, Sylvia and Cusack 2013). In 2010, NMFS conducted a five-year review of the CQE program, and found that funding was the primary obstacle due to the lack of low interest, long-term loans and high down payment requirements (NMFS Alaska 2010). The high price and limited availability of quota was also a barrier, as well as the administrative expenses for small communities to run a CQE.

Communities also cited several program-related restrictions that have been problematic, and have submitted proposed changes to the NPFMC. One issue is with the prohibition on purchasing D category halibut quota in Areas 2C and 3A. Due to the difficulty CQEs have had in funding the purchase of quota share, they would like the opportunity to purchase small blocks of D shares (NPFMC 2013). Another issue is with the vessel cap, which has been criticized as overly restrictive, since there is already a cap on individual leaseholders. Individual quota holders have much less restrictive vessel use caps than CQEs, which are based on the size of the IFQ total allowable catch. As a result, the amount of IFQ that can be fished on a single vessel by an individual quota holder is four to five times greater than that for CQEs, with the exception of the specific limit in Southeast (NMFS Alaska 2010). There have also been complaints about the residency requirements for leaseholders. The review concludes that, "in sum, while the CQE Program cannot yet be viewed as a success, there are a few recent developments that may provide better financing opportunities for CQEs, as well as a few proposed revisions to the regulatory structure that may put CQEs in a better position to participate" (NMFS Alaska 2010).

Has the IFQ Program Been a Success?

Many scholars, managers, and environmentalists have praised the Alaska Halibut and Sablefish IFQ Program as a success. According to Bonzon et al. (2010), fifteen years after implementing the IFQ program, it is successfully meeting its goals. Fishermen rarely exceed their catch limits, bycatch has declined, and ghost fishing has decreased. With longer seasons (close to nine months), fishermen are able to innovate and deliver a higher quality product, operating costs have been reduced, jobs are more stable and profitable, safety has improved, and dockside revenues have increased. Furthermore, the fishery resource continues to be sustainably managed (Bonzon et al. 2010; NPFMC 2012a, 52; PEW 2009).

However, there have also been a number of downsides from the IFQ program, including "lost jobs, high cost of entry into the fishery, consolidation of quota holdings and increased administration costs" (PEW 2009). By gifting quota to a limited number of vessels, the IFQ program displaced many skippers, crew, processing workers, and the support sector (Bromley and Macinko 2007). High market prices made it difficult for new entrants to participate. Leasing to hired skippers in every area except southeastern Alaska have diminished the owner-on-board provision, further driving up the price, and resulting in high entry costs (PEW 2009). In some areas, charter operators reported depletions from increased levels of commercial harvest in nearshore waters after the IFQ program was implemented in 1995 (Meyer and Stock 2002, 35).

Alaska's Guided Sport Halibut Fishery

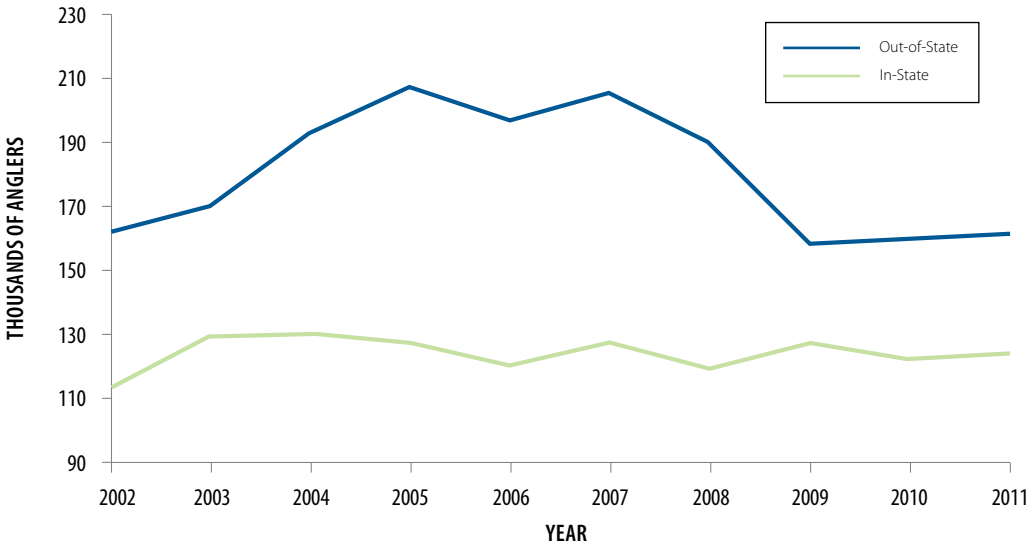
OVERVIEW

Anglers have been fishing in Alaska since the early part of the 20th century. As the national population has grown, Alaska has seen a steady increase in anglers visiting the state to experience fishing in this "last frontier." From 2002 to 2011, an annual average of 304,000 anglers participated in saltwater fishing activities (NMFS 2012). Between 55% and 62% of those anglers were from out-of-state (Table 4).[14] During the same ten years (2002–2011), Pacific halibut was the most commonly caught recreational species, averaging 789,100 fish per year (NMFS 2012).

Along with this increase in anglers has been a growth in the number of businesses and services that cater to them, from guide services to lodging and restaurants to bait and tackle shops. The state now has a wide diversity of charter operations with a range of business models including day charters, multi-day charters, boats targeting single fish species vs. multi-species, all inclusive sport fishing lodges, and "cruise and fish" liveaboards. In 2012, 795 people held 972 active charter halibut permits (NMFS Alaska 2012d).

TABLE 4: Recreational Saltwater Anglers by Residential Area (Thousands of Anglers)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Out-of-state	162	170	193	207	197	205	190	158	159	161
In-state	113	129	130	127	120	127	119	127	122	124
Total	**275**	**299**	**323**	**334**	**317**	**332**	**309**	**285**	**281**	**285**
% Out-of-state	59%	57%	60%	62%	62%	62%	61%	55%	57%	56%
% In-state	41%	43%	40%	38%	38%	38%	39%	45%	43%	44%



Source: NMFS, 2012, p.22.

14 From 2007 to 2009, the number of out-of-state saltwater anglers declined by 23%. This was likely due to the global economic downturn combined with tightening restrictions.

Recreational fishing has produced significant benefits to Alaska's economy. Anglers spend money on travel, licenses, equipment, supplies, tackle, fish processing, hospitality, guides, fuel, and lodging. NMFS (2012) reports, that in 2011, recreational fishing activities in Alaska generated approximately 6,300 jobs, and anglers spent over $446 million. Non-resident anglers generated over 87% of total trip-related expenditures.

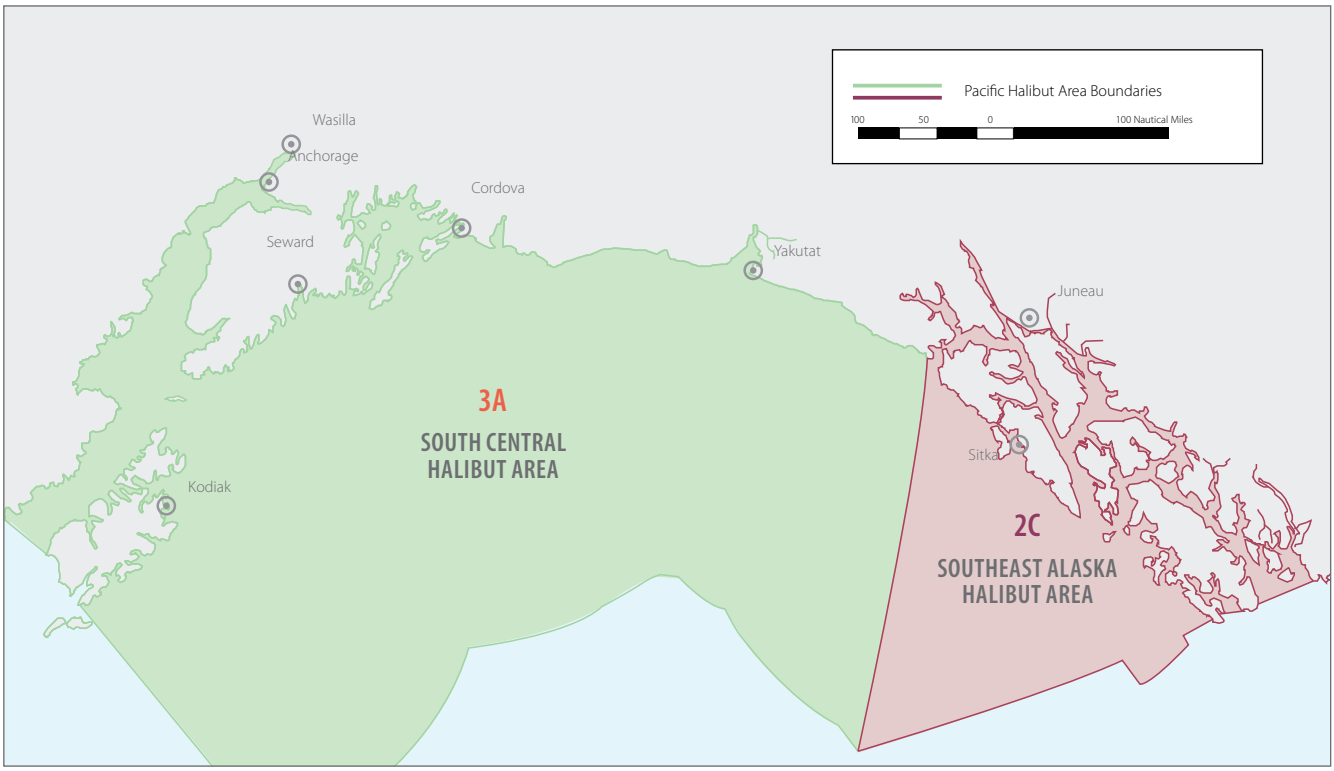
Management of the halibut sport sector is divided into two categories: unguided or private anglers who fish on their own and guided anglers who use the services of a guide or charter operator. Unguided anglers are managed under daily bag limits, with no annual limits or target harvest levels. Between 2003 and 2013, the NMFS managed the guided charter sector under a Guideline Harvest Level (GHL) program, which sets annual target harvest levels in Southeast (Area 2C) and Southcentral (Area 3A) Alaska. In 2014, the NMFS will replace the GHL program with a new Catch Sharing Plan (CSP), which will introduce a combined catch limit (CCL) for the commercial and charter sectors, with each receiving a specified portion of the harvest.

REGIONAL DIFFERENCES

The majority of recreational halibut fishing (99% of the catch in 2012) occurs in Southeast and Southcentral Alaska (Davis, Sylvia and Cusack 2013, viii). In 2007, guided anglers in Area 2C were responsible for 59% of Alaska's sport caught halibut, with 60% of 2C anglers coming from out-of-state. In Area 3A, guided anglers were responsible for 63% of the sport caught halibut, with 40% of 3A anglers coming from out-of-state (Southwick Associates et al. 2008). There are significant regional differences between the halibut charter sector in each regulatory area.

Southeast Alaska (Area 2C), known as the "Panhandle," stretches from Elfin Cove in the north to Prince of Wales Island in the south, with a maze of islands, mountains and fjords. The Area includes popular halibut fishing locations such as Sitka, Gustavus, Petersburg, Ketchikan, and outer Prince of Wales Island. Sole proprietors who operate a single vessel with six or fewer clients run most charter businesses in Southeast Alaska. There are also many lodge businesses. Southeast Alaska accounts for approximately 24% of all fishing license sales in the state (both marine and fresh water) (ADF&G 2012).

FIGURE 8: Map Showing IPHC Regulatory Areas 3A and 2C



Southcentral Alaska (Area 3A) is the most popular angling region in Alaska, accounting for 58% of all fishing license sales between 2002 and 2011 (ADF&G 2012). Area 3A includes Prince William Sound, Cook Inlet and the Anchorage area, and Kodiak Island and the Bristol Bay area to the west of Cook Inlet. Popular halibut fishing locations include Homer, Ninilchik, Anchor Point, Seward and Kodiak.

SPORT FISHING MANAGEMENT IN ALASKA

Historical Background: 1920s to 1990s

When Canada and the U.S. ratified the Halibut Convention in 1924, no consideration was given to the recreational use of halibut, which was insignificant at the time. Most anglers caught halibut by chance, while pursuing salmon. Over the course of the century, interest in halibut sport fishing increased, and by the early 70s, Alaska anglers were catching around 10,000 halibut annually, with few charter boats (Meyer 2010).

In 1973, the IPHC established the first sport regulations to control the sport fishery, with an eight-month season (March 1st to October 31st), a daily three fish of any size bag limit, and gear restrictions limiting fishing to a hand-held rod or line. The next year, the IPHC reduced the bag limit to one fish, but the State of Alaska did not adopt the new regulation. In 1975, the IPHC implemented a two-fish daily bag and possession limit, an open season from March 1st to October 31st, gear requirements of a hook attached to a handline or rod, or spear, and prohibitions on possessing a sport-caught halibut aboard a vessel if other fish or shellfish were destined for commercial use (Skud 1975). Alaska adopted the IPHC regulations in 1975 and every year since.

Halibut sportfishing continued to grow throughout the 80s and 90s. Landings in Area 3A increased from less than 2% of the Total Constant Exploitation Yield (TCEY) in the late 70s to over 18% of the TCEY before the end of the 90s. During the same time, annual resident sportfishing license sales increased by 41% (from about 122,000 to 172,000) and nonresident license sales increased by 480% (from about 56,000 to 269,000) (Criddle et al. 2003).

By the early 90s, commercial fishermen were concerned with this rapid growth in the guided halibut sport fishery, since any increase in sport fishing resulted in a direct reduction in pounds available for commercial fishermen to harvest. This is because the IPHC set the commercial fishery annual catch limits only after deducting other removals from the TCEY, including sport fishing. Commercial fishermen viewed this growing guided sport fishery as a *de facto* reallocation of the halibut fishery to the guided sector.

In 1993, the NPFMC created a Halibut Charter Working Group to examine possible management alternatives for the charter halibut fishery, and to develop options for a moratorium on the entry of new charter vessels in the fishery. The Working Group presented a number of options to the NPFMC for consideration, but action was delayed. Tension between the sport and commercial fisheries was magnified with the rationalization of the commercial halibut fishery in 1995. That same year, the NPFMC reviewed the Working Groups' findings, heard public testimony, discussed alternatives, and developed the following problem statement:

> The increasing amount of harvest in the charter fishery may change the stability, economic viability, and diversity of the halibut industry, the quality of the recreational experience, access for subsistence users, and the socioeconomic well-being of the coastal communities dependent on the halibut resource (NPFMC 2012a, 3–4).

In 1996, the NPFMC decided to remove the unguided sector from their management deliberations, instead only focusing on the guided portion of the sport fishery. They took this action to help "[narrow] the scope of potential management alternatives."[15]

In September 1997, the NPFMC took final action on two management actions: (1) Recording and reporting requirements for the halibut guided recreational fishery; and (2) Recommended Guideline Harvest Levels for the halibut guided recreational fishery in Area 2C and Area 3A. They postponed a moratorium.

Data and Reporting Requirements

The State of Alaska, through the ADF&G Division of Sport Fish, is responsible for collecting most recreational catch data in Alaska, including halibut. Data is collected through a combination of mail-out surveys, creel sampling, and saltwater charter logbooks. ADF&G then use the data to estimate charter halibut harvest, which supports the NPFMC's management and allocation decisions, and the IPHC's decisions regarding annual catch limits.

Statewide Harvest Survey

Since 1977, the State of Alaska has collected recreational harvest data for all sport fisheries through an annual Statewide Harvest Survey (SWHS). The SWHS is a post-season survey mailed to a

15 As described in: Control Date for the Charter Sport Fishery for Pacific Halibut. Federal Register Volume 71, Number 26 (February 8, 2006): 6442-6444.

TABLE 5: History of Halibut Sportfishing in Alaska

YEAR	HISTORY
1973	IPHC implements first sport fishing regulations in Alaska.
1984	IPHC requires guided sport vessels to have IPHC licenses. License requirement discontinued in 1998.
1991	NPFMC adopts the commercial IFQ program (implemented in 1995)
1993	NPFMC appoints GHL committee to explore options to limit increasing charter halibut removals.
1995	Commercial IFQ program is implemented.
1997	NPFMC passes a motion for record keeping and reporting requirements for halibut charter boat operators. ADF&G requires registration of charter fishing boats and guides.
1998	Board of Fish adopts regulations requiring a Saltwater Sportfishing Charter Vessel Logbook. Logbook reporting is required in May.
2000	NPFMC approves Guideline Harvest Level program for the halibut charter fishery in Area 2C and Area 3A. First "sport" representative on NPFMC.
2001	NPFMC approves a motion for a charter IFQ program for Areas 2C and 3A.
2003	Guideline Harvest Level is implemented.
2005	NPFMC withdraws recommendation for charter IFQ Program.
2006	Charter Halibut Stakeholder Committee formed to develop long-term management alternatives for the charter sector. Last meeting November 2007.
2007	IPHC implements new coastwide assessment. Council adopts Charter Halibut Limited Access Program. 2C bag limits drop to two-fish, one under 32".
2008	NPFMC adopts Catch Sharing Plan (CSP). Lawsuit by Charter sector stops implementation of "One Fish" rule in 2C.
2009	Charter sector lawsuit against "One Fish" rule fails. 2C bag limits drop to one fish, no size limit.
2010	NMFS publishes final rule for Charter Halibut Limited Access Program.
2011	Charter Halibut Limited Access Program implemented. Recommendation from IPHC drops 2C bag limits to one fish under 37". Charter Halibut Management Implementation Committee formed to make recommendations to NPFMC on guided angler harvest measures. NMFS informs NPFMC that they will not proceed with implementing Catch Sharing Plan until the NPFMC addresses issues raised during public comment period. NPFMC motion for a Halibut Catch Sharing Plan (December)
2012	Reverse slot limited implemented for 2C (U45 068) NPFMC takes final action on CSP (October).
2013	NMFS publishes final rule for CSP for implementation in 2014.

random sample of households containing at least one licensed angler. The survey asks respondents to report the number of fish caught and kept by all members of their household, and the data are then expanded to cover all households (Meyer 2012a).

Until recently, the SHWS sent out two types of questionnaires: a standard survey that did not separate guided and unguided harvest (with the exception of Kenai Peninsula fisheries) and, starting in 1992, an alternate survey that divided guided and unguided harvest. From 1996 to 2011, ADF&G estimated charter harvest by applying the guided proportions from the alternate questionnaire to the total estimate from both survey types. This changed in 2011, when ADF&G started sending out a single questionnaire that captured guided and unguided harvest statewide (Meyer 2012a).

The SWHS provides the only comprehensive, year-round estimates of harvest for the sport fishery, and it was the preferred method for estimating charter harvest until recently (NPFMC 2012a, 59). However, the data is not available until the fall of the following year. As a result, NPFMC and IPHC decisions are often based on ADF&G harvest projections made before final SWHS data are available. SWHS can also have inaccuracies in data from recall bias (errors in memory) and prestige bias (exaggerating the number of fish caught).

ADF&G Dockside Creel Sampling

Creel surveys (usually dockside interviews) are common fisheries management tools used to determine harvest in recreational fisheries. ADF&G dockside creel sampling takes place in all major ports, although not all areas are included due to the remoteness of many lodges (Williams 2011). Creel survey technicians interview anglers about their fishing trip, collecting data on species, numbers and weight of fish kept and released, and the time required to catch the fish. They also record logbook numbers so logbook data can be matched to interview data. This information is used in combination with the SWHS and logbook to estimate total angler participation, catch rate, and total sport harvests (ADF&G 2013a; Davis 2005).

Saltwater Sportfishing Charter Vessel Logbook

In 1998, ADF&G's Sport Division, under the authority of the Alaska Board of Fisheries (BOF), implemented a mandatory Saltwater Sportfishing Charter Vessel Logbook (SCVL). Through this program, all Alaska charter operators are required to record client catches in a daily logbook. The logbook collects information on number and species of fish landed and/or released, date of landing, location of fishing, hours fished, number of clients, residence information, ownership of the vessel, and the identity of the operator. The logbook is revised annually, depending on information needs.

ADF&G collected logbook data on halibut from 1998–2001 but stopped from 2002–2006 after the NPFMC adopted the Charter IFQ Program. Under the Charter IFQ Program, federal agencies planned to develop separate, electronic reporting systems, thereby making the logbook entry for halibut unnecessary. Anecdotal reports also suggest that pending the Charter IFQ Program, some operators over-reported catch in their logbooks so that they would qualify for a higher allocation, thereby making data from those years unreliable. When the NPFMC rescinded the Charter IFQ in 2005, the ADF&G resumed including halibut data in the charter logbook, with a number of new measures to improve the quality of the data.

ADF&G have conducted periodic evaluations of the SWHS, logbook, and creel surveys, and have found some discrepancies in the results. The discrepancies, however, do not seem to follow a consistent pattern. For example, the difference in halibut harvest between logbook data and SWHS estimates were larger in Area 3A than in Area 2C (NPFMC 2012a, 123). The cause of these discrepancies is still unknown, but there has been speculation about reporting errors with SWHS and data handling errors by ADF&G (Bingham 2001). As pointed out in NMFS' analysis on the Catch Sharing Plan, there is no way to know whether logbook data or SWHS estimates are more accurate since actual harvest numbers are unknown (NPFMC 2012a, 127). In the past, logbook data has been used to complement data collected through the SWHS and creel surveys to make guided angler harvest projections, but this will change under the new CSP as charter logbooks will be used as the sole source for these projections.

Reporting Under the Catch Sharing Plan

Under the Catch Sharing Plan (described below), the NMFS will use charter logbooks as the primary data collection source, due to the following advantages over the SWHS:

- Since guides are required to submit logbooks at the end of each charter trip, they do not have the same chance for error as the SWHS, which is sent later and can result in a number of respondent biases.
- Catch and harvest data are much more specific for logbooks than SWHS. For example, SWHS can be summarized by IPHC Area, subarea, or site, in comparison to logbooks, which can be summarized by IPHC area, subarea, port of landing, ADF&G statistical area, charter business, charter vessel, individual angler, or any combination.
- Location of charter harvest is likely more accurate in logbooks than SWHS questionnaires.
- Logbooks in 2C (and in 3A under the CSP) require a signature by the anglers, which likely increases the accuracy of the data.
- Logbooks will be monitored for accuracy through ongoing creel surveys and the continued SWHS, so inaccuracies can be monitored and addressed.
- Logbook data are timelier than SWHS, with final data available in February or March of the following year, compared to SWHS, which is not available until September.
- Projections of logbook-reported harvest for the current year are more accurate than SWHS estimates.
- Logbook is more flexible than the SWHS and can be modified annually to adapt to changing information needs. (NPFMC 2012a, 128)

Some charter stakeholders have been concerned that the discrepancies in harvest between logbooks and the SWHS will cause more restrictive management of the charter fishery under the CSP, since overall harvests have shown to be higher in logbooks. GHL allocations were based on SWHS-based estimates of charter yield. In response, the NPFMC has recommended using an adjustment factor based on the 5-year average (2006–2010) of the difference between the SWHS and logbook harvest estimates, with the adjustment factor reduced by the amount of harvest attributed to skipper and crew in Area 3A.

Under the CSP, there will also be new reporting requirements for charter halibut permit holders leasing Guided Angler Fish (GAF) (see discussion below). NMFS has been developing an electronic reporting system that will allow GAF participants, NMFS, and NOAA Office of Law Enforcement to monitor halibut harvest amounts and account balances in near-real time (NMFS Alaska 2011). Charter halibut permit holders will be required to report the length of retained GAF in a web-based, electronic reporting system. NMFS will then convert the permit holder's reported length of halibut to pounds, and then debit their GAF permit account. GAF permit holders will then be able to track how much GAF remains in their account. Under the CSP, NOAA Fisheries also plans to work with ADF&G to modify the logbook to facilitate its use by enforcement officers under the GAF reporting system (NMFS Alaska 2012c)

Guideline Harvest Level

After much analysis, deliberation, and back and forth discussions with NMFS, the NPFMC published a final rule for the Guideline Harvest Level (GHL) program in 2003, and it was implemented in 2004.[16] The GHL program established pre-season estimates of acceptable annual harvests for the guided halibut fishery in Area 2C and Area 3A. The NPFMC anticipated that the GHL would limit charter halibut harvests while maintaining the historic length of the charter season (February 1 to December 31) and allowing for some growth in the charter halibut fishery.

Before the implementation of the GHL, guided and unguided halibut anglers in Alaska were treated by the IPHC as one sector under the title of "Sport Harvest." With the adoption of the GHL, the NMFS split the recreational fishery for halibut in Alaska into guided and unguided anglers, each with its own set of regulations. This policy of sector separation formally and indefinitely divided anglers in Alaska into guided and unguided anglers, allowing different regulations to be applied to each sector. This sector separation has faced strong resistance from the charter sector ever since.

The GHLs were set at 13.05% of the combined guided recreational and commercial quota in area 2C, or 1,432,000 pounds net weight, and 14.11% of the combined guided recreational and commercial quota in Area 3A, or 3,650,000 pounds net weight. This formula was calculated using the average of 1995–99 harvest estimates (as reported by the ADF&G Statewide Harvest Survey) plus 25% to allow for some limited future growth in charter harvests.

The NPFMC established a range of GHLs, shown in Table 6, which would vary with stock abundance. GHLs increased or decreased in stair steps that were indexed to the 1999–2000 Total Constant Exploitation Yield (TCEY).[17] For example, in 2C if the IPHC determined that the TCEY was less than 9,027,000 pounds but more than 7,965,999 pounds, the GHL would be dropped to 1,217,000 pounds in the coming year. If the TCEY dropped below 7,965,000 pounds in the following year, then the GHL would decrease again to 1,074,000 pounds. If abundance increased, the GHL would increase in the same way. However, the GHL would never increase above 1,432,000 pounds in Area 2C or 3,650,000 pounds in Area 3A, nor decrease below 788,000 pounds in Area 2C or 2,008,000 pounds in Area 3A.

16 Guideline Harvest Levels for the Guided Recreational Halibut Fishery; Final Rule. Federal Register Volume 68, No. 153: 47256-47264 (Friday, August 8, 2003) (to be codified at 50 CFR Part 679).

17 The 1999–2000 time frame was chosen because these were the two years most recent to the Council's action

TABLE 6: Annual GHLs Determined by Levels of TCEYs

AREA 2C		AREA 3A	
IF THE ANNUAL TOTAL CEY FOR HALIBUT IS MORE THAN (LB.)	THEN THE GHL WILL BE:	IF THE ANNUAL TOTAL CEY FOR HALIBUT IS MORE THAN (LB.)	THEN THE GHL WILL BE:
9,027,000 lb.	1,432,000 lb.	21,581,000	3,650,000
7,965,000 lb.	1,217,000 lb.	19,042,000	3,103,000
6,903,000 lb.	1,074,000 lb.	16,504,000	2,734,000
5,841,000 lb.	931,000 lb.	13,964,000	2,373,000
4,779,000 lb.	788,000 lb.	11,425,000	2,008,000

Source: NOAA regulations at CFR 300.65(c)(1)

Harvest Measures under the GHL

While the GHL defined permissible levels of harvest for the charter halibut fishery, it did not actually constrain harvests by itself. Harvest measures, such as bag limits or size restrictions, are needed to control harvest. Every year, the NPFMC would recommend to the Secretary of Commerce, area-specific regulatory harvest measures. If guided anglers met or exceeded the GHL in a given year, this triggered more restrictive management measures in subsequent years. In 2011, the NPFMC created the Charter Halibut Implementation Committee to assist the NPFMC with identifying harvest measures for the charter sector.

There were substantial changes to harvest measures in Area 2C (Table 7). For more than thirty years, the daily bag limit for 2C guided sport anglers was two halibut per day of any size. Between 2007 and 2011, the GHL declined by 45% (from 1.432 to 0.788 million pounds). In an effort to keep 2C anglers within the GHL, the NMFS implemented progressively tighter controls. In 2007, NMFS reduced the daily bag limit to two-fish with one under 32-inches in length. In 2009, they further reduced the bag limit to just one fish of any size. In 2011, the IPHC intervened and instituted the tightest restrictions on record, with a one fish per day, 37-inch maximum size limit. This resulted in a significant decrease in 2C charter harvest to 0.344 million pounds—51% below the GHL.

In 2012, the GHL in Area 2C was increased back to 0.931 million pounds and a new "reverse slot limit" rule was put in place allowing anglers to catch one fish per day less than or equal to 45 inches or greater than or equal to 68 inches (U45 O68). The Charter Halibut Implementation Committee recommended the reverse slot limit instead of a one fish with a maximum size, since it gave anglers an opportunity to retain a trophy sized fish. For some areas such as Petersburg and Gustavus, which have traditionally attracted trophy halibut fishermen, and where other fish species such as King salmon and rockfish are scant or non-existent, this was a way to attract fishermen back to these areas. The downside, however, was in the difficulty of measuring large fish 68 inches or larger without gaffing the fish (you cannot gaff a fish intended for release). This also presented potential problems with increased discard mortality and safety issues from handling the fish to comply with length limits. The U45 O68 reverse slot limit was maintained in 2013, and the NPFMC is now recommending a reverse slot limit of U44 O76 for 2014 under the new Catch Sharing Plan.

There were few changes to harvest measures in Area 3A under the GHL, with a sustained GHL of 3.65 million pounds and a two halibut of any size bag limit between 2003 and 2011. In 2012, the GHL in Area 3A was reduced for the first time to 3.103 million pounds. Under the new CSP, the NPFMC is recommending a two-fish bag limit with one fish less than 29 inches in 2014.

Initial Reactions to the GHL

Many commercial fishermen initially supported the GHL for establishing an equitable allocation between sport and commercial harvests, for providing additional security for IFQ holders, and for controlling guided recreational fishery harvests. During the public comment period, NMFS received 228 letters of support, and a petition supporting the GHL with 69 signatures—almost all individual commercial fishermen, with three resident sport anglers. However, commercial support for the GHL program dwindled once it became clear that Area 2C sport harvest could not stay within the GHL.

NMFS received 12 letters opposing the establishment of a GHL, all from guided recreational fishermen. This small response from the guided sector was more likely to do with their lack of organization and communication, rather than any indifference to the plan. Some opponents argued that the GHL would impede the economic benefits of the charter sector, which they felt exceeded those of the commercial sector. Others felt that the guided recreational fishery catch was so insignificant that managers should not have to manage it to a limit. There were complaints that it was inappropriate to establish a GHL based on concerns about possible localized depletion of the halibut resource, since "the [IPHC] has determined that resource conservation is not a factor in such allocative decisions." Opponents were also concerned with the two-year time delay between the end of the fishing season, availability of harvest data, and implementation of management measures. Some feared that the GHL might force the guided fishery to target other stocks (for example, salmon and lingcod) that were already fully exploited.

TABLE 7: Guided Sector Management Measures and Removals from 2003–2013: Area 2C and Area 3A

AREA 2C					
YEAR	MANAGEMENT MEASURES	GHL (MLB.)	CATCH (MLB.)	DIFFERENCE FROM GHL (MLB.)	% OF GHL
1995–2002	Two-fish bag limit (no size limit). No limit on crew retention.	n/a			
2003	""	1.432	1.412	-.020	99%
2004	""	""	1.750	+0.318	122%
2005	""	""	1.952	+0.520	136%
2006	Two-fish bag limit (no size limit). State Executive Order prohibiting crew harvest 5/26–12/31.	""	1.804	+0.372	126%
2007	Two fish (1 < 32"). No crew retention 5/1–12/31 (State Executive Order and Federal Rule)	""	1.918	+0.486	134%
2008	Two fish (1 < 32"), except one-fish bag limit June 1–10 (halted by injunction).	0.931	1.999	+1.068	215%
2009	One fish bag limit (no size limit). No harvest by skipper & crew.	0.788	1.249	+0.457	158%
2010	One fish any size. No harvest by skipper & crew.	""	1.086	+0.298	138%
2011	One fish < 37". No harvest by skipper & crew.	""	0.344	-0.400	49%
2012	Reverse slot limit (U45 O68) No harvest by skipper & crew.	0.931	0.605	-0.326	65%
2013	Reverse slot limit (U45 O68) No harvest by skipper & crew.	0.788	0.732[18]	-0.056	93%

18 2013 Estimate

TABLE 7: Guided Sector Management Measures and Removals from 2003–2013: Area 2C and Area 3A (continued)

AREA 3A					
YEAR	MANAGEMENT MEASURES	GHL (MLB.)	CATCH (MLB.)	DIFFERENCE FROM GHL (MLB.)	% OF GHL
1995–2002	Two-fish bag limit (no size limit). No limit on crew retention.	n/a			
2003	""	3.650	3.382	-.268	93%
2004	""	""	3.668	+.018	100%
2005	""	""	3.689	+.039	101%
2006	""	""	3.664	+.014	100%
2007	Two-fish bag limit (no size limit). State Executive Order prohibiting crew harvest 5/1–12/31.	""	4.002	+.352	110%
2008	Two-fish bag limit (no size limit). State Executive Order prohibiting crew harvest 5/24–9/1.	""	3.378	-.272	93%
2009	Two-fish bag limit (no size limit). State Executive Order prohibiting crew harvest 5/23–9/1	""	2.734	-.916	75%
2010	Two-fish bag limit (no size limit), no limit on crew retention.	""	2.698	-.952	74%
2011	""	""	2.793	-.813	78%
2012	""	3.103	2.284	-.819	74%
2013	""	3.103	2.271[19]	-.832	73%

19 2013 Estimate

Has the GHL been a Success?

In 2003, the year the GHL was implemented, Criddle and others (2003) stated: "the GHL is regarded as a stopgap measure because there is little confidence that traditional sport fishery management measures can hold catches to no more than the GHL." GHLs were benchmark harvest levels and not "hard caps," so there was no mechanism to keep the charter sector within the defined limit, aside from regulating future harvests using harvest measures. As Criddle and others predicted, Area 2C exceeded the GHL each year between 2004 and 2010 (see Table 7).

Many argue that these overages in Area 2C occurred because the GHL did not adequately account for angler demand when it was first set up, even with the extra 25% growth. This was due in part to a lack of understanding regarding the dynamics that determine recreational harvest. Without this understanding it was difficult, if not impossible, to set regulations to achieve results with any accuracy. This, arguably, set the guided sector up for failure, and exacerbated tension between the commercial and charter sectors.

Furthermore, the GHL program was set up with no means of increasing the GHL to accommodate for future increases in guided angler demand. Most fishery management systems tie sector allocation to float with overall abundance (Wilen 2001). This was not the case with the GHL. Instead of floating the GHL with abundance, as was done with the commercial fishery, the GHL was capped at 1.432 million pounds in Area 2C and 3.650 million pounds in Area 3A. This meant that even during times of high abundance, the charter sector would only be able to fish up to this level, thereby reducing their ability to meet additional guided angler demand at a time when the resource might allow it.

Following these overages, the NPFMC recommended more restrictive harvest measures beginning in 2007. Since little is known about how to predict future angler demand or the relationship between angler demand and harvest restrictions, guided harvest in Area 2C did not achieve levels of the GHL until 2011. Unfortunately, this amounted to an overly conservative harvest measure for that year, with a guided harvest 51% below the GHL. This meant lost fishing opportunity for guided anglers and fisheries managers unable to "achieve the optimum yield of each fishery" (Magnuson-Stevens Act 2006).

The GHL was a concept aimed at regulating a very visible and definable sector of the recreational fishery. In so doing, regulators divided the recreational fishery into guided and unguided anglers. Alaska is the only state that has federal sport fishing rules that vary by the means by which one accesses the fishery. This has been a major objection voiced by the sport charter sector. The charter sector has argued that the GHL should have been a guideline for the entire recreational fishery and thus was not "fair and equitable" as required by the Halibut Act, as it imposed heavier restrictions on one group of anglers than another. In a lawsuit filed in 2009, Scott Van Valin, et al. vs. Secretary of Commerce Gary Locke, Judge Collyer's decision, while not ruling on the question of "fair and equitable" allocation between sectors, did rule that NMFS had justifiable grounds in setting a GHL for the guided recreational sector and thus turned a recommended harvest level into a presumed "hard cap." This decision, due to lack of funds, was never appealed.

Proposed Charter IFQ Program

At the same time that the NPFMC was developing the GHL program, they were also working on a new charter IFQ program. In 2000, the NPFMC adopted a new problem statement, which stated that although the GHLs were intended to prevent the open-ended reallocation of halibut from the commercial to the charter sector, GHLs did not address overcapitalization within the charter fleet.[20]

20 As described in: Control Date for the Charter Sport Fishery for Pacific Halibut. *Federal Register Vol.71, No.26* (February 8, 2006): 6442–6444.

The NPFMC appointed a Charter IFQ committee composed of representative charter operators, sport anglers, and commercial fishermen, to analyze a moratorium and IFQ alternatives as ways to address overcapitalization. On April 14, 2001, after eight years of debate and more than 8,000 comments on managing the charter halibut fishery, the NPFMC approved an IFQ program for the halibut charter fleet in Southeast and Southcentral Alaska to replace the GHL (a moratorium was put on hold once more) (NPFMC 2001).

Under the Charter IFQ Program, an allocation of recreational halibut quota shares would be issued to charter operators based on past harvest histories. Recreational harvest would then be managed in the same way as the commercial harvest is managed, by annually allocating a quantity of fish to eligible operators based on how much quota they held. If adopted by the Secretary of Commerce, the Charter IFQ Program would likely start in 2003 at the earliest. The basic principles of the Charter IFQ Program were as follows:

- Charter sector would be integrated into the current commercial IFQ program in Areas 2C and 3A only.
- Unguided and subsistence fishing would not be impacted – only guided fishing.
- Eligible charter operators would apply for, and be issued, quota share based on 70% of their average charter fishing activities in 1998 and 1999 and up to 30% for participation in 1995, 1996, and 1997.
- Charter quota would be issued in quota share units and would yield annual IFQ permits.
- IFQs would be issued in numbers of fish (compared to pounds in the commercial program).
- Fish caught by charter clients belonged to the client and could not be sold by charter captains.
- An agency and charter industry committee would be established to develop and implement the plan and to address reporting, monitoring and enforcement (Smith and DiCosimo 2006; NPFMC 2001).

The plan received mixed reviews from the guided recreational sector. Those in support liked that it gave businesses the ability to manage their own quota to meet their own individual business needs, that it regulated the harvest, and provided catch accountability within the fleet. Those against the program argued that the resulting reduction of the charter fleet would decrease recreational anglers' access to the fishery, which would result in a loss of coastal community jobs and increased prices to the public for charter services. Opponents did not want to see a resource that belonged to the public further privatized, and argued that individual charter boat owners and operators should not be entitled to windfall profits from the sale of charter IFQ. Some considered the IFQ program as a management model more applicable to a commercial fishery where fish is sold by the "pound," and not a recreational fishery where the "opportunity" to catch a fish is sold.

ADF&G and the Board of Fish also opposed the Charter IFQ Program on the grounds that IFQs were untested in recreational fisheries, so there was a great deal of uncertainty regarding impacts; the public's cost to access the fishery were likely to increase; there could be economic impacts not addressed in the NPFMC's analysis from the migration of quota shares between fisheries; and reduced access to halibut could result in targeting of state-managed species with conservation concerns, such as rockfish and lingcod. There were also legal concerns resulting from the delay in implementation, which resulted in current participants being excluded from the fishery (ADF&G 2006). Instead, the state proposed a charter vessel moratorium, the GHL, and a commitment to dealing with depletion issues through local fishery management plans (Meyer and Stock 2002, 35).

Between 2001 and 2005, opposition to the program increased. In December 2005, the NPFMC rescinded the charter halibut IFQ program, and it was never implemented. The preamble to the motion cited the following concerns: "lengthy delay in enacting this program has resulted in a large number of current participants that do not qualify for quota share. This has resulted in controversy and a lack of broad support for the program as well as potential legal vulnerabilities" (ADF&G 2006)."

Charter Halibut Limited Access Program

With the Charter IFQ rescinded, the NPFMC still had the challenge of controlling the rapid growth of the charter halibut fleet. A moratorium on charter vessels was once again brought to the forefront of the discussions. It took until 2010 for the NPFMC and NMFS to make a final ruling on a Charter Halibut Limited Access Program. The program limits the number of vessels that can take anglers out to fish for halibut in Areas 2C and 3A, and limits the number of clients that may fish on a permitted vessel during a trip. Although the NPFMC implemented the program to stem the growth of the charter sector and stabilize participation, it was not expected to reduce charter harvest.

Since February 1, 2011, all vessel operators in Areas 2C and 3A with charter anglers onboard have to possess an original, valid, charter halibut permit onboard during every charter vessel fishing trip in which Pacific halibut are caught and retained. To qualify

for initial issuance of charter halibut permits, vessel operators had to be licensed by ADF&G and had to have at least five logbook fishing trips recording halibut effort during one of the initial qualifying years (2004 or 2005) and recent participation year (2008).

NMFS' Restricted Access Management (RAM) program is responsible for implementing the Charter Halibut Limited Access Program and issuing charter halibut permits. Permit holders are generally limited to five permits to prevent over consolidation. The following types of charter halibut permits were issued, each endorsed for a specific regulatory Area and, except for military charter halibut permits, the number of anglers that may catch and retain charter halibut on a trip (NMFS Alaska 2012d):

1 Transferable Permits—Permits that can be transferred to others after initial issuance through a market-based system and NMFS application process. A person holding a transferable charter halibut permit may transfer the permit to another person (individual or company) unless the transfer would cause the recipient to exceed the allowable limit (with some exceptions under a "grandfather provision").

2 Nontransferable Permits—Permits that allow a business with relatively low participation in the qualifying years to continue operating while reducing potential harvesting capacity of the charter fishery over time. These permits are non-transferable, and are invalidated when a permit holder dies, a business entity dissolves, or new shareholders or partners are added to the business.

3 Interim Permits—Permits issued to an applicant during the appeals process. These permits are interim and nontransferable, and expire when NMFS makes a final decision.

4 Military Charter Permits—Permits are available for any U.S. Military Morale, Welfare and Recreation program in Alaska operating a halibut charter vessel. These are non-transferable, and are without angler endorsements (i.e., no restrictions on the number of authorized anglers per vessel).

5 Community Charter Halibut Permits—Permits issued to Community Quota Entities (CQEs) representing communities that may not have a fully developed charter halibut fleet. When the NPFMC was developing the Charter Halibut Limited Access Program, it recommended expanding the CQE program to authorize a subset of the 66 authorized CQEs to hold charter halibut permits. A CQE in Area 2C may receive a maximum of four community charter halibut permits, and a CQE in Area 3A may receive a maximum of seven community charter halibut permits. These are non-transferable, with an angler endorsement of six. CQEs can also receive charter halibut permits by transfer, but may not hold more than eight permits in 2C and fourteen permits in 3A.

Of the 801 applications received by NMFS, 522 were deemed eligible. For "special permits," of 32 communities, 22 formed the required corporations or CQEs, and 19 requested CQE charter halibut permits (612 anglers). 288 applicants did not meet eligibility requirements, including those who did not file within the application period (February 4–April 5, 2010). 195 of those applicants appealed, and 27% (52) of those claim denials were vacated (the denial was voided and the permit was given) (NMFS Alaska 2012d).

Table 8 shows the number of permits (by fishing area and type), permit holders, and anglers as of October 16, 2012 (NMFS Alaska 2012d). This data will change over time as permits are transferred and as new CQE and MWR permits are issued.

There were two lawsuits filed against NMFS over the Charter Halibut Limited Access Program. In April 2011, Charter Operators of Alaska, a non-profit group representing halibut charter operators, filed a lawsuit claiming that the Charter Halibut Limited Access Program violated their constitutional

TABLE 8: Distinct Charter Halibut Permit Holders, Permits, and Anglers as of October 16, 2012[21]

FISHING AREA	PERMIT TYPE[1]	CHP HOLDERS[2]	ACTIVE PERMITS[3]	AVERAGE CHPS PER HOLDER	ANGLER ENDORSEMENTS
2C	CHP	356	533	1.5	2,734
	CQE	11	44	4.0	264
	MWR	1	1	1.0	unlimited
3A	CHP	439	439	1.0	3,227
	CQE	9	63	7.0	378
	MWR	3	6	2.	unlimited
Both Areas	CHP	795	972		5,961
	CQE	20	107		642
	MWR	3	7		unlimited

Notes:

[1] CHP=regular permit with angler endorsements, CQE=community permits, and MWR=U.S. Military Morale, Welfare and Recreation Program permits.

[2] Within each permit type and area, CHP holders reflect all holders of all permits, but each holder is counted once, regardless of the number of charter halibut permits held.

[3] Active permits are current and non-revocable.

rights and forced them out of business.[22] The lawsuit aimed to overturn the permits, and a preliminary injunction would allow businesses without permits to continue operating until a judge made a decision in the case. The request was denied (Land 2010; Bartz 2011). In February 2012, Charter Operators of Alaska filed a second lawsuit against NMFS, this time claiming that the Final Rule violates the Halibut Act and Magnuson-Stevens Act regarding issues of conservation, optimum yield, and fairness and equality. Again, their motion was denied, and the Charter Halibut Limited Access Program moved forward.[23]

Catch Sharing Plan

When it became clear that GHLs were not going to successfully limit the sport halibut harvest, the NPFMC began developing a new management plan. On October 5, 2012, the NPFMC took final action on a Catch Sharing Plan (CSP) that had been under discussion, review and analysis since 2008. It is scheduled for implementation in 2014.[24] The NPFMC intends for the Catch Sharing Plan to resolve conservation and allocation concerns resulting from increased harvests by the charter sector, continued overages of the GHL in Area 2C, and decreased catch limits in the commercial setline fisheries (King and DiCosimo 2012). The primary features of the plan are outlined below:

Sector Allocation from a Combined Catch Limit

Under the CSP, the guided sport and commercial fisheries in Area 2C and Area 3A will share an annual combined catch limit (CCL), with each sector (guided sport and commercial) given a fixed percentage of that combined limit. These percentages were recommended based on 125% of the average charter harvest history between 1999 and 2005. The IPHC will determine the annual combined catch limit by taking the Total CEY and subtracting all "Other Removals" (bycatch, subsistence or personal use, and unguided sport, but no longer guided sport). The remaining TCEY will be the combined commercial and guided sport fishery FCEY, from which the IPHC will then deduct each sector's wastage to determine the annual catch limit for each area.

21 All holders are counted, but each person is counted only once per area even if he or she holds multiple permits. At least one MWR program permit holder earned "regular" charter halibut permits in addition to requesting special MWR permits, and person counts are not additive across areas and types.

22 *Charter Operators of Alaska v. Gary Locke*, April 2011

23 *Charter Operators of Alaska v. Rebecca Blank*, February 2012

24 Catch Sharing Plan for Guided Sport and Commercial Fisheries in Alaska. Final rule. Federal Register Vol.78, No.239 (December 12, 2013) (to be codified at 50 CFR Part 679).

The percentage allocation will differ in Areas 2C and 3A (see Table 9). In Area 2C, if the combined catch limit is less than 5 million pounds, the charter sector will receive 18.3%. If the combined catch limit is greater than 5.75 million pounds, the charter sector will receive 15.9%. If the combined catch limit falls between those two numbers, the charter industry will receive a 915,000 lb. allocation.

In Area 3A, if the combined catch limit is less than 10 million pounds, the charter sector will receive 18.9%. If it is between 10 and 10.8 million pounds, the charter sector will receive a flat 1.89 million pounds. If the combined catch limit falls between 10.8 and 20 million pounds, the charter sector will receive 17.5%. If it is more than 25 million pounds, the charter sector will receive 14%.

TABLE 9: Catch Sharing Plan Charter Allocation by Area

AREA 2C

COMBINED CATCH LIMIT (MLB.)	CHARTER (%)	CHARTER (MLB.)	IFQ (%)
0–<5.000	18.30%		81.70%
5.000–≤5.755		0.915	
>5.755	15.90%		84.10%

AREA 3A

COMBINED CATCH LIMIT (MLB.)	CHARTER (%)	CHARTER (MLB.)	IFQ (%)
0–<10.000	18.90%		81.10%
10.000–≤10.800		1.890	
>10.800–≤20.000	17.50%		82.50%
>20.000–≤25.000		3.500	
>25.000	14.00%		86.00%

Source: NPFMC 2012d

Accountability

The Catch Sharing Plan will have separate accountability for the charter and commercial sectors so that wastage in the commercial sector is deducted from the commercial sector's catch limit and wastage (released mortality) in the charter sector is deducted from the charter sector's catch limit (NPFMC 2012d). The intent is so that charter allocation will not be effected by halibut wastage in the longline halibut fishery.

Management Measures

The NPFMC will recommend annual charter halibut management measures to the IPHC prior to the fishing season based on projected harvests and guided sport catch limits for that year. This is in contrast to the GHL, in which restrictions for charter vessel anglers were implemented only after the GHL was exceeded. Pre-season CSP restrictions are intended to limit guided sport harvest before an overage occurs, and are consistent with the NPFMC's objective to maintain the guided sport season length (February 1 through December 31), with no in-season changes to harvest restrictions.

Guided Angler Fish

Rather than continually revisiting allocation decisions between the charter and commercial sectors, the NPFMC has decided that all future reallocations should be through a compensated transfer between a willing lessee and willing lessor in a free market. Under the CSP, individual charter halibut permit holders will be allowed to lease commercial IFQ as Guided Angler Fish (GAF). This will give charter operators a way to increase their clients' fishing opportunity (daily bag limit) up to the limits in place for unguided anglers. GAF will be issued in numbers of fish, with the conversion of IFQ pounds to numbers of fish based on the average weight of GAF from the previous year for each area.

Charter Halibut Permit holders that use GAF for their clients will be exempt from restrictions associated with the commercial IFQ fishery, but will be subject to their own landing and use provisions. For example, commercial and charter fishing may not be conducted from the same vessel on the same day. In addition, the skipper will be responsible for marking GAF by removing the tips of the upper and lower lobes of the tail and reporting the length of retained GAF halibut to NMFS.

There will also be caps on how much IFQ can be leased per IFQ holder per year (different by regulatory area but approximately 1,500 pounds), and caps on how much a single CHP holder can acquire annually depending on the number of angler endorsements (e.g., 400 fish for a six angler vessel), as well as particular rules pertaining to CQEs leasing and subleasing GAF (Davis, Sylvia and Cusack 2013). Unused GAF could revert back to IFQ pounds.

Data Collection

As described above, the CSP will use ADF&G logbooks as the primary means for collecting and reporting data on charter harvest. Reporting will have to be as close to real time as possible to ensure that fish transferred between sectors are not accounted for twice and that accurate removals are reported before the approval of GAF transactions. NMFS will implement a phone-in and web-based daily catch reporting system to accomplish this.

Reactions to the CSP

When the Catch Sharing Plan proposed rule was published July 22, 2011, NMFS received more than 4,000 comments, illustrating how contentious the program was. The commercial sector, for the most part, views the implementation of the CSP as a means to bring an end to the open-ended reallocation of fish from the commercial sector to the charter sector. The CSP will tie both sectors to the same index of abundance so that each sector will contribute to conservation efforts when there is a decline in the halibut resource. The CSP will also provide the means for a compensated transfer of allocation to the charter sector through the leasing of quota, ending a long history of allocation conflicts between sectors.

From the charter sector's perspective, the CSP will take away guided angler allocation provided under the current GHL management system, and then have charter operators rent this allocation back from the commercial sector. Leasing of fish from the commercial sector faces problems of annual availability and price of GAF that will work against a stable marketing environment for charter operators. Under the CSP, the charter operators in Area 3A will not be allowed to retain skipper and crew fish, even during high levels of abundance. The federal rule making process, which allows adequate time for public comment and scientific analysis on any proposed change in management measures, will be replaced with the IPHC recommending management measures directly to the Secretary of Commerce without the benefit of these U.S. citizen protections. A significant objection of the charter sector, is that the CSP will formalize the separation of the recreational fishery into guided and unguided anglers, with the guided sector given a hard allocation shared with the commercial sector, while unguided anglers continue to be regarded as "sport harvest removals" before setting catch limits.

On October 5, 2012, the NPFMC took final action on the CSP (NPFMC 2012d). In June, 2013, the NPFMC published a proposed rule to implement the CSP, with a public comment period that ended on August 12. The CSP was approved in December 2013 and will be implemented for the 2014 fishing season.

3

Research Results

This section presents an overview of the CATCH project's research findings, beginning with a discussion on the challenges of integrating a recreational fishery into a catch share program, and different alternatives for recreational catch shares including the CATCH concept. It then explores options for a holding entity, quota transfer mechanisms, accountability tools, and funding. Each subsection concludes with a summary of recommendations.

Integrating a Recreational Fishery into a Catch Share Program

Over the past two decades there has been growing interest in integrating recreational fisheries into catch share programs. In 1999, the National Research NPFMC's report, *Sharing the Fish: Toward a National Policy on Individual Fishing Quotas*, concluded that if an IFQ program is being considered, attention should be given to recreational participation in that fishery, and the potential application of IFQs for recreational fisheries. More than ten years later, NOAA's *Catch Share Policy* (2010) outlined its support for the design and implementation of catch share programs for the recreational charter and head boat sectors. A number of economists have examined the feasibility of recreational catch share programs (Kim 2007; Leal and Maharaj, eds. 2009; Sharp 1998; Sutinen, Johnston and Shaw 2002; Sutinen & Johnston 2003). However, in 2013 there are still no recreational catch share programs in operation, aside from a few pilot projects and the rescinded Alaska halibut Charter IFQ Program. There are a number of reasons why catch share programs for recreational fisheries have been slow to develop.

OBSTACLES TO RECREATIONAL CATCH SHARES

Insufficient Monitoring and Data

The success of a catch share program depends on the ability of managers to regularly track fishermen's catch against their share holdings to ensure the catch limit is not exceeded. Such monitoring is one of the major challenges of all catch share programs (Kim, Woodward and Griffin 2010, 63). This is particularly problematic for recreational fisheries, which have historically been difficult to

monitor due to the number and heterogeneity of participants, the open access nature of recreational fisheries, and the broad geographic scale (Fisheries Leadership and Sustainability Forum 2010, 18). According to the Environmental Defense Fund's *Catch Share Design Manual*, the absence of real-time data and insufficient monitoring in recreational fisheries is the primary reason why catch shares in recreational fisheries have not yet been implemented (Bonzon et al. 2010).

Unknown Impact on Stakeholders

Recreational catch share programs are still largely untested. As a result, there are concerns about the potential impacts such a program could have on anglers, charter operators, and other stakeholders. These concerns partially influenced the NPFMC's decision to rescind the Alaska Halibut Charter IFQ program in 2005. Critics argued that the program would reduce the size of the charter fleet, limit access for anglers, increase the cost of recreational fishing, and decrease the nature and quality of trips. This would reduce profits, create job loss, and result in a decreased allocation (Meyer and Stock 2002, 35; Wilen 2009).

Privatization of a Public Resource

There are also philosophical, if not legal, issues regarding the integration of catch shares into the recreational fishery. Many anglers and charter operators strongly oppose catch share programs, which they consider as privatizing a resource that belongs to the public. This runs counter to the public trust doctrine, which is the principle that certain natural resources are publicly owned, and although the government is trustee of those resources, the government must manage them on behalf of the public (see earlier discussion on the pros and cons of catch shares) (Lynch 2007).

Catch Share Programs Designed for Commercial Fisheries

Charter operators have been described as commercial fishermen, since they derive their income from their ability to find fish for their clients to harvest.[1] Theoretically, then, a traditional catch share model should also work for a recreational fishery. NOAA's Catch Share Policy (2010) states:

> Charter and head boat captains manage a fishery dependent business similar to commercial fishermen, with many for-hire captains also possessing a commercial fishing license. Given these similarities, Councils might consider catch share management for the charter and head boat sector in a given fishery.

However, most charter operators consider themselves to be service providers, not commercial fishermen. Commercial fishermen sell fish, while charter operators sell the opportunity for anglers to catch fish. The angler is regulated as the harvester, not the charter operator. From this perspective, it does not make sense to grant privileges to private charter operators when fishing rights belong to those who fish—the anglers. There are other important differences between the two sectors that must be carefully considered before designing a catch share program for a mixed-use fishery to ensure the program best serves each sector's goals. It is questionable whether traditional catch share programs, which were designed for commercial fisheries, could even work for recreational fisheries, given the inherent differences between the two.

As outlined in the NPFMC analysis (2006), there are differences in motivation between commercial and recreational fishermen. While commercial fishermen seek the maximum sustainable yield of a fishery by the most efficient and profitable means available, recreational anglers often use inefficient means (e.g., ultra-light fishing tackle) and spend excessively on fishing equipment and charters just to satisfy their subjective needs for a successful fishing trip. Economic incentives motivate commercial fishermen to harvest their quota in the most efficient and expeditious manner possible. Recreational anglers are motivated by different things, whether it is the excitement of landing a trophy sized fish, consuming a highly prized species, not knowing what is on the end of a line, or a combination of all of these. Anglers know they are purchasing the "opportunity" to catch fish. For example, under the 37-inch rule in Area 2C in 2011, while anglers knew they might not take home a halibut more than 37-inches under normal circumstances, they perceived a loss in value because their "opportunity" to harvest a fish more than 37-inches had been lost.

Commercial catch share programs have been implemented around the world to encourage economic efficiency and discourage overcapitalization and unsafe fishing practices. These goals are less relevant for recreational fisheries, which are not overcapitalized in the same way as commercial fisheries. Consideration of bigger and faster boats may enter the thoughts of some charter operators, but these are generally in response to client demand for additional amenities (e.g. full size head, comfortable seating, less travel time to fishing grounds) rather than to catch more fish. Without the pressure to race to fish under any sea condition, safety is not a goal of a recreational catch share program (Comstock 2011).

Furthermore, commercial fishermen participating in catch share programs have some safeguards that are not available to the recreational sector, such as recouping the added costs of participation by the sale of the fish they catch, and a history of prices increasing

1 As described in: Guideline Harvest Levels for the Guided Recreational Halibut Fishery; Final Rule. *Federal Register Vol. 68, No. 153:* 47256–47264 (Friday, August 8, 2003)

during times of low abundance. A lost opportunity to catch a fish by a recreational angler cannot be compensated by monetary means. Regulations that work for the commercial fishery, such as in-season closures, are devastating for charter operators whose clients book trips months, or even years, in advance. Table 10 highlights some similarities and differences between the recreational and commercial fisheries.

TABLE 10: Recreational and Commercial Fishing Differences

SIMILARITIES	
GOALS	
Conservation and sustainable harvest. Historic social and cultural values associated with each sector's fishing activity.	
MANAGEMENT	
IPHC is responsible for halibut allocations between the U.S. and Canada. U.S. allocation and management of halibut is administered through NMFS with advice from the NPFMC.	
DIFFERENCES	
RECREATIONAL	COMMERCIAL
GOALS	
Maximize fishing opportunity (retention and non-retention). Fish for consumption. Trophy fish expectations. Culture of sport fishing (i.e. camaraderie, community sharing of fish, enjoyment of the outdoors). Stability in regulations.	Maximum sustainable harvest (yield). Profitability through efficient operations. Achieve highest market value for catches. Safety.
MANAGEMENT	
Managed under a Catch Sharing Plan that shares annual catch limits with the commercial fishery, but is not managed under a catch share program. Harvest measures based on projected angler demand, therefore imprecise in achieving harvest goals under a traditional catch share program. Harvest data is only estimated, often with great variances within a region, using the average weights of fish.	Managed under a catch share program. Catch shares (IFQ's) with real-time reporting keep harvest within allocation. Accountability of removals are reported in actual pounds removed, not estimates.

If a recreational catch share program is to succeed, these different goals and motivations must be taken into account, and it should be designed to fit the particular needs of each sector.

TYPES OF RECREATIONAL CATCH SHARE PROGRAMS

A recreational catch share program could take a number of different forms. Charter operators, head boat captains, or anglers could hold quota share privileges, either as individuals, or collectively as a group. Participants could acquire quota based on an initial allocation, or through purchase or leasing. There are also countless other design features that could be adapted based on the needs of each particular fishery and community. For example, quota share units could be measured as number of fish retained, pounds of caught fish, or number of fishing days (Kim 2007, 25).

Catch Shares Held by Charter Operators or Head Boat Captains

The most common concept for recreational catch shares is to assign quota share privileges to charter operators or headboat captains based on their historical participation in the fishery. NOAA's Catch Share Policy (2010) outlines its support for this concept, which was also the idea behind the rescinded Alaska halibut Charter IFQ Program, and proposals by the Gulf of Mexico's Gulf Headboat Cooperative and the Rhode Island Party and Charterboat Association. In theory, these programs would lead to greater flexibility for year-round fishing, stability in regulations, economic efficiency through transfers of quota shares, and improved accountability, which would help reduce the need for overly restrictive measures.

However, the NPFMC rescinded the Alaska halibut Charter IFQ Program for a number of reasons mentioned earlier, and the Gulf of Mexico program has faced immense resistance. Much of the opposition relates to two main issues: (1) It takes fishing rights away from anglers (the public) and grants them to a select group of business owners; (2) It divides and manages the recreational sector into different groups—private anglers and anglers who use a guide. This "sector separation" has faced considerable resistance from the recreational community, as it "pits one segment of recreational anglers against another," creates imbalances in distribution of fish among anglers, creates deep political conflicts that have to be addressed by decision-makers, and reduces access for private anglers (Coastal Conservation Association Louisiana 2010).

Catch Shares Held by Individual Anglers

A recreational catch share program could also assign quota shares to individual anglers. However, designing and enforcing a catch share program for millions of heterogeneous anglers, who are transient in nature, and only access the fishery on an intermittent basis, is an insurmountable challenge. For these reasons, NOAA's Catch Share Policy (2010) does not support the design and implementation of catch share programs for individual anglers. If a catch share program granted exclusive rights to a select group of anglers, there would be opposition from the recreational angling community, which values sustained access to fishing for all anglers.

Catch Shares Held Collectively by Groups

Anglers in Common

Although it might not be feasible for individual anglers to participate in a catch share program, it is possible they could do so as a group in common. This is the idea behind the CATCH concept, but it is not an original concept. In 2003, Sutinen and Johnston published their concept of Angler Management Organizations (AMOs), which had been under development for many years. With this concept, fishing rights would be assigned to different non-governmental organizations called AMOs that represent groups of anglers. Each AMO would be allocated a portion of the total allowable catch, and individual anglers would hold stock in the AMO. All participating anglers would have an equal right to fish from the AMO upon purchasing a punch card, fish tag, or license from the AMO. The amount of tickets or licenses would be linked to the available allocation in the AMO, and fishing would stop when the tickets or licenses ran out. Quota shares controlled by an AMO would be traded, sold or purchased as needed between AMO's to meet specific regional demands. Angler rights would be exercised differently in each sub-area and each AMO would recommend harvest measures as a form of self-management.

Sutinen and Johnston analyzed this concept for the red snapper fisheries in the Gulf of Mexico and New Zealand. AMOs depend on a well-organized, local community of recreational anglers. However, the coastal community of recreational anglers is always in flux. People move in and out of regional communities at a rate that might not support the long-term investment of time and money necessary to develop such a complex program. Implementing a fishery harvest ticket program could be complex and costly. As Kim (2007, 30) points out, managers need to

monitor individual angler behavior, not AMO behavior. As a result, AMOs would need to have very clearly defined responsibilities, which may add an additional level of bureaucracy without any reduction in cost. In New Zealand, Sharp (1998) noted some inconsistencies in the program with legal authorities of management councils. In the end, the costs and complexity of implementing an AMO may have outweighed the benefits of the program.

Charter Operators in Common

Another option is for charter operators to hold catch shares in common, rather than guided anglers. Charter operators could form a cooperative (co-op) similar to the Bering Sea and Aleutian Islands crab harvesting cooperatives.[2] The NPFMC would need to approve the transfer of guided angler allocation to the co-op to manage. Permit holders would have to be a member of the co-op in order to fish under the co-ops regulations. If some permit holders opted out of the co-op, they would not be allowed to fish under the co-ops guided angler allocation, which may be supplemented by purchased quota from the commercial sector. A co-op membership card could help with enforcement.

To help cover the costs of the purchased quota, a fee could be charged based on charter halibut permit angler endorsements. This would require an amendment to the charter halibut permit program and would have to be approved through the NPFMC and NMFS regulatory process. A major issue would be the unequal benefits realized among active and less active permit holders. However, a fee on permits could help dissuade people from holding on to idle or minimally used permits.

Another method would be to have co-op bylaws stipulate that each member must collect a fee from their clients based on the number of halibut retained and verified through charter logbooks. The fees could be accounted for separately, similar to fishing licenses and Alaska king salmon stamps, to prevent operators from absorbing fees for competitive marketing purposes.

In the unforeseen dissolution of the cooperative, after all debt is retired, any remaining value could be distributed equally among all members.

A charter co-op has some promising features, and since the concept of cooperatives is not new, there is potential for NPFMC approval. However, it would be challenging to get buy-in from the recreational community due to the granting of angler privileges to charter operators. Critics would likely raise some of the same arguments that were raised against the failed Alaska halibut Charter IFQ Program regarding privatization and decreased access to the resource. In Alaska, it would make it difficult to bring the unguided sector into the common pool plan in the future. This would require maintaining the division of guided and unguided anglers indefinitely. Management would be complicated, as the recreational fishery would have to be managed under three sets of regulations: unguided, guided cooperative member, and guided non-cooperative member. There is also a chance that operators might prefer sub-regional management of allocation, which adds further complexity to the concept.

COMPENSATED TRANSFER OF QUOTA SHARES BETWEEN SECTORS

It is difficult to introduce new participants to an established catch share program without taking privileges away from existing participants, many who have made significant financial investments in the program. One way of addressing this is by compensating existing participants for their quota shares. This is what the CATCH concept proposes to do.

2 Bering Sea and Aleutian Islands Area Crab Rationalization Program. 50 CFR Part 680.21. Federal Register Volume 74 Issue 193 (Wednesday October 7, 2009).

As discussed earlier in this report, there are a few documented examples of compensated reallocation of fishing rights between commercial and recreational sectors from Iceland, Canada, and Alaska. In 2007, the NPFMC considered different alternatives for the compensated reallocation of IFQ between the halibut commercial and charter sectors in Alaska including: (1) a federal common pool; (2) a state common pool; and (3) a regional non-profit association common pool (NPFMC 2007b). The NPFMC examined these alternatives in terms of annual restrictions and caps, disposing quota shares back to the commercial sector, and leasing after the transfers. The NPFMC analysis also looked at gains in economic efficiency due to the wider market for quota share sales, and potential loss in social objectives for the commercial sector. These details will be addressed in the discussions below. While the plan was withdrawn from further action, the NPFMC remains open to the concept (Davis, Sylvia and Cusack 2013).[3]

The Guided Angler Fish (GAF) provision of the Catch Sharing Plan is another form of compensated transfer of IFQ. The GAF program will allow charter operators to lease commercial halibut quota from commercial fishermen to allow guided anglers to harvest a fish outside of current guided angler regulations up to the bag limits of the unguided sector (currently a two-fish of any size bag limit). Although the GAF program will allow charter operators to provide additional fishing opportunities for their clients, it has faced opposition from the recreational community. Some of the primary objections are:

- It is a temporary, year-to-year transfer mechanism, which only benefits individual members of the public who can afford to pay (well-financed charter operations and wealthy anglers). Small charter operators who cannot afford to buy quota will have a hard time competing with larger operators who can.
- Although the intention is for GAF to provide stability and predictability to the charter sector in times of low abundance, no one knows in advance how much IFQ will be available to lease each year and at what price. It will therefore be impossible for charter operators to market trips in advance with any assurance that GAF will be available to use.
- While GAF transfers are limited, it still results in absentee ownership of quota shares, with commercial holders leasing IFQ without fishing it.

CATCH CONCEPT OF A GUIDED ANGLER CATCH SHARE POOL

The CATCH program presented here merges the following ideas presented above:

- Catch shares held by guided anglers in common.
- Compensated transfer of quota shares from the commercial to the recreational sector.

The CATCH program aims to maintain or increase guided angler fishing opportunities for halibut in Alaska (Areas 2C and 3A) through the compensated, open market transfer of halibut quota shares from the commercial sector to guided anglers in common. Guided recreational anglers would be treated as one catch share entity with ownership in common. A representative holding entity would

3 As recently as December 2012, the Council offered to develop a discussion paper on acceptable charter fleet common pool resource holding entities.

purchase commercial halibut quota from willing IFQ sellers and hold it in a common "pool" for guided anglers. The pool of quota could be used to provide stability in guided angler regulations with the following objectives:

- Area 3A maintains a two halibut of any size daily bag limit.
- Area 2C reaches a one halibut of any size daily bag limit in times of low abundance and a two halibut of any size daily bag limit in times of high abundance.

The use of catch shares would differ from the commercial fishery in two ways. First, the fish represented by recreational quota shares would not be entered into commerce as in the commercial fishery, but would be used to supplement annual allocations upon which annual harvest measures are based. Second, a holding entity acting on behalf of all guided anglers in common would hold quota; not individuals. The concept would work in the following way:

- An organization or "holding entity" would be formed to purchase, hold, and manage commercial halibut quota shares on behalf of the guided recreational sector. The NPFMC would recommend and the Secretary of Commerce would approve this entity as a qualified participant in the Alaska Halibut and Sablefish IFQ Program.
- The holding entity would obtain funds from a loan, grant, or other funding source, and would use those funds to purchase halibut quota on the open market from willing commercial IFQ sellers. The NPFMC would consider controls to protect the objectives of the IFQ program (e.g., limits on quota transfers).
- This purchased quota would be held in a common "pool" for the benefit of all guided recreational anglers, and would be used in the following ways:
    - » The pool of quota would be added to the annual guided sector allocation, and the NPFMC and IPHC would use this "revised" allocation when recommending the next season's harvest management measures.

Annual Allocation + Guided Angler Pool
=
Revised Guided Sector Annual Allocation

    - » The pool of quota could be held in reserve, and used as a buffer to account for uncertainties in harvest.
- Over time, the entity would purchase enough quota to make a meaningful impact on the guided sector's annual harvest measures.
- The guided sector would retire its debt through some form of long-term funding mechanism such as a halibut stamp, charter fee, or combination of financing tools.
- The charter sector would work with state and federal agencies to improve accountability tools and reporting requirements to ensure guided anglers participate with the level of accountability required for a catch share program.

Representatives of the recreational fishery designed this program for the benefit of recreational anglers. By giving guided anglers a way to permanently increase their allocation, the program aims to provide relief from the economic impacts of overly restrictive regulations, and bring stability in regulations from year-to-year. This will maintain public access to the fishery, provide stability to the guided recreational sector, and benefit coastal economies. Table 11 summarizes the goals, objectives, activities, results, outcomes, and long-term impacts of the CATCH program.

TABLE 11: CATCH Program: Goals, Objectives, Activities, Results, Outcomes and Long-Term Impacts

GOAL	OBJECTIVES
To maintain or increase guided angler halibut fishing opportunities in Alaska (Areas 2C and 3A) through an open market transfer of halibut quota shares from the commercial sector to guided anglers in common.	Area 3A maintains a two halibut of any size daily bag limit; Area 2C reaches a one halibut of any size daily bag limit in times of low abundance and a two halibut of any size daily bag limit in times of high abundance.
ACTIVITIES	**IMMEDIATE RESULTS**
NPFMC recommends, and Secretary of Commerce approves, a new guided angler holding entity as a qualified participant of the IFQ program. NPFMC designs program to ensure objectives of IFQ program are not undermined. New guided recreational data collection tools are developed and implemented that provide close to real-time reporting of harvest, which will assist in preparing timely harvest projections for the following season. Holding entity secures initial funding for program and any approved user fee/charter assessments are implemented. Holding entity starts purchasing quota from willing commercial sellers and holds it in guided angler "pool." Purchased quota shares are used to increase annual guided angler allocation.	Guided angler entity enters a "willing seller/willing buyer" IFQ market, allowing the transfer of halibut quota between the commercial and guided recreational sectors. Value of IFQ quota increases for commercial and guided recreational sectors, allowing for more economic leveraging of quota share. Commercial fishermen wanting to sell their quota benefit from a new buyer on the market. Commercial fishermen are compensated as halibut quota is moved from the commercial to recreational sector.
OUTCOMES 1–3 YEARS AFTER PROGRAM IS IMPLEMENTED	**LONG-TERM IMPACTS**
Guided angler allocation has a small but growing buffer to account for fluctuations in angler demand. With this buffer and new reporting and accountability tools, guided recreational sector stays within allocation. Conservation goals are achieved. Reduced stress between charter and commercial sectors over allocation. Managers and policy makers have more time and resources to focus on other issues.	Halibut fishing opportunities for guided anglers are protected and stable, even in times of declining abundance. Charter sector can take advantage of marketing opportunities without fearing additional clients will cause overharvest. Public access to fish is preserved. Stability in regulations means better market predictability and business for charter operators. Charter operations and jobs are protected. Local communities and supporting businesses benefit from a viable tourism economy. Commercial sector benefits from a stabilized fishery. Long-term conservation goals are achieved.

How Does the CATCH Program Overcome the Challenges of Recreational Catch Shares?

As described earlier, one of the obstacles to recreational catch share programs has been insufficient monitoring and data. However, the situation has improved in Alaska in recent years with the saltwater charter logbook program. Guided angler data is more readily available and the potential application of an electronic reporting system could allow for real-time data collection (see discussion below under Accountability).

Many of the concerns regarding stakeholder impacts would not apply to the CATCH program, since guided anglers in common would hold quota shares, not individual anglers or charter operators. This means that concerns about reduced access for anglers, decreased nature and quality of trips, job loss, reduced allocation, and reduced profits would not apply.

In terms of the general opposition to catch shares, this is an issue that is not going to disappear. This topic is very heated and has polarized fishing communities around the world. CATCH has decided to take a pragmatic approach to increasing guided angler allocation by working within the parameters of the existing commercial IFQ program. In addition, CATCH has elected to proceed with project objectives in conformance with the current federal distinction between unguided and guided anglers in Alaska, Areas 2C and 3A (see CATCH value statement in sidebar). CATCH is developing this program so that it can integrate private, unguided anglers, if needed, in the future. It could be argued that this approach is a way to permanently transfer private quota share holdings back to the public sector.

There are, nonetheless, a number of social, economic and operational risks associated with the CATCH program. This report addresses these risks, and Davis, Sylvia and Cusack (2013) go into more detail in the economic analysis. Table 12 outlines the primary risks, along with mitigation strategies and opportunities.

CATCH VALUE STATEMENT

CATCH acknowledges that the rationalization of the commercial halibut fishery resulted in harvest privileges for some participants and significant investments by other participants. With sensitivity to this situation, the project seeks to improve recreational fishing opportunities in Alaska by a compensated rather than an uncompensated re-allocation of fish between resource users.

The CATCH project supports the notion that guided and unguided recreational anglers are the same, regardless of how they access the halibut fishery. Recreational anglers are a homogenous group participating in an identical activity. However, as a matter of practicality, CATCH has elected to proceed with project objectives in conformance with the current federal distinction between unguided and guided anglers. CATCH aims to develop a program that will accommodate the entire recreational halibut fishery at a later date if similar management of the unguided sector becomes necessary.

Attaining Optimum Yield

The halibut fishery is managed to a maximum sustainable yield (MSY), so that the mortality rate does not exceed the biological sustainability of the fishery. This must be balanced with the optimum yield (OY) of the fishery, which takes into account the economic and social benefits to the nation. MSY is not sacrificed for OY, but trade-offs between economic and social benefits in OY must be considered in the design of an inter-sector quota shares transfer mechanism.

A CATCH entity, as a new participant in the IFQ fishery, would not impact MSY because quota shares are just being re-distributed among participants with the same net removals from the resource. On the other hand, a new class of participants in the IFQ fishery may positively impact OY. A review of the literature regarding the net socio-economic value of a fish harvested in the commercial sector versus the recreational sector, shows greater value to the nation if harvested in the recreational sector (Davis, Sylvia and Cusack 2013). A compensated shift of allocation to guided anglers may benefit OY in the long term.

TABLE 12: Risks, Mitigation Strategy, and Opportunities

RISKS	MITIGATION STRATEGY	OPPORTUNITIES
ECONOMIC/ SOCIAL		
	COMMERCIAL	
Increase in quota share prices could make it difficult for small-scale fishermen and new entrants to purchase quota. This could change the composition of traditional fishing communities as small-scale fishermen are pushed out of the fishery. Commercial fishermen may oppose the program, fearing a loss in allocation to charter operators.	Program controls can help protect the objectives of the IFQ program (e.g., limits and caps). Program should consider measures that allow opportunities for new entrants, e.g., surplus quota could be given to new entrants. Program should be two-way to allow commercial fishermen to buy quota back from charter sector.	The program is between a willing seller and a willing buyer. Trading would only occur between voluntary participants. Commercial fishermen are compensated for any transfer of quota share between sectors. Commercial fishermen who are in debt could find relief from a new buyer on the market. The CATCH program would increase the value of quota for remaining participants, which would allow for more economic leveraging of quota shares for commercial fishermen. Under the GHL, overages by the charter sector were considered to be uncompensated reallocation, which impacted allocations for all IFQ holders. Under the CSP, transfers will only affect the IFQ accounts of those selling, buying, or leasing quota. If properly designed, the program will support the best socio-economic utilization of the fishery for coastal communities.
RECREATIONAL		
Members of the recreational sector may oppose the program, which will be seen as privatizing a public resource, paying commercial fishermen for something that belongs to the public, and accepting the division of guided vs. unguided anglers in Alaska. Halibut stamp could exclude some anglers who cannot afford to pay, or the extra expense could motivate anglers to fish elsewhere. Charter assessment fee could harm small businesses. Charter operators may object to paying a fee for something that belongs to anglers. Acceptance of CATCH program acknowledges that increases in allocation will have to be through purchased transfers and not gained through the public policy process.	Educate sector to explain CATCH's pragmatic approach: The NPFMC and NMFS are not likely going to reallocate quota shares to the charter sector. The CATCH approach is a practical way to increase guided angler allocation. CATCH concept does not close the doors for unguided anglers to join the CATCH pool in the future. Fees are an investment in the charter sector for the future.	Anglers would have a means of increasing fishing opportunity. All guided anglers would have equal access to the fishery and fish under the same regulations. Increased allocation would result in stability in regulations.

TABLE 12: Risks, Mitigation Strategy, and Opportunities (continued)

RISKS	MITIGATION STRATEGY	OPPORTUNITIES
OPERATIONAL		
MANAGERS/REGULATORS (NPFMC, IPHC, NMFS, ADF&G)		
Depending on the details of the program, this could increase the administrative burden and costs.	Prioritize developing program measures that are most effective and efficient for regulators and managers. Ensure no changes are required to the Halibut Act. Design enforceable data accountability into the CATCH plan.	This would put an end to years of allocation conflicts, thereby freeing up time for managers and regulators to focus on other issues. Precedent is already set with the Community Quota Entity (CQE) program, in which the NMFS authorized entities to purchase and hold halibut quota on behalf of communities.
CATCH ENTITY		
Inability to raise enough funds. Lack of quota available on the market or commercial fishermen unwilling to sell. Could take many years to acquire enough quota shares to make a difference. What if program does not work after numerous fees have been paid?	Be sure to have a diverse funding portfolio, which should be evaluated and revised each year. Set expectations early on that this is a long-term solution, which requires patience on the part of the guided recreational fleet. The traditional number of pounds of quota for sale yearly would not meet the immediate needs of the guided recreational fleet, even if funding were not an issue. Set up a dissolution plan that would keep all purchased quota in the guided angler allocation.	Although not likely to solve the guided recreational sector's needs in the short-term, long-term advantages stand to provide significant benefits to the guided recreational fishery and the local businesses and communities it supports.
BIOLOGICAL		
Rollover of overages/underages may have long-term impact on halibut stocks.	Work to limit amount of overages/underages over time.	Acceptable rollover provisions would provide the needed flexibility for projecting future harvest in a catch share recreational management plan.

RECOMMENDATIONS FOR INTEGRATING A RECREATIONAL FISHERY INTO A CATCH SHARE PROGRAM

This section has examined the challenges of integrating a recreational fishery into a catch share program, listing different alternatives for recreational catch shares including the CATCH program. Based on this discussion, CATCH recommends that in addition to conservation and sustainability goals, regulators should consider the following when integrating the guided recreational sector into the Alaska IFQ program:

- A recreational catch share program should aim to maintain access and opportunity for all anglers equally, and not a select group of anglers.
- Regulators should assign fishing privileges to anglers and not charter operators.
- The program should aim for stability in regulations, exploring creative ways of keeping the guided sector accountable in ways that avoid in-season management and closures, which are devastating for charter businesses and coastal communities.
- Managers should be flexible when setting annual catch limits and accountability measures for a recreational fishery given the uncertainties in estimating angler demand.
- The program should provide mechanisms that support the best socio-economic utilization of the fishery for coastal communities, whether commercial or recreational.

Guided Angler Holding Entity

The CATCH program would require a holding entity or administrative body to purchase and manage halibut quota shares on behalf of the guided recreational sector. The holding entity would perform administrative functions such as arranging and maintaining financing for the purchase of IFQ quota, negotiating quota share purchase prices, and completing the necessary reporting requirements. This section begins by describing the regulatory requirements for a new eligible holding entity. It then examines different options for a holding entity including: the federal government, the State of Alaska or state owned entity, a regional fishery association as described in the Magnuson-Stevens Act, and a Recreational Quota Entity (modeled after a Community Quota Entity in the Alaska IFQ Program).

REGULATORY REQUIREMENTS FOR A QUOTA HOLDING ENTITY

While sablefish is managed under *the Fishery Management Plan for Groundfish of the Gulf of Alaska* and under the authority of the Magnuson-Stevens Act, halibut is managed by the IPHC (under the authority of the Convention between the U.S. and Canada) and the Halibut Act. The Halibut Act and the Convention have been interpreted to assign responsibility to the NPFMC on halibut management issues concerning allocation and limited entry. Thus, the NPFMC is authorized to amend the federal regulations governing the Halibut and Sablefish IFQ Program under existing law (NPFMC 2007a).

Under the Alaska IFQ Halibut and Sablefish Program, the following entities are currently eligible to hold quota shares:

1 U.S. citizens (individuals and non-individuals) who were given initial quota shares or who obtain a Transferable Eligibility Certificate.

2 Organizations through the Community Development Quota (CDQ) program.

3 Communities as represented by Community Quota Entities (CQEs).

To establish a new, eligible quota entity, the NPFMC would have to recommend the entity as an eligible participant in the IFQ program to the Secretary of Commerce. Several changes would have to be made to sections within the IFQ regulations, including those defining the qualified persons or entities that can receive catcher vessel quota shares by transfer, as well as any restrictions placed on those qualified entities (NPFMC 2003). As a federal action, certain laws (e.g., National Environmental Policy Act, Regulatory Flexibility Act) would require an analysis of alternatives and a public review process (NPFMC 2007b, 55).

Although the Magnuson-Stevens Act does not apply to the management of halibut in Alaska, the NPFMC does often voluntarily apply Magnuson-Stevens Act standards to its halibut actions (Jane DiCosimo, personal communication, February 8, 2013). The Magnuson-Stevens Act places restrictions on who can acquire and hold harvesting privileges, mandating that harvest privileges be held only by "a United States citizen, a corporation, partnership, or other entity established under the laws of the United States or any State, or a permanent resident alien, that meets the eligibility and participation requirements established in the program." The Magnuson-Stevens Act goes on to describe two eligible entities: a Fishing Community (FC) and a Regional Fishery Association (RFA) with particular criteria for both. In an analysis by Anderson and Holiday (2007), they conclude that "even if one accepts the strict interpretation of RFAs and FCs, Councils can still allocate to other types of entities to accomplish fishery management objectives…organizations of industry participants, broadly or narrowly defined at

the will of the Council, could be treated in a similar manner, as long as they have obtained legal status as an entity." In sum, the Magnuson-Stevens Act gives councils discretion to authorize different types of holding entities, as long as they are achieving the goals of the Magnuson-Stevens Act.

TYPES OF HOLDING ENTITIES

Federal Government

The NPFMC (2007b, 56) discussed the possibility of having the federal government, through NMFS, hold halibut quota in trust for a common pool of charter operators. Feasibly, NMFS could also hold quota share for a common pool of guided anglers. NMFS already acts as trustee for the IFQ program, but as the NPFMC analysis showed, this is different from acting as the holder, purchasing agent, and manager of quota share. The NPFMC consulted NOAA general counsel to determine the feasibility of this plan, and the general counsel concluded that without a detailed description and plan for how it would work, they could not conduct a proper analysis on the legislative changes that would be required. In sum, it is theoretically possible that NMFS could act as the CATCH holding entity, but until the CATCH concept is fully developed, there is no way of knowing with any certainty. Since the CATCH plan is still in the conceptual phase, the research team was unable to pursue this further.

State of Alaska or State Owned Entity

While the State of Alaska does not have the authority to directly manage Pacific halibut, it is possible that a state agency or position within the agency (e.g., Commissioner of Fish and Game) could hold and manage quota in trust for a pool of guided anglers. However, according to the NPFMC analysis, "the state has indicated that running both common pool and the associated revenue streams would be easier if the state had full management authority for the halibut fishery" (NPFMC 20–7b, 71). Ginter (2006) outlines the State's past interest in managing halibut and the obstacles faced. Ultimately, Congress would have to amend the Northern Pacific Halibut Act to change management authority, which is beyond the scope of the CATCH project.

Alternately, a quasi-governmental, State Owned Entity (SOE) corporation could be formed similar to the Alaska Railroad Corporation. The entity would need to be created in Alaska statutes and formulated through the Alaska legislative process. The statute that created the Alaska Railroad Corporation reads:

> The corporation is a public corporation and is an instrumentality of the state within the Department of Commerce, Community, and Economic Development. The corporation has a legal existence independent of and separate from the state.[4]

An advantage of an SOE would be the increased opportunity to receive state and federal grants and loans to fund the purchase of quota shares. However, since the entity would only represent guided anglers and not the entire recreational fishery, this could pose a problem. Another drawback would be the potential requirement of a governor-appointed board of directors, which was required by other SOE's like the Alaska Railroad Corporation, the Alaska Seafood Marketing Institute, and the Alaska Permanent Fund Corporation. A politically appointed board may or may not serve the best interests of guided anglers

4 AS 42.40 Alaska Railroad Corporation Act

Regional Fishery Association

Regional Fishery Associations (RFAs) are one of the two groups described in the Magnuson-Stevens Act that can acquire and hold limited access privileges (the other is a Fishing Community). The reauthorized Magnuson-Stevens Act of 2006, Section 2(14), introduced the concept of an RFA:

> (14) The term 'regional fishery association' means an association formed for the mutual benefit of members—
>
> (A) to meet social and economic needs in a region or sub region; and
>
> (B) comprised of persons engaging in the harvest or processing of fishery resources in that specific region or sub region or who otherwise own or operate businesses substantially dependent upon a fishery.

The Magnuson-Stevens Act outlines a number of criteria for an RFA. It must be located within the management area of the relevant council and must meet council-defined (and Secretary of Commerce-approved) criteria for eligibility. It must be a voluntary association with established bylaws and operating procedures. An RFA must also consist of participants in the fishery that hold quota shares in that region, including commercial or recreational fishing, processing, fishery-dependent support businesses, or fishing communities. Finally, an RFA is not eligible to receive an initial allocation of quota shares but it can use those of its members, or may purchase them on the open market (Anderson and Holiday 2007, 39).

An RFA has several attributes that could work for the CATCH program. It is a voluntary organization capable of holding quota for a group in common. Anderson and Holiday (2007) point out that while Fishing Communities can be identified on a map, and qualify due to their needs for regional economic development, an RFA is not necessarily geographically specified, with no reference to the need for regional economic development (Anderson and Holiday 2007, 39).

However, some of the required criteria for an RFA do not apply to a guided angler holding entity. Since an RFA must be voluntary in nature, the CATCH plan would require an opt-out provision so that participants who do not wish to participate do not have to. This would present logistical problems for managers and enforcement, as it would require several different sets of rules and different means of identifying fish under those rules (i.e., one set of rules for unguided anglers, one for guided anglers who are fishing from the pool, and one for guided anglers who have opted-out of the pool). The opt-out provision would also be problematic if the pool's funding source was user-based (for example a halibut stamp), since it would be difficult to anticipate future revenues without knowing how many guided anglers would be opting-out, and it would create new levels of complexity if only charging a subset of anglers. The criteria that a participant must already hold quota shares does not apply to a guided angler holding entity, since regulatory allocations are not the same as holding quota shares. This criteria would have to be changed, and would require an amendment to the Magnuson-Stevens Act. The CATCH project, as outlined in its premises, has chosen not to pursue any amendments to the Magnuson-Stevens Act due to the time and financial resources needed (see the CATCH project premises in Appendix B). Fishery management councils have not formed RFAs to date, and so there are no examples of the "Council criteria" mentioned in the Magnuson-Stevens Act. The time needed to develop a set of criteria through the Council process would probably create a lengthy delay in implementing a guided angler RFA.

Recreational Quota Entity

As described in detail earlier in this report, the NMFS adopted the Community Quota Entity (CQE) program in 2004 to protect against the displacement of small-scale community fisheries caused by the outward migration of quota shares. Under Amendment 66, rural communities are eligible to form non-profit corporations, which can purchase and hold catcher vessel quota share in Areas 2C, 3A, and 3B. These CQEs can then lease the resulting annual IFQ to individual community residents.[5]

Before the CQE program, only individuals could hold quota share, with few exceptions. With Amendment 66, NMFS authorized non-profit entities to hold quota shares on behalf of communities for the first time. While a CQE represents a geographic community, it is possible that this concept could be applied to a "community of users" (i.e., guided anglers), called a Recreational Quota Entity (RQE). As with the CQE program, the NPFMC has relatively broad authority under the Halibut Act to define and implement management programs for the benefit of the halibut resource. Therefore, it is possible for a community of halibut resource participants to form an RQE, with the capability of purchasing, selling, and/or leasing quota shares.

The NPFMC would have to take action to recommend an RQE as a qualified participant of the IFQ program for Secretary of Commerce approval. The precedent has already been set with the CQE program. To ensure there are no disruptions to the social and economic goals of the IFQ program, restrictions on the transfer of quota shares, as applied in the IFQ and CQE programs, would need to be part of the NPFMC's analysis (see discussion on Quota Transfer Mechanisms). The number of individual participants in an RQE would be much larger than a CQE, so the amount of quota shares needed annually, and in total, would differ. These special requirements may take time to work out, but all seem accomplishable under the authority of the NPFMC.

Table 13 compares the attributes of a CQE and possible attributes of an RQE. While an RQE's attributes would need to go through the NPFMC process of analysis and approval, options are listed below to illustrate how this could work

5 Community Purchase; Final rule. *Federal Register Vol. 69, No.84* (April 30, 2004): 2368–23694.

TABLE 13: Comparison Between CQE and Potential RQE Attributes

ATTRIBUTES	CQE	RQE
Legal Entity	State Non-Profit Organization	State Non-Profit Organization or Regional Non-Profit Association
Community Representation	City Councils/Organized Community Associations/ Community Petition	Guided Anglers by definition are associated with charter operators. Could validate by client petition.
Number of Entities	Designated 45 Communities. Other communities can apply. A community may not have more than one CQE representing it, but one CQE can represent more than one community.	One entity representing two regions (Area 3A and Area 2C) Or, two entities representing two regions (Area 3A and Area 2C)
Participants	Residents of a geographic community with less than 1,500 residents, no road access to larger communities, direct access to saltwater, and documented historic participation in the halibut or sablefish fisheries.	Clients of halibut charter operators (guided anglers) as defined in regulation since the implementation of the GHL in 2003.
Eligibility	CQE community authorized in Amendment 66 (see criteria under participants above). Leaseholders must be permanent resident of community and eligible to hold IFQ.	Sport fishing anglers using the services of a charter operator in possession of a Charter Halibut Permit.
Initial Allocation	None	None
Caps	Community Caps (Same as IFQ Program): 1% of Area 2C 0.5% of combined Area 2C, 3A and 3B Cumulative Caps on all Communities: 3% first year and every year thereafter up to 21%	Regional Caps: Area 2C (e.g., 20–40%) Area 3A (e.g., 15–20%) Cumulative Caps on all Regions (e.g., 3% first year, 4% next year, etc.) Annual Caps: 1%–100%
Transfer & Use Restrictions	No Class "D" Shares No Inter-Regional Purchase 10 Blocks per Management Area No purchase of quota share blocks in amounts small enough to be "swept up" to form larger blocks	e.g., limits on Class "D" Shares, or limits per class (see discussion under the Quota Transfer Mechanisms section) No Inter-Regional Purchase Limits on blocks
Ability to Sell quota share	Only to improve, sustain, or expand opportunities for community members to participate in the IFQ fisheries	Two-way transfer between commercial and guided angler sector
Ability to Lease quota share	Not to exceed 50,000 pounds/lessee Not to exceed 50,000 pounds/vessel Lessee must be on board vessel Vessel class restrictions do not apply	Limited leasing to adjust for uncertainty in guided angler demand.
Program Review	Every 5 years	Every 5 years

An RQE may face some of the same problems that CQEs have faced with price and availability of quota. However, since an RQE would be representing a much larger community with more resources, it would likely have more access to funding. The RQE, in many ways, would be a simplified version of a CQE, since there would only be one or two non-profit corporations (instead of up to 45), and there would not be the added burden of having to lease it to individuals.

RQE non-profit corporation

As with the CQE program, a non-profit corporation would have to apply to NMFS to become an eligible RQE able to purchase, hold, and transfer quota shares on behalf of guided anglers. The non-profit corporation could take the form of a traditional non-profit corporation established by the Alaska Non-Profit Corporation Act, or it could take the form of a special-interest non-profit corporation such as a Regional Non-Profit Association (RNPA), which would have to be established in Alaska statutes, but would have the ability to self-tax.

The NPFMC (2007b) analyzed the possibility of an RNPA formed under Alaska statute, to hold halibut quota shares on behalf of charter operators in common. An RNPA could be modeled after the Regional Aquaculture Association developed to enhance salmon production, or the Regional Seafood Development Association developed for the purpose of marketing and promoting seafood products. Both associations have statutory authority to conduct elections for a region's permit holders to vote on a self-imposed state tax. Both must have a board composed of a broad cross-section of user groups (e.g., fishing harvesters and other user groups in the region including sport, commercial, and subsistence harvesters, processors, and local community representatives).

Under an RQE program, an RNPA could be established as a special purpose non-profit through an amendment to Alaska state statutes. The focus of the entity would be to buy, sell, lease and manage quota share holdings on behalf of guided anglers in common, and to determine the level of annual charter operator taxes/fees.

Due to the large and disparate nature of guided anglers, it is not practical for guided anglers to vote and self-tax. Instead, an RNPA would have to consist of charter operators, as this business sector stands to benefit the most from increased angler harvest opportunity. With a CQE, the NPFMC recommends that a non-profit corporation provide proof of support from the community that it is seeking to represent. RQEs may also need to provide proof of support from the guided recreational angling community, such as a petition, or statement of support from representative associations. Charter halibut permit holders could then act on behalf of their clients, and could vote on a self-imposed tax, which could then be either passed through to the guided anglers in the form of higher charter fees or could be absorbed by the CHP holder as an operating expense. With a self-tax, however, some charter operators may have issues with guided anglers holding quota shares instead of charter operators (this is discussed in more detail in the Funding section of this report).

The advantage of a traditional non-profit corporation is that it could be set up immediately. An RNPA, on the other hand, would require legislative action and could take years to set up. However, since the RQE program itself would take years to establish, the timing impacts may be negligible. In the end, whether the CATCH program sets up a traditional non-profit corporation or a special purpose RNPA will depend on its funding strategy. If a charter assessment/tax is part of the funding plan, then an RNPA will be necessary.

RQE Governance

An RQE would require a decision-making structure for quota management and executive leadership, financial oversight, and working ties with fishery managers. This would incur expenses and require funding (see Funding below). In the CQE program, one CQE can represent more than one eligible community, but no community can be represented by more than one CQE. The intent was to minimize confusion and ensure effective and efficient administration of the program. While RQEs would represent all guided anglers who fish in Area 2C and/or Area 3A, there is the question of whether there should be just one RQE, or two RQEs, and how those RQEs would be governed. Table 14 outlines two options for organizing the RQEs, with pros and cons:

TABLE 14: Number and Governance of RQEs

NUMBER AND GOVERNANCE OF RQES	PROS	CONS
One RQE represents both Areas 2C and 3A, but each Area is managed separately. Regional subcommittees on the Board of Directors oversee each Area's quota share pool.[6]	Guided sector is represented as a unified voice in IFQ program. Both Areas share administrative expenses (e.g., quota share manager, accountant). Reduced administration for fisheries agencies.	Challenge to compose a board that equally represents the interests of both Regulatory Areas. A regionally diverse board might have more difficulty making decisions that impact each area differently. May be complicated with one single Board managing two different quota share pools.
Two RQEs: one for Area 2C and one for Area 3A.	Separate RQEs could make more sense, since Area 2C and Area 3A will have separate quota share pools with different management measures. Helps ensure each regulatory area is adequately represented.	May intensify regional goals and differences. Guided anglers may not have a unified voice with the NPFMC. Increased administrative burden to the program and agencies.

Whether there are one or two RQEs, the composition of RQE Board members would likely include Area 2C charter operators, Area 3A charter operators, and guided recreational anglers. The bylaws may require a broad range of charter business types (e.g., lodges, day charters, live-a-boards). It is possible that other stakeholders could also sit on the Board, such as private anglers, fishery managers, commercial IFQ holders, or community representatives. This decision would be made when the by-laws are written and it is determined at that time which stakeholders would most benefit from the purchase of commercial IFQ quota shares, and which stakeholders would be most beneficial to the program.

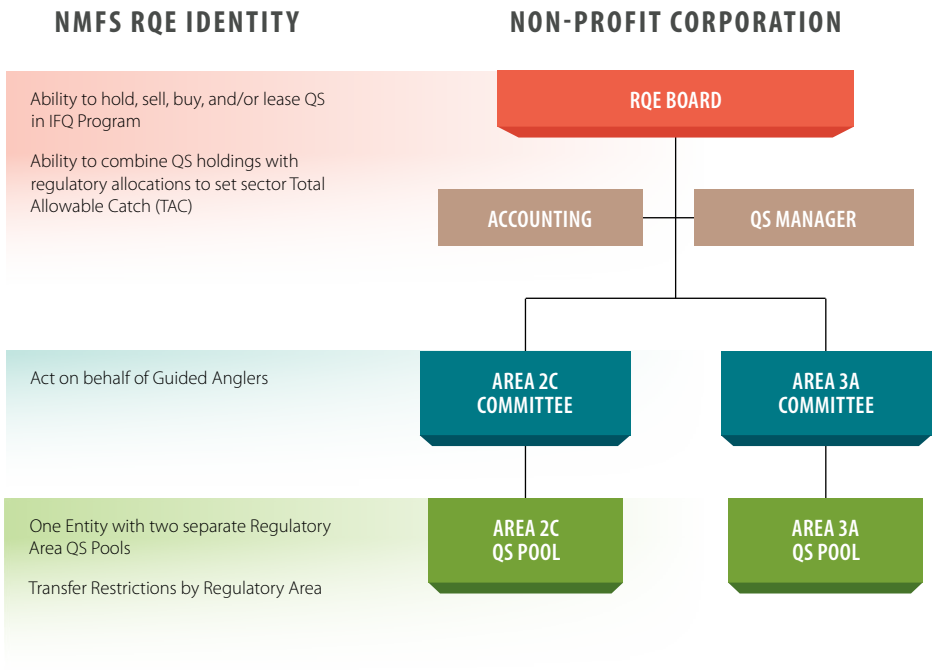
6 The CATCH charter sector stakeholder panel expressed a preference for one RQE with one Board that has broad discretionary authority over decisions such as transferring money between regulatory areas (see Stakeholder Feedback in Appendix C).

RECOMMENDATIONS FOR A HOLDING ENTITY

This section has outlined the legal requirements for establishing a new participant in the IFQ program, and has presented different options for a guided angler holding entity including: the federal government, the State of Alaska or state owned entity, a regional fishery association (as described in the Magnuson-Stevens Act), and a Recreational Quota Entity (modeled after a Community Quota Entity). Based on this discussion, CATCH makes the following recommendations for a holding entity:

- The NPFMC should pursue a Recreational Quota Entity (RQE) program, modeled after the Community Quota Entity (CQE) program.
- NMFS should approve an RQE as an eligible participant of the Alaska IFQ Halibut and Sablefish Program, with authority to purchase, sell, lease and manage halibut quota share in trust for all halibut guided anglers in common.
- One RQE should be formed to represent both IPHC Regulatory Area 2C and Area 3A, with each area having its own, separate quota share management pool.
- One Board of Directors should oversee the program, with subcommittees representing each Area. The Board should be composed of charter operators from Area 2C, charter operators from Area 3A, and recreational anglers. Other stakeholders may also be relevant on the Board, but this decision should be made when the by-laws are written.
- If a State halibut stamp is achieved as a funding mechanism for this program, then a non-profit corporation, as described in the Alaska Non-Profit Corporations Act, should be formed as the legal entity of the RQE.
- If a charter assessment or tax is pursued as an alternate to a State halibut stamp, then a regional non-profit association (RNPA) should be formed as the legal entity consisting of charter operators acting on behalf of their clients. The RNPA should have statutory authority to conduct elections for each Area's charter permit holders to vote on a self-imposed state tax. Any quota share purchased would become the property of all guided anglers in common.

FIGURE 9: RQE Governance



Quota Transfer Mechanisms

The CATCH program, if established, would be the first program to allow for the permanent, inter-sector transfer of quota share. The NPFMC would have to define new methods and procedures to allow for and regulate the transfer of quota from one sector to another. This section describes different quota transfer mechanisms and other related issues, staring with a description of the CATCH entity's transfer goals (what the CATCH program hopes to achieve through the inter-sector transfer of quota shares) and transfer needs (how much quota the CATCH entity will need to transfer to reach its goals). It then outlines different transfer mechanisms, including transfer and use restrictions, a temporary relaxation of restrictions, leasing, what to do with surplus quota share, administrative issues, and alternative transfer mechanisms.

TRANSFER GOALS

Area 2C and Area 3A guided anglers are managed under separate allocations and bag limits, and so have different CATCH transfer goals. From 2003 to 2013, the GHL allocations for Area 3A were sufficient to maintain a daily bag limit of two halibut of any size. However, halibut abundance has been in decline in recent years and with the new Catch Sharing Plan in effect for 2014, this historic bag limit may for the first time be in jeopardy (the NPFMC is recommending a two-fish bag limit with one under 29 inches for 2014). The recent economic downturn has kept guided angler harvest down. As the nation's economy improves, the numbers of guided anglers fishing in Area 3A will likely increase. The objective for Area 3A is, then, to sustain its daily bag limit of two halibut a day of any size, with the anticipation of a slowly recovering halibut stock abundance and an increased demand for fishing.

The NMFS's management measures were not effective in Area 2C, where guided anglers exceeded the GHL in the very first year of the program's implementation (2004). In response, the NMFS implemented progressively tighter restrictions, going from two fish of any size to one fish less than 37 inches in 2011. In 2012 and 2013 a "reverse slot limit" rule was in place, allowing anglers to catch one fish per day less than or equal to 45 inches in length or greater than or equal to 68 inches in length (U45 O68). The NPFMC is now recommending a reverse slot limit of U44 O76 for 2014.

The initial goal for Area 2C would be to return to a one fish of any size daily bag limit in times of declining abundance, and as abundance increases, to be able to return to a traditional two fish daily bag limit of any size. Unfortunately, as pointed out by Meyer (2013a), a two-fish bag limit seems unlikely in the near future, since "spawning biomass is close to the low threshold and the immediate future does not look promising in terms of halibut recruitment." The CATCH program should initially focus on the one fish of any size bag limit for Area 2C until halibut abundance improves.

Summary of CATCH transfer goals

Transfer enough halibut quota share to:

- Maintain a two halibut of any size daily bag limit in Area 3A;
- Reach a one halibut of any size daily bag limit in times of low abundance and a two halibut of any size daily bag limit in times of high abundance in Area 2C.

TRANSFER NEEDS

It is difficult to determine with precision how much quota the CATCH entity will have to purchase to achieve these daily bag limit objectives. The amount will depend on a wide range of variables, such as the average size of fish in a given year, shifts in angler demand, future regulatory allocations, changes in harvest measures, changes in the global economy, or even the weather. As difficult as it is, managers must estimate future harvest when selecting a season's harvest measures aimed at keeping harvest within allocation, while allowing for maximum harvest opportunity.

Fisheries managers can estimate future harvest by analyzing past harvest records, including data on the number of anglers, number of fish, and fish sizes during a certain period of time, under certain management measures. Scott Meyer (2013a) recently used this approach to analyze potential guided angler harvest objectives under one and two fish bag limits. Using a similar approach, and borrowing from Meyer's data, the CATCH researchers use conservative estimates of halibut biomass and management measures in times of low abundance to estimate transfer needs in Area 2C and 3A under CSP management.[7]

7 There are many ways to calculate transfer needs. The authors have chosen this method for illustrative purposes.

Tables 15 and 16 use past records to calculate how many pounds of fish Area 2C and Area 3A would need to reach their respective transfer goals. The records were adjusted to reflect what the combined catch limits (CCL) would have been in Area 2C and Area 3A if the CSP were in effect instead of the GHL. The calculations use logbook data, since this is the source of guided angler harvest data under the CSP.

Estimated Transfer Needs in Area 2C

Table 15 uses a five-year average of CCLs in Area 2C (2008–2012) to estimate the guided angler allocation under the CSP. The five-year average CCL is 3.79 million pounds. The guided sector would receive 18.3% of the CCL at this level of CCL, which is 693,000 pounds. To estimate guided angler harvest under a one fish of any size bag limit, the estimate uses harvest data during the years 2009 and 2010, since they were the last years Area 2C bag limits were one fish of any size. Subtracting 693,000 pounds from the average guided angler harvest of 1.28 million pounds, results in an estimated total transfer of **587,000 pounds** that Area 2C would need to meet the objective for a one fish of any size daily bag limit.

TABLE 15: Area 2C transfer needs under CSP

AREA 2C PROJECTED IFQ POUNDS NEEDED TO MAINTAIN ONE FISH BAG LIMIT			
YEAR	NO. FISH	AVE. FISH SIZE (LB.)	YIELD (MLB.)
2009*	51,058	23.2	1.187
2010*	47,576	26.2	1.249
CSP MANAGEMENT	2 Year Average**		1.280
	Allocation @ 18.3%***		0.693
	Pounds Needed		**0.587**

* Last years under one-fish of any size regulation.

** Data Source: Logbooks and Meyer 2013a.

*** Based on Average combined catch limits 2008–2012 = 3.79 million pounds.

Estimated Transfer Needs in Area 3A

The year 2011 had the lowest Total Constant Exploitation Yield (TCEY), a measure of biomass, since the implementation of the Coastwide Assessment (see earlier description). Since then, there have been indications that the TCEY may be increasing (IPHC 2013b). For this reason, this analysis uses the CCL under this time of assumed lowest abundance (2011) to calculate Area 3A guided angler's potential lowest allocation under the CSP. The CCL would have been 15.021 million pounds with a corresponding 17.5% guided angler allocation or 2.629 million pounds. Table 16 uses a five-year average of guided harvest in Area 3A to estimate future demand. The five-year average is 3.414 million pounds. Subtracting 2.629 million pounds from the five-year average harvest yield of 3.414 million pounds, results in an estimated total transfer of **785,000 pounds** of quota that Area 3A would need to maintain a daily bag limit of two fish of any size under CSP management in a time of historic low abundance.

TABLE 16: Area 3A Transfer Needs under CSP

AREA 3A PROJECTED IFQ POUND NEEDS TO MAINTAIN TWO FISH BAG LIMIT			
YEAR	NO. FISH	AVE. FISH SIZE (LB.)	YIELD (MLB.)
2008	232,621	16.6	3.865
2009	192,032	15.8	3.044
2010	216,420	15.0	3.238
2011	219,821	15.0	3.308
2012	215,309	13.0	2.802
CSP MANAGEMENT		5 Year Average*	3.414
		Allocation @ 17.5%**	2.629
		Pounds Needed	0.785

*Data from Logbooks and Meyer 2013a.
**Based on lowest CEY since Coastwide Assessment (2011).
2011 combined catch limit = 15.021 million pounds.

Summary of Estimated Transfer Needs for Area 2C and Area 3A

For Area 2C to reach a one fish of any size bag limit during times of low abundance, the CATCH entity would need a one-time transfer of 587,000 pounds under CSP management.

For Area 3A to maintain a two halibut of an size bag limit during times of low abundance, the CATCH entity would need a one-time transfer of 785,000 pounds under CSP management.

TRANSFER AND USE RESTRICTIONS

Most catch share programs have rules or restrictions on how much quota share (IFQ in Alaska) participants can sell, buy, or lease. These rules usually fall under three broad categories: geographic trading limits, based on either biological or social boundaries; social trading limits, based on community or fleet characteristics; and administrative trading limits, based on the management of share trading (Bonzon et al. 2010, 64). The Alaska Halibut and Sablefish IFQ Program incorporates all three categories of restrictions, with a primary focus on social trading limits to protect the traditional makeup of the commercial fleet, prevent one entity from acquiring an excessive share of halibut fishing privileges, and to protect new entrants in the fishery.

While rules on transfer and use are intended to protect the objectives of catch share programs, they come with trade-offs. With unfettered trading, quota share naturally flows to the individuals or entities that value it the most. If too many rules prevent this from happening it may reduce economic efficiencies and value of the fleet. This is why NOAA's Catch Share Policy (2010) urges councils to "be mindful of imposing too many constraints on the transferability that would stifle the innovation and flexibility fishermen need for competitive cost-efficient business decision making." Similarly, the Environmental Defense Fund's *Catch Share Design Manual* states:

> Restricting transferability in any way will come with costs and will limit fleet-wide profitability. You should implement trading stipulations when they can address your clearly identified goal. Otherwise, decreasing flexibility unnecessarily limits participants' ability to make good business decisions (Bonzon et al. 2010, 65).

With this in mind, the following discussion considers how transfer and use restrictions might apply to a CATCH entity, and presents the option of relaxing these restrictions

Geographic Trading Limits

The IFQ Program only allows intra-area trading, meaning that shares specified for one regulatory area cannot be used in another regulatory area (with some exceptions for Area 4C and 4D). These geographic trading limits apply to all participants of the IFQ program, and would also apply to a CATCH entity.[8] Since the CATCH program is being proposed for Areas 2C and 3A only, the entity would only be allowed to purchase quota from these two areas.

8 The CATCH Charter Stakeholder Panel discussed the possibility of transferring quota shares/IFQ between Areas 2C and 3A, but this would not be possible given existing geographic trading limits.

Social Trading Limits

The IFQ program has vessel categories, blocks, quota share use caps, vessel use caps, leasing restrictions, and owner-on-board provisions, all intended to prevent consolidation of ownership, prevent windfall profits from transfers, protect the traditional makeup of the fishery, and maintain opportunities for new entrants.[9] If the NMFS approves the CATCH holding entity as a new participant in the IFQ program, each of these restrictions will have to be addressed in the context of this new participant.

Vessel Categories

The IFQ program has four vessel categories: freezer (catcher processor) category (A share); catcher vessels more than 60 feet (B share); catcher vessels 36–60 feet (C share); and catcher vessels 35 feet or less (D share). Each category has particular restrictions and rules on trading.

In the CQE program, transferability of halibut quota shares in Areas 2C and 3A are currently limited to B and C categories. Category A shares are not included because they are intended for use by catcher/processors. A shares are more expensive than catcher shares, less frequently available on the market, and less suitable for entry-level fishermen (Jane DiCosimo, personal communication November 1, 2013). This same restriction on A shares would apply to the CATCH entity.

CQEs also have prohibitions on D quota shares. Regulators implemented this restriction in response to concerns that an influx of CQEs would drive up the market for D shares, increase prices, and result in fewer available shares for new entrants and crew members that want to start their own businesses (NPFMC 2010). However, these concerns have proven to be unwarranted. CQEs have had difficulty funding the purchase of quota shares, and as a result, have purchased very little quota to date. CQEs are now seeking exemptions on the restriction to purchase D shares because these are the most available class of quota shares in rural communities, and purchase by CQEs would keep the quota shares in their local communities (NPFMC 2013).

Commercial operators have similarly expressed concerns that common pool buying could limit the availability of D shares for entry-level commercial fishermen (NPFMC 2007b). In response to these concerns, the CATCH Charter Stakeholder Panel suggested that a restriction on D shares might be appropriate for the CATCH program (see Appendix C). However, a more current and thorough analysis is needed to determine whether purchasing D shares would have as great a negative impact on new entrants as the original drafters of the IFQ program had anticipated. Although D shares were originally intended for new entrants, the fishery has changed since 1995. Recent economic conditions have resulted in high quota prices, and a decline in catch limits has meant less fish are landed per unit of quota share. As a result of the increasing capital investment needed to enter the fishery, D shares may no longer be economically feasible for many entry-level fishermen. Conversations with commercial fishermen reveal that it might make more sense for entry-level fishermen to work as crew on C class vessels (35ft to 60ft) in order to gain qualifying sea-time, and to then purchase C shares to fish on the same vessel under a financial arrangement with the owner of the vessel.

During NPFMC public testimony, many commercial fishermen testified that they entered the fishery at a time of high abundance, but now find themselves unable to earn enough revenue to make their quota share loan payments (NPFMC public testimony on the halibut CSP 2008, 2011, 2012). Reportedly, they have had to cover their losses in the halibut fishery by working in other fisheries or by taking on some other form of employment. Many of these fishermen entered the fishery buying D shares. The ability for the CATCH entity to purchase D shares may not only provide additional needed quota share for the CATCH entity, but may also help these fishermen exit the fishery with a higher investment recovery than might otherwise be available. D-class shareholders will benefit from the increased demand for their shares, and the speculative pricing pressures that may result as the program takes shape (NPFMC 2007b).

The CATCH program could be designed to provide additional opportunities for new entrants that are potentially more effective than a restriction on purchasing D shares. For example, if the CATCH entity has surplus quota share in a given year, provisions could allow new entrants to fish the unused allocation (cleanup fishery), or new entrants could be given the first opportunity to buy or lease the surplus quota share.

Another option presented by commercial fishery representatives is to have a cap on each category (in addition to a total sector cap) (see Appendix C). This would prevent the CATCH entity from purchasing too much from any one category. Although there would likely be a restriction on purchasing A shares, it is possible that the CATCH entity could purchase B, C and D shares, with limits set per category.

9 For more details on IFQ program restrictions, refer to the Background section of this report.

In terms of vessel size restrictions associated with A–D shares, the CATCH entity would probably follow the same rules that are already in place for the CQE program. CQEs are exempt from vessel size restrictions, meaning that their purchased quota can be fished on any size vessel regardless of the original class of quota share. If the quota share is later transferred from the CQE to an individual holder, it reverts to its original category. Similarly, under the CATCH program, anglers would fish quota share on any length vessel, but if the quota share is later leased or sold back to the commercial sector, it would revert to its original category

Blocks

The NPFMC originally tagged quota issued to small operators (less than 20,000 pounds of IFQ) as "blocks," which have to be sold as a unit. They designed this program feature to help ensure that the smallest, most affordable quota shares remain available for smaller operators. An individual IFQ holder can currently hold three blocks per management area, and an individual that holds any amount of unblocked quota in a management area is only permitted to hold one quota share block in that area. A CQE can hold 10 blocks per management area, and CQEs are prohibited from purchasing blocked quota share for certain areas below a minimum size.[10] In the CQE program, block restrictions are retained if the community transfers quota share.

The NPFMC would consider similar block restrictions for a CATCH entity. The entity would likely be able to purchase both blocked and unblocked quota, but there may be a limit on how many blocks the entity can purchase, and restrictions on blocked quota below a minimum size.

The CQE program can technically have up to 45 CQEs representing its 45 eligible communities. Each CQE is allowed up to 10 blocks. Therefore, CQEs could theoretically hold up to 450 blocks if the maximum number of CQEs are active (however, this is very unlikely given current participation). The CATCH program, on the other hand, would only have one or two entities, representing all guided anglers in Areas 2C and 3A. Therefore, it makes sense for each CATCH entity to have a much higher cap on the number of blocks permitted per management area in comparison to a CQE.

10 The NPFMC now has a preferred alternative for the amendment that will allow CQEs to purchase any size small blocks in class B and C for Area 2C (NPFMC 2013).

As shown in table 17, the majority of quota shares in Area 2C are blocked (71% in 2013). As shown in tables 18 and 19, most of the blocked shares in both Area 2C and Area 3A are category C shares (around 60%). If the restrictions on blocks are too severe, then it will be very challenging for the CATCH program to meet its program objectives.

TABLE 17: Blocked and Unblocked Halibut Quota Share by Vessel Category for the 2013 Quota Share Pool (Areas 2C and 3A)

AREA	TOTAL QS	UNBLOCKED QS	BLOCKED QS	NO. BLOCKS
2C	59,536,185	29%	71%	1,435
3A	184,893,008	65%	35%	1,626

TABLE 18: Number of Blocks and Quota Share by Category

AREA	A		B		C		D	
2C	18	629,796	40	1,402,160	864	31,245,934	513	8,884,225
3A	20	770,263	119	6,962,200	966	46,147,450	521	11,461,896

TABLE 19: Proportion of Total Halibut Quota Share Blocks by Vessel Category, 2013 (Areas 2C and 3A)

	% OF TOTAL QS BLOCKS BY CATEGORY			
AREA	A	B	C	D
2C	1%	3%	60%	36%
3A	1%	7%	59%	32%

Source: NPFMC 2013

Quota Share Use Caps

Quota share use caps limit how much quota each individual, entity, or vessel can hold, and are intended to prevent consolidation of quota shares in the hands of a few individuals or entities. While the CATCH entity would be one large entity, it would represent countless individual anglers, and would benefit all charter operators. Nonetheless, during meetings between CATCH and commercial stakeholders, they raised concerns that a common pool entity would buy too much quota, thereby pushing out small, traditional fishermen and new entrants (see Stakeholder Feedback in Appendix C). Quota share use caps are one way of controlling this, and could take different forms:

Total Sector Cap

A total sector cap would hold the guided angler allocation in Areas 2C and 3A at an established maximum level per area (regulatory allocation plus purchased quota shares). In the CQE program, all CQEs are collectively capped at 21% of the total commercial quota share in each regulatory area.

Table 20 lists different options for arriving at a total sector cap (see Appendix D for details). Based on the options presented here, a total sector cap in Area 2C could reasonably fall anywhere from 2.063 million pounds to 2.367 million pounds or up to 39% of the combined commercial and charter catch limits; and in Area 3A from 4.689 million pounds to 4.775 million pounds or up to 27% of the combined commercial and charter catch limits. This is similar to the options presented in the NPFMC's analysis of a common charter operator pool, which proposed four options for a total sector cap including 10%, 15%, 20%, and 25% of the combined commercial and charter catch limits (NPFMC 2007b). It should be noted, that options one and two are fixed caps, which may be excessive in times of low abundance and inequitable in times of high abundance. Option three fluctuates with abundance, and considers adequate allocations in times of low abundance.

TABLE 20: Options for Arriving at a Total Sector Cap

	AREA 2C	AREA 3A
OPTION ONE		
Highest historic harvest by guided anglers measured in pounds of fish.	2.063 Mlb. (2006)	4.689 Mlb. (2006)
OPTION TWO		
Highest historic harvest potential using the highest angler effort in the past, multiplied by an average weight of fish.	2.367 Mlb.	4.775 Mlb.
OPTION THREE		
Total Caps based on a percentage of CSP combined catch limits		

AREA 2C TOTAL CAP BASED ON CHARTER HARVEST IN 2010 (LAST YEAR AREA 2C MANAGED UNDER A ONE FISH RULE) AS A PERCENTAGE OF CSP COMBINED CATCH LIMITS (CCL)

YEAR	TOTAL CEY	OTHER REMOVALS	COMBINED CATCH LIMIT	CSP CHARTER ALLOCATION	2010 CHARTER HARVEST* (MLB.)	2010 CHARTER % OF CCL
2010	5.020	1.842	3.178	18.3%	1.249	**39%**

Source: Logbook Data, Meyer Oct. 2013

AREA 3A TOTAL CAP AS A PERCENTAGE OF CCL AT A LOW ABUNDANCE LEVEL TO MAINTAIN A TWO FISH OF ANY SIZE BAG LIMIT

YEAR	2014 PROJECTED YIELD AND TOTAL REMOVALS* (MLB.)	2014 BLUE LINE GUIDED ALLOCATION (MLB.)	2014 COMBINED CATCH LIMITS (MLB.)	CSP CHARTER ALLOCATION (%)	PROJECTED HARVEST AS A PERCENTAGE OF 2014 CCL
2014	2.543	1.78	9.43	18.90%	**27%**

Source: Meyers Oct. 2013b, CMIC Handout.

Note: 2014 will be the first time Area 3A will face a reduction in bag limits. At the time of this report, only preliminary IPHC data was available for this analysis.

TABLE 21: Options for Estimating an Annual Cap

	AREA 2C RESULTS	AREA 3A RESULTS
Option 1: 30–50% annual cap on the historical average of quota share transfers (2008–2012)	With a restriction on D shares: 48,000 to 80,000 pounds could be transferred each year. 7–12 years to reach transfer goals. With no restriction on D shares: 65,000 to 108,000 pounds could be transferred each year. 5–9 years to reach transfer goals.	With a restriction on D shares: 116,000 to 194,000 pounds could be transferred each year. 4–7 years to reach transfer goals. With no restriction on D shares: 131,000 to 218,000 pounds each year. 4–6 years to reach transfer goals.
Option 2: Annual caps of 1.5%, 2% and 3% of total commercial quota shares based on the average from 2011 to 2013 (recent years of low abundance).	56,850 to 113,700 pounds could be transferred each year. 5.2 to 10.3 years to reach transfer goals under CSP. 35–71% of annual B and C transfers. 26–53% of annual B,C and D transfers.	105,353–316,059 pounds could be transferred each year. 2.5 to 7.5 years to reach transfer goals under CSP. 27–81% of annual B and C transfers. 24–72% of annual B,C and D transfers.

Annual Cap

The amount of quota share that the guided angler holding entity purchases at one time may temporarily distort a mature market that has developed for more than fifteen years. Annual caps for each regulatory area could limit the holding entity's impact on quota shares prices.[11] Annual caps could be calculated as a percentage of historical quota share transfers (e.g., 30% and 50%), as was done in the NPFMC's 2007 analysis of a common pool management system. Annual caps could also be calculated as a percentage of total available commercial IFQ (e.g., 0.5%, 1.0%, and 1.5% of total annual IFQ). These two options for arriving at an annual cap for a CATCH holding entity are summarized in Table 21 above, and are described in more detail in Appendix E. The estimates take into account differences with or without restrictions on D shares, and the number of years it would take to reach the CATCH objectives for each regulatory area under each annual cap.

Annual caps could be spread out over several years until the total cap is achieved, as with the CQE program. CQE cumulative use caps started at 3% in the first year (2004), and increased by 3% per year until they reached a maximum of 21% of all the halibut and sablefish quota share in each regulatory area (i.e., a total cap on all CQEs). A gradual increase in the annual cap would help to maintain stability in the quota share market, but may also slow the potential for the CATCH program to reach its objectives.

11 For a detailed discussion on this topic, refer to the Research Group's economic analysis of the CATCH concept (Davis, Sylvia and Cusack 2013).

Cumulative Use Cap

In the CQE program, "cumulative use caps" refer to the amount of quota share that can be held and used by all CQEs in one regulatory area. Since the CATCH program will only have one entity per regulatory area, this type-of cumulative cap does not apply. However, as mentioned above, the CATCH program may benefit from a gradual increase in the total use cap, as was done with CQE cumulative use caps.

Vessel Use Cap

The IFQ program has vessel use caps based on the size of the total allowable catch. The NPFMC implemented these caps to ensure the continued participation of a minimum number of vessels. In the CATCH program, guided anglers would own the quota share, not vessel owners. As a result, vessel use caps would not apply to the CATCH program.

Owner-on-Board Provision

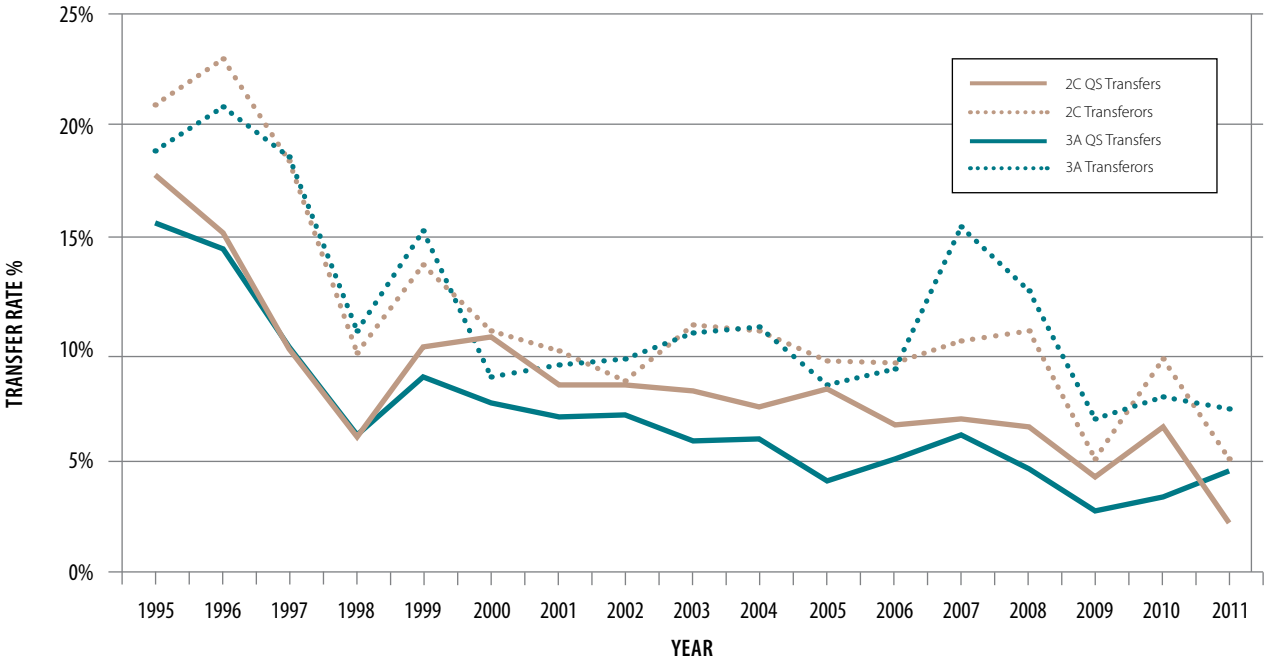
A primary feature of the IFQ program is the "owner-on-board" provision, which requires owners to be aboard the vessel at all times during the fishing trip and to be present during the landing (with some grandfather provisions allowing for hired skippers to be on board). The purpose of this provision was to ensure that absentee owners or speculators would not accumulate quota shares. In the proposed CATCH program, the guided angler would be a collective participant of the IFQ program. Since the angler will always be fishing on the vessel, the owner-on-board provision is maintained. However, if the CATCH program permits two-way leasing, then this may go against the owner-on-board provision (see discussion on leasing below).

Administratively-based Limitations

Bonzon et al. (2010, 65) describe administratively-based limitations used in catch share programs, such as limits on trading to facilitate catch accounting, or the use of "transition periods," such as limiting permanent transferability or prohibiting trading for a period of time. Since this type of program has never been tried or tested, the NPFMC may choose to implement similar transition periods. For example, they may decide to slowly relax restrictions over time (such as the cumulative use caps in the CQE program), or they may choose to relax rules for a short period of time to analyze the impacts on local communities.

The Research Group (economic analysts for CATCH) presented the option of implementing a CATCH pilot project in limited geographic areas with a limited number of charter fleet vessels. This would allow industry to test how the quota share market works, and evaluate different financing structures and angler responses (Davis, Sylvia and Cusack 2013). However, as outlined later in the study, a pilot study for this project could be complicated. The guided angler allocation would have to be subdivided, and the IPHC regulatory areas would have to be divided into sub-regions. This would be a lengthy and involved process. There would be the problem of what to do with the acquired quota share if the program fails. Since sub-regions compete for customers among themselves, anglers may be diverted to non-pilot sub-regions that do not have the same fees. As Davis, Sylvia and Cusack (2013, E-2) conclude, "the complications for having an innocuous pilot program design may preclude its approach."

FIGURE 10: Halibut Permanent Quota Share Transfer and Transferor Rates by IPHC Area in 1995 to 2011



Notes:
Rates are calculated based on the year-end remaining quota shares and holders. The rates reflect total units transferred even if a particular unit is transferred more than once, therefore the data is not necessarily unique quota shares units or persons. Halibut quota shares units can be transferred in small amounts by persons who remain in the fishery and some halibut quota shares units can be leased.
The rate bump-up in 2007 was due to the regulation change allowing medical transfers.

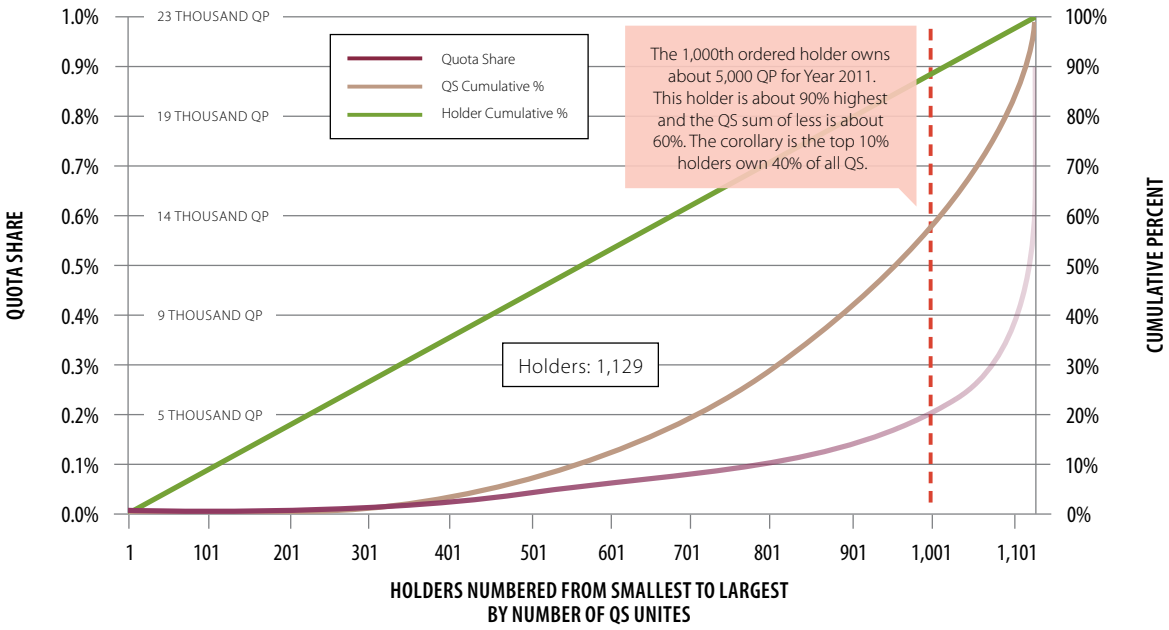
Source: Davis, Sylvia and Cusack 2013, V-10 and RAM 2012

TEMPORARY RELAXATION OF RESTRICTIONS

Quota shares, while technically being revocable fishing rights to a public trust fishery, have been treated over-time as ownership rights, which banks and financial institutions recognize as assets capable of being pledged as collateral. As discussed earlier, catch-share programs are designed to increase efficiency through transferability of quota shares from one holder to another. This allows holders to acquire enough quota shares to make their operations sufficient to cover variable and fixed costs. In the Alaska IFQ program, transfer and use restrictions were designed to achieve social goals (protect entry-level access to commercial fishing, prevent consolidation, and keep the small fleet composition of the fishery intact).

Under the restrictive conditions of the IFQ Program, the guided sector may not find sufficient quota to meet their minimum CATCH objectives in times of low abundance. Quota shares transfer rates have been consistently decreasing since the halibut IFQ program was implemented, and now hover around 2.5% in both Area 2C and 3A (Figure 10). According to Davis, Sylvia and Cusack (2013), the amount needed for guided anglers to ensure a "one fish, any size" in Area 2C would greatly exceed recent market trading amounts of individual IFQ owners, even if transactions were spread over several years. Under current IFQ restrictions, there may also be situations in which commercial quota holders are unable to exit the fishery for retirement or reinvestment into other fisheries due to the lack of a qualified buyer.

FIGURE 11: Quota Share by Order of Holders for Area 2C in 2011



Source: Davis, Sylvia and Cusack 2013; NMFS RAM (November 13–14, 2012).

Davis, Sylvia and Cusack (2013) recommend a one-time waiver or general waiver on transfer and use restrictions.[12] The NPFMC would have to decide on waiving constraints for a certain period of time, or permanently, to allow the CATCH entity to purchase quota shares in an unrestricted (or less restricted) market. If temporary, after a designated period of time, the waiver would end, and either the CATCH entity would start purchasing under constraints, or the CATCH entity would exit the program.

A relaxation of rules has the potential to benefit both the guided sector and the commercial sector by maximizing fishing opportunity and economic growth in local communities in a timely and cost efficient manner. It would give the CATCH entity a greater chance at finding sufficient quota to fulfill its bag limit objectives—something that may be difficult to accomplish under current restrictions. It would also benefit commercial quota holders who are interested in retiring out of the fishery, but cannot find willing, qualified, buyers.

There will be concerns that a waiver on restrictions for the CATCH entity would result in consolidation of quota shares and a disruption to the traditional fleet composition. However, an analysis of quota holders in Area 2C shows that 10% hold 40% of all quota shares (Figure 11). This suggests that the CATCH entity could potentially purchase a sufficient amount of quota share from just a small percentage of shareholders, thereby only minimally reducing the number of vessels participating in the fishery. The NPFMC will need to explore this further to see if the threat of consolidation under relaxed rules is substantiated.

12 Refer to Davis, Sylvia and Cusack (2013) for a discussion on the impacts of three transfer mechanisms: a) purchase consistent with existing transfer rules; b) one-time waiver or general waiver of rules; c) quota bank in bycatch fisheries.

There may also be concerns with the potential for market distortions if the common pool enters the market and attempts to purchase all of its quota share needs in a short time period. While a lifting of transfer constraints may increase quota share prices in the short term, the limited availability of quota share due to ownership constraints and trading rules has reduced the average quota share values (Davis, Sylvia and Cusack 2013). By relaxing restrictions, the NMFS would increase the value of quota held by current commercial operators and the proposed CATCH entity. Davis, Sylvia and Cusack (2013), explore this in terms of "asset value" and "asset thinking."

In fisheries, asset value can be associated with vessels and gear, processing equipment, fishing permits, and fishing quota (IFQ). Since IFQ holders hold a certain amount of a resource, and this resource can be bought or leased by other prospective holders, this is a value that is recognized as an asset. According to the economists, "asset thinking" requires that those responsible for designing asset institutions, and then purchasing and managing assets (e.g., quota shares), recognize they own a valuable market asset, which must be designed and managed thoughtfully (Davis, Sylvia and Cusack 2013). As stated in their report:

> Intelligent and innovative institutions and organization[s] that provide incentives to increase efficiency in TAC use while decreasing management and transactions costs will increase [the asset value of CHP's and quota share]. These institutions would include open and transparent purchases, special auctions that increase available quota at the lowest possible price, freedom and flexibility to purchase quota in response to changing needs and market conditions, flexibility to lease or sell quota, addressing the problem of excess fishing permits, and finding strategies that also address social objectives in the commercial, recreational, and subsistence sectors. Marginal benefits to the guided angler sector will increase over time, allowing the sector to generate benefits from market purchases. Overall asset values will increase for both the commercial and guided angler sectors. Higher asset values will allow each sector to improve their business operations and underwrite capital investments. (Davis, Sylvia and Cusack 2013, V–6)[13]

In terms of "asset thinking", the NPFMC should consider how a relaxation of rules will impact the long-term asset value for both the recreational and commercial fleets. A CATCH entity, as a potentially well-funded participant, will increase quota share asset values if the purchase of those assets brings greater value or benefits to the guided angler sector relative to the commercial sector, in an unrestricted market. As the economists argue, by designing financing mechanisms and management programs to improve asset values, overall benefits will increase for both sectors. These higher asset values will allow each sector to improve their business operations and underwrite capital investments (Davis, Sylvia and Cusack 2013 IV-1).

Restrictions on quota transfers are key elements of any catch share program. The ability to be flexible in their application under changing conditions is just as important. Such may be the case in these times of low resource abundance when a temporary relaxation of restrictions could benefit all participants. The NPFMC will have to provide the definitive analysis of how this will impact the integrity of the IFQ Program

LEASING

It may make sense to include a limited, two-way leasing arrangement between the CATCH entity and commercial quota holders, including CQEs. Leasing would allow flexibility in adjusting to short term fluctuations in abundance for both commercial and recreational sectors. It would provide a mechanism

13 Refer to p.V-2 of Davis, Sylvia and Cusack's (2013) report for a description of reverse auctions and other methods for purchasing quota share under a one-time waiver or general waiver.

to ensure guided angler harvest does not exceed its allocation due to uncertainties in angler demand. For instance, if near the end of the sport fishing season, the guided angler allocation is projected to be insufficient, pre-arranged IFQ leases could be executed to cover this deficiency. Or, if towards the end of the sport fishing season, guided angler harvest is projected to be significantly lower than their allocation, a portion of this surplus allocation could be leased to the commercial sector for harvest, as their season usually ends a month later. As stated by Davis, Sylvia and Cusack (2013, V–7,8), "the ability to lease [quota pounds] provides a powerful tool to meet business needs and even-out the flow of required quota over short periods of time… Prohibitions on leasing or inflexible leasing rules reduce the value of the underlying asset, and limit strategies that best meet the needs of both the recreational and commercial fishing sectors."

In economic terms, an open and unlimited leasing arrangement is the preferred option. However, there may be some opposition to leasing, since it goes against the owner-on-board provision of the IFQ program. This argument has been raised by the charter sector in opposition to the GAF program.[14] There may also be concerns from both sectors that a leasing arrangement will lead to "absentee landlords," in which the common pool or commercial fishermen buy more quota than they need so that they can lease it back to the other sector at a profit. One way to address this concern, is to have a limited, or restricted, leasing arrangement.

In the NPFMC's (2007b) analysis of common pool reallocation between sectors, they looked at different limited leasing options. One option they presented is for the common pool to lease 0–15% of its holdings back to the commercial sector. Another option would allow commercial fishermen to lease up to 10% of their annual IFQs for use by the common pool. This is similar to the proposed GAF provision of the CSP program, in which IFQ holders in Area 2C would be limited to transferring up to 1,500 lb. or 10%, whichever is greater, of their initially issued halibut IFQ for use as GAF; and in Area 3A, IFQ holders could transfer up to 1,500 lb. or 15%, whichever is greater, of their initially issued annual halibut IFQ for use as GAF.[15] The major difference between the GAF program leasing arrangements and the CATCH leasing arrangements would be that GAF transfers are between individual commercial fishermen and individual charter operators, while the CATCH leasing arrangement would be between individual commercial fishermen and an entity that represents the entire guided angler sector. Commercial fishermen would still receive the benefits of leasing as in the GAF program, but the charter concerns with GAF would not be relevant (e.g., concerns that GAF favors larger charter operators versus smaller operators).

The NPFMC report (2007b, 82) examines the trade-offs of allowing unlimited leasing, limited leasing, and no leasing in terms of the opportunity cost of holding extra quota share. For example, if there is no limit on leasing, the common pool manager will not be as concerned with having extra quota share since they could always be leased back to the commercial sector. If there is limited leasing, they would be concerned with purchasing too much quota share, since there would be no way to generate revenue from excess quota shares, and they would likely be making financial payments on them. With no leasing, in the case of a shortfall, the common pool manager would need to choose between purchasing halibut near the end of the season at higher prices, or holding more quota share than would likely be needed to avoid exceeding allocation, and to avoid entering the quota share market at the end of the season.

The NPFMC will have to balance these different trade-offs and concerns with the economic benefits of unlimited leasing. Given the reduction in transfer rates in recent years, and the amount of quota share the CATCH program needs to reach its objectives, it seems unlikely that the "absentee landlord" scenario will pose a major problem in the foreseeable future, at least from the charter side. Limited or no leasing, however, may present unnecessary barriers to economic efficiency.

HOW TO DEAL WITH SURPLUS IFQ AND QUOTA SHARES

Projecting angler demand is not an exact science. For this reason, the CATCH entity should acquire sufficient quota shares to allow for a level of uncertainty in these projections. If the current trend continues until CATCH implementation, the CATCH entity would likely be purchasing quota shares during times of low abundance, which could eventually equate to more fish per quota share unit in times of higher abundance. During this time of quota share adjustment, there may be scenarios with surplus IFQ.[16] The following are some options for managing a surplus of IFQ and quota shares.

14 Refer to public testimony for NPFMC Catch Sharing Plan 2008, 2011, 2012

15 Catch Sharing Plan for Guided Sport and Commercial Fisheries in Alaska. Final rule. Federal Register Vol.78, No.239 (December 12, 2013) (to be codified at 50 CFR Part 679).

16 Charter sector stakeholders polled in outreach meetings agreed that quota purchases should end once a two fish daily bag limit of any size is achieved and ensured in times of low abundance.

Do Nothing or Status Quo

The "do nothing" alternative is the simplest way to address a surplus of allocation brought about by a growth in exploitable biomass. Guided angler harvest would be managed within allocation and the unharvested biomass would remain in the water for the following year, to be divided among user groups according to whatever annual allocation scheme is in place. However, this does not support the efforts for attaining optimum yield.

Allow Commercial Fishermen to Harvest Surplus Allocation

When surplus IFQ is determined, NMFS Restricted Access Management (RAM) could announce a pro-rata increase in quota share harvest allowance to all quota shares holders for that season. While program complexity may be high, this option has the potential to establish a degree of good will between sectors. Another method is to reserve this surplus for small operators or new entrants to fish free of charge.

Lease Surplus Allocation

Assuming harvest accounting is accurate and near real time, surplus allocation could be leased to the commercial sector in a cleanup season (see leasing discussion above). The majority of guided angler harvest occurs between the middle of May and the middle of September. If the guided angler season were closed on or around the middle of September, sufficient time exists for commercial fishermen to harvest the remaining guided allocation by leasing the unharvested IFQ from the CATCH entity.

The advantages would be supplemental income for the holding entity for annual expenses, and financial benefits to willing commercial fishermen. Disadvantages would include the additional complexity and cost in implementing a leasing program. Potentially large numbers of temporary quota shares transfers would have to be tracked between sectors with the potential increased cost of enforcement.

Rollover Surplus Allocation

Rolling over a portion of unharvested allocation to the following year is an option that already exists in the commercial IFQ program. Individual quota shares holders are allowed to bank up to 10% of their final trip's IFQ and harvest it the following year.[17] If this happens to be their only trip of the year, this could amount to 10% of their total annual IFQ. Banking of surplus IFQ could, theoretically, result in a greater combined guided angler allocation the following year, possibly allowing an increase in harvest. Banking of significant amounts of IFQ adds complexity, especially if it were to accrue over several consecutive years (see further discussion on rollover allowances in the Accountability section).

ADMINISTRATIVE ISSUES

Separate Management of Regulatory Allocation and Purchased Quota Share

At present, the guided sport sector fishes under an annual regulatory allocation. Once the CATCH entity transfers commercial quota share to the guided sport sector, it will be fishing under two different types of allocation: its traditional regulatory allocation, and the quota share pool. There is the question of how the two allocations will be managed. Will the quota share pool be absorbed into the regulatory allocation and managed in the same way? Will it be held and managed separately from the regulatory allocation? Or, is it possible that the regulatory allocation could be converted to quota share and absorbed into the IFQ program?

After some analysis, CATCH researchers have concluded that there is really only one option for the NPFMC, which is to manage the two pools separately. The CATCH program aims for a two-way transfer of quota share. For this reason, the quota share would always have to retain its original designation as quota share. In addition, the IFQ program functions on a fixed amount of quota share units. Any permanent increase or decrease in those units would greatly impact the value of existing quota shares. If guided angler allocation were converted to quota shares it would water down all IFQ participants' ownership.

The guided sport sector would be buying into the IFQ program. Any purchased quota share would be used along with regulatory allocations strictly for the purpose of determining the total allowable catch for guided anglers. If quota shares were later returned to commercial IFQ holders, this would be limited to the purchased quota share (not the guided angler regulatory allocation). Under this scenario, the guided sector would likely fish the annual regulatory allocation first, and once it is exhausted, it would start fishing under its IFQ allocation. Just as with the GAF program, different databases and accountability would need to be in place for the purchased quota shares (NPFMC 2008).

17 50 CFR Part 679.40. Sablefish and halibut QS. Subpart D—Individual Fishing Quota Management Measures.

Cost Recovery

The Magnuson-Stevens Act requires the Secretary of Commerce to collect a fee to recover the costs directly related to the management and enforcement of IFQ programs (NOAA 2002). Each year, IFQ participants are required to pay around 2% of the total ex-vessel value of halibut and sablefish harvested (NMFS Alaska 2012b). However, cost recovery is not authorized on non-commercial harvests. It is therefore assumed that the CATCH entity would not be required to pay a cost recovery fee (Rachel Baker, NOAA, personal communication March 2013). The costs would likely be minimal, like in the GAF program, and would be absorbed by the commercial fishery. CATCH entity administrative costs would be included in the funding of quota share purchasing.

Market-Based Transfer Systems

The commercial IFQ program already has an infrastructure in place for transferring quota shares, which would extend to a CATCH entity. Currently, the RAM Division of NMFS monitors all sales, transfers, and leases of quota share and provides daily listings of all quota holders and their specific holdings on its website. Interested buyers or sellers can go through informal networks (phone, email, in-person), trade journal advertisements, or through brokers authorized to facilitate the transfer of quota shares (for a 2–3% broker's fee).

Once a transfer is agreed upon, the buyer and seller must fill out, sign and independently notarize a quota share transfer application form. The application form requests the price, volume, and purpose of the quota transfer. RAM also requires a sales contract. This information is sent in hard copy to the RAM office, which reviews the information for completeness and compliance with the regulations that govern the IFQ Program (e.g., excessive share caps, quota blocks). Both manual and computer checks are done to ensure compliance. The NMFS' RAM office then issues the quota share to the buyer. Overall, it takes approximately 4–8 days to complete the transaction (Cap Log Group 2012; Tracy Buck, RAM Program Administrator, personal communication June 10, 2013).

Under the CATCH program, the holding entity would hire a quota manager to keep track of available quota shares, establish relationships with fishermen interested in selling, and work with brokers and the RAM office to finalize any transfers. The actual transfer process would likely operate the same as the commercial IFQ program, with the exception of the approval process, which would have to consider different criteria (e.g., use cap limits, numbers of blocks). Since there would only be one buyer (the holding entity), it would not likely add significant work for RAM to process these transfers.

ALTERNATIVE TRANSFER MECHANISMS

Buyout of Quota Share

The concept of a "buyout" refers to buying out numbers of vessels, licenses, permits, and/or gear to reduce fishing effort and overcapacity, compensate participants who wish to exit the fishery, and improve profitability for those remaining in the fishery. The Magnuson-Stevens Act authorizes NMFS to undertake buyouts that are consistent with its goals and fishery management plans, and allows NMFS to obtain funding for buyouts. Often, the remaining participants of the fishery initiate and finance these buyouts with loans from the federal government. There have also been cases where private entities, such as the Nature Conservancy, have funded private buyout programs using private grant funds (Manta Consulting 2011).

It is possible that a buyout could take place under the guided angler pool program, but instead of buying vessels, licenses, and/or gear, the program would buy quota shares. Although this would not be a traditional buyback program to reduce the fleet or licenses, it would have the same effect of reducing commercial halibut fleet size. As a result, this could simultaneously accomplish the goals of the guided angler recreational sector while also improving the economic health and viability of the commercial fishing sector by reducing competition, increasing profitability, and reducing bycatch. This would be the first cross-sector buyout ever attempted in the United States. The buyout would need to be voluntary in nature, possibly through a reverse auction in which IFQ participants would bid on available funds offered by the program.

While a buyout program is certainly possible, the road to implementation would be cumbersome. To implement a buyout program, several steps would need to be taken:

- Sources of funding would have to be identified and appropriated;
- A federal loan for a buyout would require either the application of the Magnuson-Stevens Act buyout framework or specific Congressional language to authorize and appropriate the loan authority (Charter Halibut Stakeholder Committee 2007);
- Industry would have to develop an industry business plan (as required in the Magnuson-Stevens Act), present it to the NPFMC and NMFS, and then submit it to federal special legislation;
- The holding entity would have to develop a means to repay a buyout loan, which the lender would have to approve.

The NPFMC (2007b, 58–60) analyzed this concept in more detail, and found that it would require a significant amount of work, would need extensive support and cooperation between the charter sector and commercial sector, and as an untried and untested proposal, could take a considerable time to execute.

Pro Rata Reduction

Quota shares are not absolute rights, but privileges, which can be changed at any time. Based on this premise, the NPFMC analyzed the possibility of a "pro rata" reduction, with compensation, as a way for the charter sector to increase its allocation (NPFMC 2007b). Under such a program, the charter sector would purchase a portion of the total commercial pool from which IFQs are annually calculated. This would result in a reduction in the total size of the commercial pool, so that the number of quota shares held by an individual would not be reduced, but the resulting poundage would be reduced (similar to how a decrease in halibut abundance results in a decrease in poundage per individual). The pro rata reduction would be treated like an annual lease, in which quota holders would be compensated each year for the amount of halibut they transfer to the charter sector.[18]

Commercial IFQ holders were strongly opposed to this suggestion. They stated that they do not want to be "forced" to reduce their IFQ amount, and instead prefer a system between a willing seller and a willing buyer—as with the CATCH program.

18 For a detailed discussion on a pro rata reduction, refer to the NPFMC 2007b report

RECOMMENDATIONS FOR QUOTA TRANSFER MECHANISM

This section has presented different mechanisms for transferring quota between the commercial IFQ fishery and the guided angler sector of the recreational fishery. This included a discussion of transfer goals and needs, transfer and use restrictions, a temporary relaxation of restrictions, leasing, what to do with surplus quota share, administrative issues, and alternative transfer mechanisms.

The complexity of evaluating the intricacies of a transfer mechanism cannot be overstated. A transfer mechanism design must take into consideration the many trade-offs involved in balancing the economic and social benefits that reallocation of quota shares may have on each sector. CATCH recommends the following:

- Quota share should be fully transferable (two-way) across sectors, and quota should retain its original commercial designation.
- All quota share transfers should be between a willing seller and a willing buyer.
- The NPFMC should allow limited, two-way, leasing of quota share between sectors. This would allow flexibility in adjusting to short-term fluctuations in abundance for both commercial and recreational sectors, and would help both sectors improve efficiencies and profitability.
- In defining the quota transfer mechanisms for the CATCH entity, every effort should be made to allow transfers to occur in the least restrictive environment as possible. This would help ensure quota shares retain their asset values for both the commercial and recreational fisheries.
- When considering transfer and use restrictions, a thorough analysis should be conducted to determine whether a restriction on D shares would have as great a negative impact on new entrants as the original drafters of the IFQ program had anticipated.
- An additional analysis should examine whether there is, in fact, a great threat of consolidation if the CATCH entity were to purchase under relaxed rules.
- A limited rollover of harvest balance, positive or negative, should be considered to allow for flexibility in managing a constantly changing level of recreational fishery participation.

Accountability

In fisheries management, the term "accountability" is used both in reference to: (1) a fisherman or fishery's responsibility to keep harvest within allocation, including all sources of removals, and; (2) accurate and timely accounting of the harvest (how much was caught, when, and where). The two are interrelated. Fishermen and managers need timely and accurate reporting of harvest to know when they have met or exceeded catch limits. Accountability is key to effective fisheries management, and is critical to the success of catch share programs.

The reauthorized Magnuson-Stevens Act of 2006 calls to end and prevent overfishing through the use of annual catch limits and accountability measures. Accountability measures (i.e., "harvest measures" or "management measures") are the tools fishery managers use to prevent harvest from exceeding annual catch limits, and if exceeded, to mitigate or correct the overage. The Magnuson-Stevens Act also calls for conservation and management measures to achieve "optimum yield," which is defined as the amount of fish that "will provide the greatest overall benefit to the Nation" while maintaining sustainable populations. In other words, fishery managers must seek a careful balance between catching too many fish and catching too few fish, to reduce negative ecological, social, and economic impacts.

This section looks at accountability and the Alaska guided sport (charter) halibut sector, starting with a discussion on the challenges faced by managers and the charter sector to date. It then explores creative ways to keep the sector from exceeding its catch limit under the CATCH program, and describes different options for data collection and reporting.

NEW, SHORTENED RULEMAKING PROCESS

In 2012, the NPFMC used a new approach in recommending changes in harvest measures, in which they specified annual management measures prior to the upcoming fishing season based on projected harvests and charter GHLs. The NPFMC created the Charter Management Implementation Committee consisting of charter operators throughout the state. The approach works with the following timeline:

October—ADF&G provides the Committee with estimates of the current year's guided angler harvest and a projection of next year's harvest. The Committee requests that the ADF&G analyze a range of harvest measures for potential use in the following year.

December—The Committee selects management measures, based on the ADF&G's analysis, that are projected to keep guided angler harvest within allocation and with the least negative impact to charter businesses. The NPFMC adopts or modifies these recommendations based on input from the Advisory Panel and public testimony.

ACCOUNTABILITY CHALLENGES WITH ALASKA'S CHARTER SECTOR

Accountability is a challenge for all recreational fisheries, including the Alaska halibut charter sector. As described earlier in this report, after the NPFMC implemented the Guideline Harvest Level (GHL) program, Area 2C exceeded the GHL every year from 2004 to 2010. Regulators responded by implementing stricter and stricter controls, which peaked in 2011 when Area 2C anglers were restricted to one halibut per day equal to or less than 37 inches in length. While this kept guided angler harvest within the GHL, the regulation significantly decreased demand for guide services and 51% of the guided allocation went unharvested. Similarly in 2012, 35% of the guided allocation went unharvested. While managers do not want a fishery to exceed allocation, their goal is to help fishermen successfully prosecute the fishery up to the total allowable catch. If a fishery is managed too severely, and too much fish is left in the water, this can have devastating economic impacts, constraining the goal of providing the greatest overall benefit to the Nation. There are likely a number of reasons why these overages and underages occurred in Area 2C.

Uncertainty in Harvest Projections

Regulators decide on accountability measures largely based on harvest projections. Yet, it is very difficult to accurately predict angler demand (Meyer 2012b). Harvest projection models cannot adequately account for extrinsic factors such as changing national economic trends, variability in the abundance and composition of the halibut stock, personal preferences, and responses to changing regulations. Angler numbers, the variation of regional fish sizes, the selective behavior of anglers responding to regulation changes and even the weather all contribute to the uncertainty in estimating future guided angler harvest. Therefore, flexibility in recreational management is necessary when trying to achieve an annual catch limit based in specific pounds.

Accountability Tools and a "Soft" Harvest Cap

To keep the guided sport fishery within allocation, managers use accountability measures such as bag limits and size limits and apply these to estimates of future guided angler demand. While these tools are designed to reduce overall harvest, their inherent uncertainties do not hold a fishery to an exact total allowable catch. Even total compliance with these types of controls cannot ensure the total allowable catch limit will be reached or exceeded. Since the GHL and the CSP are "soft" harvest caps, this means that if the catch limits are exceeded, the fishery does not shut down. Instead, the NPFMC selects more conservative measures the following year and overages are accounted for in the IPHC's stock assessment model. As a result, although guided anglers comply with accountability measures, they may still exceed catch limits.

Lengthy Rulemaking Process

Prior to 2012, changes to harvest measures were implemented through a lengthy NMFS rule making process after anglers exceeded the GHL. This took from one to several years to accomplish a rule change (Ginter 2006). This meant that when halibut stocks declined or increased rapidly, regulations for the guided recreational angler could not respond quickly enough to these changes. In 2012, the NPFMC introduced a new approach, which shortens the rulemaking process (see sidebar).

January—Recommendations proceed to the annual IPHC meeting, where the IPHC modifies or adopts management measures as recommended by the NPFMC.

The IPHC recommendations then go to the U.S. Secretary of Commerce, where they are adopted and implemented through the NMFS by March.

This process enables managers to respond faster with regulations for guided anglers, allowing for a quick response to overages. It also uses the most recent halibut stock status (based on the IPHC interim meeting results in November) and charter fishery data for the next season's measures. However, it leaves the following unanswered questions: Does the public still have sufficient opportunity to comment on new regulations, which lacks the scientific analyses as in the customary rulemaking process? What happens if the IPHC modifies their stock assessment after the NPFMC's December meeting? Does this invalidate the basis of these management measures? The NPFMC will continue with this process under the new Catch Sharing Plan, so these questions will still need to be answered.

ACCOUNTABILITY UNDER THE CATCH PROGRAM

Although some of the challenges mentioned above are unavoidable, such as the inherent uncertainty in recreational harvest, the NPFMC's recent decision to use data from the Saltwater Charter Log Book has improved the accuracy and timeliness of data. An electronic reporting system could result in further improvements (see discussion below). The NPFMC has also made headway on the lengthy rulemaking process, as discussed in the sidebar. There are even ways of responding to recreational harvest uncertainty by implementing flexible rules that account for this uncertainty (see discussion below). Ultimately, the CATCH program would give the guided sector the opportunity to increase its allocation when needed, thereby decreasing the chance of overages and making accountability easier to achieve.

There is, however, an important feature of catch shares that presents an interesting dilemma for the CATCH program. NOAA's Catch Share Policy (2010) states, "each recipient of a catch share is directly accountable to stop fishing when its exclusive allocation is reached." In the commercial IFQ fishery, participants are strictly monitored and are required to stop fishing once they catch their quota, or they must purchase or lease additional IFQ on the open market. Under the CATCH program, as a new participant of the IFQ program, regulators will demand the same level of catch accountability that is required in the commercial sector. In other words, if the guided sector reaches its total allocation, according to traditional catch share models, it must find additional IFQ to purchase or lease or it must stop fishing.

Although the "stop fishing" provision is fundamental to the concept of catch shares, this would be devastating for Alaska's charter sector. Alaska is a destination sport fishery and anglers pay a significant amount of money to travel to Alaska to fish. Anglers book trips many months, or even years, in advance, often with non-refundable air and lodging expenses. In the face of variable and unpredictable regulations, an angler might not choose Alaska as their fishing destination. The term "hostage client" is used to describe anglers, who booked many months in advance, only to be subject to a fishery closure or in-season restriction. In such cases, charter operators are forced with the decision to offer refunds or insist that the clients come despite their feelings that they purchased an opportunity to fish that is no

longer available or has been significantly diminished. These scenarios cannot sustain a business, which is why Alaska's charter sector and many other recreational fisheries throughout the nation have spent years working to promote stability in regulations and have opposed in-season management changes and closures, except in extreme cases where stock conservation concerns exist. This is also why the NPFMC is committed to finding solutions that will not result in any in-season changes or in-season closures (NPFMC 2007c).

The CATCH program aims to come up with creative ways of holding guided anglers accountable that will work with, and not against, charter sector business models. Numerous reports stress the importance of flexibility and innovation in the design of catch share programs (Bonzon et al. 2010, 99; National Research Council 1999; NOAA 2010). With this in mind, some alternatives for keeping the guided sector accountable without having to implement "stop fishing" measures are outlined below. These measures can be proactive to account for management uncertainty, or reactive, and only implemented if a catch limit is approached or exceeded.

Proactive Measures

Set aside a "Buffer" with Purchased Quota Share

Given the uncertainty in recreational harvest projections, one option is to build a "buffer" or "cushion" using the purchased quota share. For example, if the annual allocation under the CSP for Area 2C is 760,000 pounds, then the CATCH entity could initially aim to purchase enough quota share to create a 10% buffer (i.e., 76,000 pounds). This extra 10% (or whatever percentage is deemed appropriate) could be set aside to account for fluctuations in angler demand. This buffer would not be used to increase allocation or impact management measures. Once a sound buffer was in place, any additional quota share could be used to relax what might otherwise be overly restrictive harvest measures. At the end of the season, if it looks as though the buffer would not be needed, it could be leased back to individual fishermen or CQEs.

On the downside, this approach may delay the CATCH objectives of maintaining or improving daily bag limits immediately. The guided sector may react against this solution, but as an alternative to potential in-season management closures, this may find some acceptance.[19]

Self-management

Another consideration is to have a voluntary self-management system for the charter sector. This could be an informal agreement between charter operators, or it could be a more structured co-management system in collaboration with the government. Co-management systems have been found to reduce management costs and improve compliance to regulations (Sutinen and Johnston 2003, 476).

Wilen (2001) examined the possibility of voluntary measures among charter operators in Alaska. He suggested, for example, that charter operators could induce clients to voluntarily reduce their take of fish by shifting the emphasis to the sport of hooking, landing, and releasing fish rather than harvesting them, or charter operators could promote trips as one fish per person trips. Charter operators would self-enforce by watching each other and disenfranchising those who fail to follow the rules. Wilen concluded, however, that it is just as likely that charter operators would choose to look the other way or hide fish caught in excess of the voluntary measures. This could distort data for managers, and produce a reduction in reported (and not landed) data.

19 The CATCH charter sector stakeholder panel supported the idea of a buffer. See Appendix C.

Sutinen and Johnston's (2003) concept of an Angler Management Organization (AMO) also explores the concept of a voluntary or co-management system (see earlier discussion on AMOs). Each AMO would be responsible for ensuring their share of the total allowable catch was not exceeded. If exceeded, their share would be reduced, thereby increasing the incentive to self-police.

If a voluntary management system were to occur under the CATCH program, real-time reporting would need to be in place so that charter operators and anglers could know at any given time how close they were to meeting or exceeding their allocation. If they reached a certain threshold, they could agree to voluntary measures to avoid exceeding their quota. They would be motivated by the risk of increased regulations in the case of overages. Compliance would have to be enforced through self-policing, which, as Wilen (2001) pointed out, may be challenging. That being said, current regulations already require self-reporting in the Charter Log Books. Charter operators face the consequence of substantial fines, loss of Charter Halibut Permits, and/or criminal prosecution for failing to accurately report catch data.

Harvest Tickets

Another tool for limiting recreational harvest and ensuring it stays within allocation is through harvest tickets (frequently called "harvest tags").[20] A harvest ticket program is a rights based management tool, in which a natural resource agency assigns a certain number of tickets (paper or plastic) to hunters or anglers, authorizing them to hunt or fish a specified number of animals. Once those tickets have been used, all hunting or fishing must end. This is a common management strategy for controlling hunting. The primary goals are to limit harvest, ensure equitable distribution of harvest opportunity, promote effective monitoring and harvest, and provide data to improve management (Johnston et al. 2007). Harvest tickets may also be distributed through some form of lottery if the resource is extremely limited and there is excessive harvest demand.

Under a harvest ticket program, the angler would need a harvest ticket to fish for halibut. The number of harvest tickets available would be determined by the number of halibut that could be harvested under a given allocation, with some consideration given to a portion of these tickets not being used. When all harvest tickets are used, fishing would stop, thus keeping guided angler harvest within allocation.

Harvest tickets could help reduce the uncertainty in future angler demand by limiting future participation to a fixed quantity. Johnston et al. (2007) reviewed a number of harvest ticket programs and found that they have enabled many to maintain harvest below target levels while avoiding 'derby' fishing or hunting, reductions in season lengths, or other negative trends in management often found in large-scale recreational fisheries. They found that most programs have been generally (although not universally) well received by anglers and managers.

In order to fully access the allocation represented by harvest tickets, as close to real-time accounting would be needed. Many anglers would get a harvest ticket with their license far in advance, and may not end up fishing. Others would go out fishing and not catch a fish. Unused tickets or unharvested fish would have to be thrown back into the pool and reissued in the same season or a great number of fish would go unharvested. If logbooks were electronically reported, this could work.

A fundamental problem with harvest tickets is how to equitably distribute them among a broad range of anglers that make reservations at different times of the year. This issue alone could take years to figure out, taking up significant time and resources by the NPFMC. It would also likely result in the exclusion of many anglers, which is in opposition to the CATCH goal of maintaining access to the fishery for all guided anglers. There could also be potential problems with monitoring, enforcement, and compliance, as well as resistance by anglers to the cost and inconvenience (Johnston et al. 2007). The program would have to develop a system to account for unharvested halibut tickets, and would likely have significant operating costs since it would have to service over two hundred thousand anglers, fishing multiple days, for potentially two hundred fifty thousand halibut.

Reactive Measures

If the proactive measures are not successful at keeping the fishery within allocation, then the following reactive measures could be implemented once allocation is met or exceeded:

Leasing

Under a catch share program, if a participant exceeds his or her shares, they can try to lease or buy additional shares to cover their overage. Different catch share programs have different rules around leasing and purchasing. In Alaska's commercial halibut and

20 The terms "harvest tag" and "harvest ticket" have different meanings in different states and are used differently by different authors. In the state of Alaska, the term "harvest tag" is a data collection tool for counting the number of animals or fish harvested, whereas a "harvest ticket" is a rights-based management tool used to restrict access to a certain species. In this report, the authors use terminology that is used in Alaska.

sablefish IFQ program, catcher-processor vessel shares (category A) are fully leasable, but there are tight restrictions on leasing catcher-vessel shares (categories B, C and D). However, under the NMFS's Catch Sharing Plan, halibut IFQ holders are allowed to lease GAF to charter operators.

Under the CATCH program, a similar leasing arrangement could be made so that if there is an unanticipated shortage of allocation near the end of the season, or if overharvest has already occurred, the CATCH entity could lease from IFQ holders who have not already fished their quota. Leasing could be two-way, allowing commercial fishermen to lease unused allocation from the CATCH entity at the end of the year. CQEs could also benefit from leasing. A real-time reporting system would have to be in place for the recreational sector so that they would know if and when it is necessary to lease additional IFQ. The CATCH quota manager could manage a list of IFQ holders that would like to participate in the program, and could contact them if the need arises. There could be limits on how much quota could be leased back and forth between sectors similar to those proposed in the Catch Sharing Plan's leasing program (see earlier discussions on leasing).

The Council and IPHC staff analyzed the availability of quota shares for lease under the Catch Sharing Plan and found that while there are quota shares available for GAF leases, there may not necessarily be a willingness to lease (NPFMC 2012b). This same problem could occur with the CATCH program. However, since there would be just one CATCH entity, as opposed to numerous charter operators, it may be simpler to lease to CATCH, which may encourage more transactions.

Rollover Allowances

Rollover allowances let a fisherman or fishery either carry-forward unused quota for the next season, or carry-back or deduct overharvest from the next season's allocation. This serves the dual purpose of mitigating an overage if it occurs to prevent biological harm, as well as maintaining the integrity of catch limits. This is a common strategy used in catch share programs around the world (Sanchirico et al. 2005). In Alaska's halibut IFQ program, overages of 10% of the IFQ amount remaining at the beginning of the last trip are allowed and counted against an individual's quota in the following year. Underages of up to 10% of a person's total annual IFQ account for a current fishing year will be added to that person's IFQ account in the following year. Table 22 below shows other international fisheries that have rollover policies:

TABLE 22: Use of Flexibility Mechanisms in Multi-species IFQ Programs

COUNTRY	PERMANENT TRANSFER	TEMPORARY TRANSFER	CARRY-FORWARD	CARRY-BACKWARD
British Columbia	Y	Y	30%	30%
Nova Scotia	Y	Y	0%	1:1 reduction (no limit)
Iceland	Y	Y	20%	5%
New Zealand	Y	Y	10%	
Australia	Y	Y	20%	20%

Source: Sanchirico et al. 2005

Note: Y and specific rule indicate that yes the instrument is employed; shaded box indicates that the system employed the instrument at one time; shaded box with a Y or rule implies that the rules regarding the use of the instrument have changed over the course of the program.

Experiences in the mid-Atlantic recreational fisheries (Atlantic mackerel, bluefish, summer flounder, scup, and black sea bass) offer some interesting lessons learned. The fisheries are managed through in-season closures, and overages are paid back, pound-for-pound, as a deduction from the catch limit in the next year. These closures and paybacks were initially developed as a way of achieving recreational accountability under the Magnuson-Stevens Act. However, the Mid-Atlantic Fishery Management Council (MAFMC) recently found that these measures are more severe than necessary given the healthy status of the fish stocks. In June 2013, the MAFMC voted to stop in-season closures and to implement new changes so that rather than a pound-for-pound payback, amounts are scaled depending on the condition of the stock. This means that payback for an overage in an overfished fishery is more severe than payback for an overage in a healthy fishery. If stocks are high, accountability measures—such as size limits, bag limits and seasonal limits—will be used to prevent future overages (Mid-Atlantic Fishery Management Council 2013).

The MAFMC also recognized the variability and uncertainty in recreational harvest from one year to the next, and the problem with having an absolute harvest number as a trigger for accountability measures. The MAFMC is now recommending that instead, accountability measures should be triggered based on a three-year average, using statistical confidence intervals. In Alaska, this kind-of flexibility could help reduce some of the problems associated with unpredictable guided angler harvest.

If a rollover allowance were adopted for the CATCH program, similar provisions should be explored, taking into consideration the status of the stocks and the uncertainty of recreational harvest. In addition, rollover underage allowances should be made only for the next season's allocation and should not be banked for use in future years as a cumulative surplus may have a negative impact on the resource.

DATA COLLECTION AND REPORTING

As a proposed participant in a catch share program, the guided recreational fishery will be challenged to meet the standards of data collection, reporting, and timeliness that occurs in the commercial fishery. Commercial fishermen report landings and production at the end of every trip through an electronic system called eLandings, the web-based component of the Interagency Electronic Reporting System (https://elandings.alaska.gov).

Data is available in real-time or near real-time. They also hail in/out and complete logbooks for each trip. At the major ports, NMFS agents independently verify the data by checking the actual landings against the shareholders' logbooks. At smaller ports, they do random checks. As of January 2013, a new and revised observer program requires partial or full coverage for all sectors of the groundfish fishery, including vessels less than 60 feet (previously smaller vessels did not require observer coverage).

Charter halibut permit holders are required to complete logbook information for each trip or day of fishing before their halibut is offloaded. Charter clients add their signatures to the logbooks as verification. Logbook data sheets must be submitted to ADF&G and postmarked or received no later than 14 calendar days after the Monday of the fishing week. The charter logbook sheets can be submitted by mail or can be placed in one of the ADF&G drop boxes available at some ports, resulting in a lag time of two weeks to one month before NMFS receives the data (NOAA Fisheries 2011b). Enforcement officials check for compliance at-sea or dockside by counting halibut on board and comparing the count to the paper logbook.

Under the CATCH program, charter harvest will need to be tracked in as close to real time as possible to allow fishery participants, managers, and enforcement officials to know, at any given time, how much quota in the pool has been fished, and whether there is enough in the pool to cover the landings. An improved reporting system should aim for real-time or near real-time data, accuracy and precision in data, simplicity and convenience in reporting, efficient and effective enforcement and administration, and independent verification (not simply based on self-reporting). With more timely and accurate reporting, and a more precise understanding of actual harvest, managers could feasibly relax some of the overly conservative restrictions intended to keep harvest within allocation. The NPFMC has clearly stated its intention "that the real time collection of data should not be used for in-season management changes or in-season closures; rather it is the intent of the NPFMC that these options be used to shorten the data collection feedback loop to facilitate the timely advance adoption of management tools designed to achieve the charter sector allocation (NPFMC 2007c)." Improved accountability is critical to the success of catch share programs, including the CATCH program. The most feasible solution at this point is through an electronic reporting system, coupled with independent verification systems.

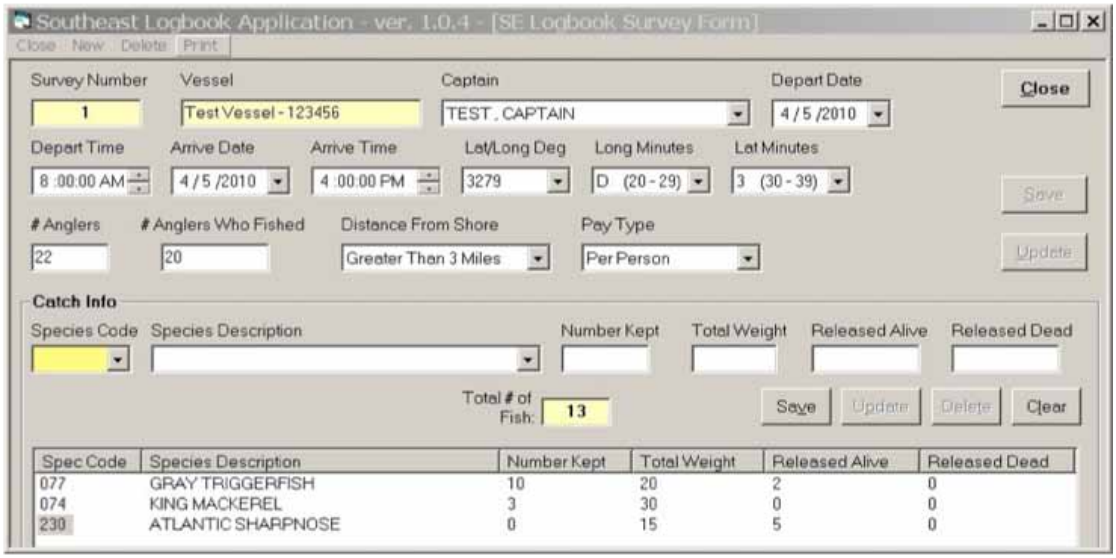
Electronic Reporting

With an electronic reporting system, charter halibut permit holders could report on the number of halibut caught by clients through an Internet web-based system similar to the commercial eLandings system, or through a phone-in system. This could be done on a daily basis to provide real-time data on harvest. It could be done in place of, or in addition to, the Saltwater Sportfishing Charter Vessel Logbook.

NMFS' Marine Recreational Information Program has conducted a number of studies to explore the feasibility of electronic reporting for the for-hire fisheries in the Gulf of Mexico, U.S. South Atlantic and Puerto Rico. Since January 1, 2013, headboat captains in the U.S. South Atlantic and Gulf of Mexico for-hire fisheries have had the ability to submit trip reports through a secure website and mobile application using computers, tablets, or smart phones (see Figure 12 for a screenshot of the electronic logbook) (NOAA Fisheries 2012). The Gulf of Mexico pilot study demonstrated that a for-hire sector can submit daily reports on catch, discard, location, fishing effort, and economic data using a mobile device such as an iPhone, and the data can be sent directly to NMFS (MRIP 2013).[21] The study concludes that electronic reporting is more efficient, cost effective, and accurate than paper logbook reporting, and should be required whenever it is practical to do so. Other studies have drawn the same conclusions (Chromy, Holland and Webster 2009).

In Alaska, managers have considered electronic reporting for charter halibut permit holders for many years. In 2005, NMFS commissioned Wostmann & Associates to prepare a feasibility study of a telephone-based data reporting system for the proposed halibut Charter IFQ Program (Wostmann & Associates 2005). Although the NPFMC rescinded the Charter IFQ Program, the telephone-based reporting system could still be employed, ideally with automated systems that would not require a live person (Chromy, Holland and Webster 2009).

FIGURE 12: Screenshot for the South Atlantic Electronic Logbook Project



Source: SAFMC 2012

21 MRIP contracted Bluefin Data Incorporated to develop a secure internet website for permit holders to report trips and inactivity (www.gulflogbook.com). Texas A&M Corpus Christi Hart Research Institute then developed a smartphone application called iSnapper that could interact with the online database (http://www.harteresearchinstitute.org/isnapper).

The NPFMC is launching an electronic reporting system for the GAF program under the Catch Sharing Plan. NMFS will administer a web and phone-based electronic system for charter halibut permit holders to report on daily landings of GAF retained (NPFMC 2012a, 246). Each permit holder will be assigned a unique GAF reporting number and will use that number to electronically report on the number of GAF retained by clients that day. For additional verification, each client will be required to sign the back of the operator's GAF permit, enter his/her sportfish license number, and indicate the number of GAF harvested. They will have to complete all logbook information and electronic submissions before anyone disembarks the vessel and before the vessel leaves the offloading location. GAF harvest will have to be submitted electronically at the end of the fishing trip and before the end of the calendar day. Permit holders will continue to submit logbooks weekly.

An electronic reporting system is a feasible, timely, and potentially very effective way for Alaska's guided recreational fishery to improve the timeliness and accuracy of catch reporting. The technology exists, and has proven successful through pilot studies. Information technology has grown tremendously in recent years, and a charter business today cannot effectively conduct business without a cell phone or some connection to the worldwide web.[22] According to ADF&G (2013b), commercial electronic reporting requires fewer staff resources for data processing and entry of paper reports, and has improved the quality of data.

During the CATCH surveys and workshops, charter operators were mostly in support of electronic reporting. There were some concerns raised about Internet connectivity during long trips at sea, the burden of additional reporting requirements, and the expense and risk of handling smart phones and computers at sea. In the commercial IFQ fishery, there is a special desktop application for the at-sea catcher processor fleet that can be emailed, and a backup paper submission system is available, with permission, in the case of system outages. This kind-of system could also be developed for charter operators who are out at sea for longer periods of time. Participants could also use satellite phones for reporting to an Interactive Voice Recording (IVR) telephone service, as has been proposed for the GAF program.

Regarding the expense of electronic reporting, the Gulf of Mexico study found that it actually resulted in a higher cost savings in terms of data review, follow-up, and data entry in comparison to paper log sheets (MRIP 2013). Since most operators have computers and cell phones, additional operating costs for charter operators were found to be negligible. With the GAF electronic reporting system, NMFS estimates that it will take 18 minutes to submit a GAF landing report, and it will cost approximately $7.50 per trip for charter operators to cover the costs of hardware, software, and staffing for data entry (NPFMC 2012a, 246).

There have been concerns raised about enforcement issues at-sea, since electronic reporting would not have to occur until the end of the fishing day (NPFMC 2008). This could be resolved through independent verification, such as the paper logbook, which has to be signed immediately upon landing. For the GAF electronic reporting system, they have addressed this problem by proposed changes to the paper logbook to include the GAF permit number and number of GAF retained upon landing. For each GAF fish, the upper and lower lobes of the tail must be clipped. Each GAF angler must acknowledge that the recorded information is correct by signing the logbook and the back of the operator's GAF permit.

In order to develop a successful electronic monitoring system, administrators will need to carefully think through these issues regarding enforcement, reporting compliance, reporting frequency, and validation. Previous pilot studies and reports can be drawn upon as resources. For example, the Gulf of Mexico pilot study (MRIP 2013) goes into detail on many of these issues, with a number of recommendations. A report commissioned by the Environmental Defense Fund lists "guiding principles" that should be

22 In the CATCH survey sent out in February 2012, 79% of respondents reported having Internet connectivity at some point during the day, 69% cell phone connectivity, and 63% landline connectivity (see Appendix C).

considered when developing a new monitoring and reporting system, such as the importance of engaging stakeholders in the design, setting goals early on, enforcement and monitoring strategies, and cost effectiveness (MRAG Americas 2011). A study by the Atlantic Coastal Cooperative Statistics Program is currently collecting attitudes and opinions from recreational fishermen and for-hire operators on electronic reporting, which may be useful in designing an electronic reporting system for Alaska (Atlantic Coastal Cooperative Statistics Program 2013).

Harvest Tags[23]

Harvest tags are used in hunting and fishing as a way to measure effort. For example, hunters in Alaska must purchase a numbered, metal locking tag before hunting a big game animal.[24] Immediately after the kill, they lock the tag on the animal, where it must remain until the animal is prepared for storage, exported, or consumed. At that point they, complete a harvest report for the animal killed.

This is the idea behind a halibut harvest tag or "jaw tag" which could be used to help track the number of fish landed to validate logbooks or electronic reporting. Individually numbered zip ties (harvest tags) could be distributed to guided anglers, with one harvest tag equal to one fish. Once a halibut is caught and retained, guides would affix the zip tie to the jaw of the halibut and record the harvest tag number in the charter logbook. At the end of the year, the angler would report how many harvest tags he or she used and return any unused harvest tags to ADF&G. This data could be used to validate harvest numbers counted in logbooks and surveys, thereby supplementing monitoring and enforcement. This system is not intended to control fishing effort. There are different ways that a harvest tag system could work, as outlined in an analysis of reporting options for the GAF program (NPFMC 2008).

Assuming no tags are lost and all anglers return their harvest tag report at the end of each year, harvest tags could provide a tool for validating the counting of fish, and could improve the reliability of self-reporting. However, harvest tags would not achieve the goal of real-time reporting that would be required for the CATCH program. Instead, they would simply be useful for verifying harvest.

There are a number of potential problems with a proposed harvest tag system, including redundancies with the logbook, Statewide Harvest Survey, and creel surveys. Harvest tags would create additional work for managers and charter permit holders. With the CATCH program, a large number of tags would be needed, which would require a significant administrative structure and related program costs. There could also be challenges associated with monitoring, enforcement, and compliance. Some operators have reported that tags would be ineffective at remote lodges and other locations with a single operator and minimal enforcement (Wostmann 2003 as cited in NPFMC 2008, 10). Tags could be lost, and they might be expensive and inconvenient to use (Johnston et al. 2007). In Oregon, where they have a harvest tag program for salmon, steelhead, sturgeon, and Pacific halibut, only 18% of anglers returned their tags in 2011. As a result, the Oregon Department of Fish and Wildlife has had to implement incentive programs such as raffles and prizes to inspire anglers to return their tags (Oregon Department of Fish and Wildlife 2012).

23 As noted earlier, the terms "harvest tag" and "harvest ticket" have different meanings depending n the author. In this report, a "harvest tag" refers to a data collection tool for counting the number of animals or fish harvested, whereas a "harvest ticket" is a rights-based management tool used to restrict access to a certain species.

24 The price of tags varies considerably between residents and non-residents (e.g., a resident must pay $25 for a brown/grizzly bear tag, in comparison to non-residents who must pay $500).

Precision in Harvest Accounting

In the commercial fleet, fishermen are compensated for halibut by weight, and strict state certified landing scales are used to report commercial harvest. In the recreational sector, the individual weights of fish are determined by an IPHC length-to-weight conversion table, which the ADF&G port samplers use to measure recreational halibut landings. The average weight of a halibut is multiplied by the number of fish caught to arrive at the total weight of halibut harvested in that region.

These different means of measuring commercial and charter harvest present a challenge for any inter-sector transfer program, including the GAF provision of the CSP. The conversion between annual IFQ and GAF will be based on the average weight of halibut landed in each region's charter halibut fishery (2C or 3A) during the previous year, as determined by ADF&G. However, this method is problematic due to the different average sizes between sub-regions (see sidebar). Instead, NMFS recommends measuring the length of each halibut retained and using the IPHC's length-to-weight table as a standard for calculating transfers between IFQ and GAF (NMFS Alaska 2012c). The CATCH program could also adopt this method to record and report all guided angler halibut catches.

PROBLEM WITH USING AVERAGE WEIGHT TO CONVERT IFQ TO GAF

In 2010, the last time Southeast Alaska was managed under a one fish of any size regulation, the sub-region of Prince of Wales Island had an average fish size of 14.8 pounds, while the sub-region of Glacier Bay had an average fish size of 47.4 pounds. The regional average was 26.4 pounds (ADF&G Sportfish Survey 2010).

If the GAF program used the regional average size of 26.4 pounds to calculate the IFQ transfer amount, anglers in the Prince of Wales area would be paying for a 26.4 pound fish, which would average only 14.8 pounds in that region and the anglers in the Glacier Bay area would be getting a bargain, paying for a 26.4 pound fish, that averaged 47.4 pounds.

RECOMMENDATIONS FOR ACCOUNTABILITY

This section has examined accountability challenges in Alaska's guided sport sector and potential ways to overcome these challenges through the CATCH program. This included a discussion on proactive accountability tools (conservative regulations and buffers, self-management, and harvest tickets), and reactive tools (leasing and rollover provisions). It also outlined different options for data collection and reporting including electronic reporting, harvest tags, and precision in harvest accounting. Based on this analysis, CATCH recommends the following:

- Regulators should adopt flexible means of holding the guided sector accountable that avoid having to enforce a "stop fishing" measure, which would be devastating to the charter sector. Priority should instead be given to the following accountability tools:
    - » A reasonable buffer should be set aside to account for uncertainties in angler harvest and regulations. Once an appropriate buffer is in place, additional purchased quota share can be used to relax restrictive harvest measures.
    - » The program should include rollover allowances to account for harvest overages and underages, taking into consideration the status of the stocks and the uncertainty in recreational harvest (e.g., if stocks are doing well, the NPFMC can relax from taking immediate action on overages and instead use a three year rolling average in recommending harvest measures.). In addition, rollover underage allowances should only apply to the next season's allocation and should not be banked for use in future years.
    - » The CATCH program should allow limited annual leasing between the commercial and charter sectors, so that if there is a shortage of allocation near the end of the season, or if overharvest has already occurred, the CATCH entity can lease from willing IFQ holders who have not already fished their quota.
- Managers should adopt an electronic reporting system to improve the timeliness and accuracy of charter harvest data, with both an Internet reporting system and possibly an Interactive Voice Recording phone service.
- The program should adopt the NMFS' recommended measurement for GAF fish, which measures the length of each halibut retained and uses the IPHC's length-to-weight table as a standard for calculating transfers.

Funding

The success of the CATCH program depends on an effective and long-term funding strategy. The holding entity will need to raise funds to purchase and manage enough quota shares to achieve its daily bag limit objectives. There will be administrative costs such as legal consultation during setup, banking fees, personnel, and filing for taxes. There may also be external government administrative costs, such as NMFS administrative fees to pay for the costs of tracking, purchasing, and sales of quota.

FUNDING NEEDS

Funding needs will depend on how much quota share is needed to reach the desired bag limits, and it will be influenced by the kinds of restrictions the NMFS places on annual transfers under the CATCH program, the availability of quota share on the market, the price of quota share at the time of purchase, and how the holding entity impacts that price. As stated in the Research Group's economic analysis for this project:

> There is no single optimal level of purchase that will work across time. Even if the CATCH program could calculate in the immediate term the optimal quota purchase levels, quota prices, financing requirements, and changes in recreational demand, that decision would be non-optimal in the longer term in response to changes in: 1) recreational demand (e.g., a shift in demand due to changes in the national income); b) halibut populations (increases or decreases due to changes in environmental conditions); or c) charter industry costs (e.g., new taxes or higher fuel costs). A well run [holding entity] would need to adjust their decision-making each year in the face of these changes to maximize benefits to the charter industry (and/or associated communities) (Davis, Sylvia and Cusack 2013).

Nonetheless, it is possible to make estimates using a number of assumptions. Earlier in this report, Table 15 estimates that for Area 2C to reach a one fish of any size bag limit during times of low abundance, the CATCH entity would need to transfer approximately 587,000 pounds. Table 16 estimates that for Area 3A to maintain a two halibut of any size bag limit during times of low abundance, the CATCH entity would need to transfer 785,000 pounds. With these simplified estimates of quota share needs, it is possible to project how much it would cost to purchase sufficient quota share (see Table 23). Using a price range of $25 to $50 dollars per pound, Area 2C would need between $14.6 million and $29.4 million to transfer 587,000 pounds. Using the same price range, Area 3A would need between $19.6 million and $39.3 million to transfer 785,000 pounds.

TABLE 23: Estimate of Funding Needs

AREA 2C			AREA 3A		
PRICE	QS NEEDED TO REACH 1 FISH OF ANY SIZE	ESTIMATED COST	PRICE	QS NEEDED TO REACH 1 FISH OF ANY SIZE	ESTIMATED COST
$25	587,000	$ 14,675,000	$25	785,000	$ 19,625,000
$30	587,000	$ 17,610,000	$30	785,000	$ 23,550,000
$35	**587,000**	**$20,545,000**	**$35**	**785,000**	**$ 27,475,000**
$40	587,000	$ 23,480,000	$40	785,000	$ 31,400,000
$50	587,000	$ 29,350,000	$50	785,000	$ 39,250,000

In the most likely funding scenario, the holding entity would acquire a loan, which would be paid off with the revenue stream from a user fee or tax. Table 24 presents an example of how debt from this loan could be paid off with a halibut stamp in Area 2C. The table uses the following assumptions:

- 587,000 lb. of quota share is needed to reach one fish of any size bag limit.
- Cost per IFQ pound is estimated at $35 per pound.
- Quota share is bought through a quota share broker with a 3% broker's fee and a loan origination fee (closing costs) of 1%.
- A revenue generating mechanism is in place prior to the purchase of QS and thus a down payment of 5% is needed.
- The terms of the loan are based on the same terms under the CQE loan program in place for 2012.
- The number of anglers that may have to purchase a halibut stamp was calculated using a four-year average of angler fishing effort from 2009 to 2012 (years regulated under a one fish daily bag limit). This was multiplied by a stamp fee of $20 and $10 to illustrate the revenue potential at this cost to anglers.

In reality, not all the needed quota share would be available for purchase immediately. Loan requirements would be scaled to the available quota share purchased and fluctuations in quota share purchase prices. A halibut stamp could begin at $10 to gain acceptance from guided anglers and demonstrate the positive benefits of their contributions. Under Area 2C's current management measures (a reverse slot limit) purchase of quota shares may have immediate results in relieving size limit restrictions. For example, if in 2013, 40% of the goal or 234,800 pounds of IFQ were purchased, the lower limit of the 2012 reverse slot limit (U45 O68) could have been increased from 45 inches to 50 inches or from a fish of 45 pounds to a fish of 60 pounds; a noticeable improvement (Meyer and Powers 2013). It may take less quota than initially projected depending on the future conditions of the halibut stock. If stock abundance increases, guided angler allocations would increase along with IFQ holdings of the CATCH entity.

The results show that the total annual financing costs for securing halibut would be approximately $1.32 million in Area 2C, and the annual revenue raised by a $20 stamp would come to $1.48 million. In other words, under the assumptions above, a $20 halibut stamp would be sufficient to cover the annual costs for loan repayment, with some extra funds available to cover some of the administrative costs of running the program.

TABLE 24: Area 2C Sample Financing

FINANCING COST		
Purchase (lb.)	587,000	234,000
Cost per pound (2012 estimate)	$ 35	$ 35
Purchase	$ 20,545,000	$ 8,218,000
Brokerage Fee 3%	$ 616,350	$ 246,540
Origination Fee 1%	$ 205,450	$ 82,180
Sub-Total	$ 21,366,800	$ 8,546,720
Less Down Payment 5%	$ 1,068,340	$ 427,336
Total Financed	$ 20,298,460	$ 8,119,384
Annual Loan Payments, Term 25 Years, Interest 4.25%	$ 1,319,574	$ 527,832
FINANCING REVENUE		
Angler Groundfish Effort **	73,884	73,884
Stamp Fee	$ 20	$ 10
Annual Revenue	$ 1,477,680	$ 738,840

* Reduced rate for timely payments
**ADF&G Average 2009–2012

Source: Meyer and Powers 2013

Davis, Sylvia and Cusack (2013, IV–9 and IV–12) conducted a similar analysis of financing requirements for Area 2C under the CATCH program, looking at a range of options (Table 25). They used four quota transfer options for different selling prices ($35 and $50) and different purchase volumes (300,000 pounds and 500,000 pounds). Their results show that the total annual financing costs for securing halibut could range from $1.2 to $3.9 million under the alternative assumptions, while the annual fees that could be raised from the stamps would range from $0.7 to $2.7 million per year. If adequate quota share could be secured at $35 per pound and angler participation increased significantly at a stamp fee of $20 per day, revenues would be adequate to finance the necessary purchase. However, if quota shares were $50 per pound or more, then even a $30 stamp per angler day would be inadequate to finance the required purchase (unless angler participation rates increased by 30% or more). They conclude by saying, "it may not be possible to purchase all the quota needed at first to get back to one fish bag limit of any size in 2C, depending on availability and prices. However, any purchased QS will add to either keeping harvest within allocation or help loosen harvest restrictions" (Davis, Sylvia and Cusack 2013, IV–9).

TABLE 25: Example Financing Requirements for Area 2C Alaska Recreational Guided Angler Sector Quota Share Acquisition Options

FINANCING COST	GUIDED ANGLER SECTOR COMMON POOL RESOURCE OPTIONS			
	OPTION 1	OPTION 2	OPTION 3	OPTION 4
Transfer (net pounds)	300,000	700,000	300,000	700,000
QS acquisition cost in 2012 QP equivalents (per net pound)	$ 35	$ 35	$ 50	$ 50
Purchase ($ millions)	$ 10.50	$ 24.50	$ 15.00	$ 35.00
Brokerage Fee 3% (thousands)	$ 315	$ 735	$ 450	$ 1050
Total Financed (millions)	$ 10.82	$ 25.24	$ 15.45	$ 36.05
LOAN ORIGINATION				
Rate	2.0%			
Amount (thousands)	$ 210	$ 490	$300	$ 700
Loan Principal (millions)	$ 11.03	$ 25.73	$15.75	$ 36.75
ANNUAL LOAN PAYMENTS				
Term (years)	20			
Interest Rate	5.25%			
Annual Payments (thousands)	$ 904	$ 2,108	$ 1,291	$ 3,012
ANNUAL ADMINISTRATION FEE				
Base is total Acquisition Cost Rate	2.5%			
Amount (thousands)	$ 263	$ 613	$ 375	$ 875
Total Annual Requirements (thousands)	$ 1,166	$ 2,721	$ 1,666	$ 3,887

FINANCING REVENUE	ANNUAL REVENUE FROM IMPOSING HALIBUT FISHERY GUIDED ANGLER SECTOR STAMP								
	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 5	OPTION 6	OPTION 7	OPTION 8	OPTION 9
Base bottomfish days 2011	81,698								
Period growth rate	0%	0%	0%	10%	10%	10%	-10%	-10%	-10%
Period end-point days	81,698	81,698	81,698	89,686	89,686	89,686	73,528	73,528	73,528
Stamp fee	$ 10	$ 20	$ 30	$ 10	$ 20	$ 30	$ 10	$ 20	$ 30
Annual Revenue (thousands)	$ 817	$ 1,634	$ 2,451	$ 899	$ 1,797	$ 2,696	$ 735	$ 1,471	$ 2,206

Source: Study.

Notes: Stamp fee adjustment factor for multi-day and annual stamp discounts based on King stamp sales and angler days when trip was for targeting salmon in 2011. It is reasonable that stamp sales annual revenue can be estimated using total effort (angler days) times a daily fee amount, as long as the overall fee structure and regulatory application is similar to the King salmon stamp system.

FINANCING MECHANISMS

The CATCH entity will require initial capital to start purchasing quota share, and a long-term revenue stream to retire any loans acquired and to continue purchasing quota share. Capital could come from federal and state loan programs, special interest loans, grants, investments, and fundraising efforts (e.g., halibut derbies or auctions). A revenue stream could come from a federal or state user fee (e.g., halibut stamp), industry tax or self-assessment, or a combination. The source of the fund is critical to the potential success of this program since it will determine: 1) who may have access to the quota; 2) special legal and regulatory requirements; 3) administrative costs; and, 4) efficiency in aligning the economic and financial costs of the purchases with the economic and financial benefits from their use (Davis, Sylvia and Cusack 2013).[25]

Ultimately, the CATCH entity should pursue a diverse portfolio of funding, using a combination of financial tools. This will help during market downturns, make interest payments on debt more manageable, and lower the risk for lenders.

Grants

The CATCH entity could obtain grant funding from government grant programs (federal, state, local), philanthropic foundations, individuals, or non-governmental organizations. The purpose of the CATCH program—to maintain the economic viability of charter tourism in coastal communities while achieving conservation goals, improving accountability, preserving public access, and lessening the stress between fishing sectors—may appeal to many funders interested in rural economic development, innovative fisheries management, or increasing angler access and fishing opportunity. The Cape Cod Fisheries Trust, a community entity that is authorized to buy quota and lease it to local fishermen, obtained a number of grants from family foundations and non-governmental organizations such as the Surdna Foundation, Walton Family Foundation, The Nature Conservancy, and the National Fish and Wildlife Foundation's Fisheries Innovation Fund (Cape Cod Commercial Hook Fishermen's Association 2013).

Grants are the most affordable funding source, but can be limited in amount. Matching grants (grants that require contributions by another donor) may be easier to secure, but require a capital investment. The guided angler holding entity would need to thoroughly research and pursue a mix of funders and grant opportunities available at the time the program is implemented.

Loans

The CATCH entity could obtain a loan using purchased quota shares as collateral. Some banks, such as Wells Fargo and the Alaska Commercial Fishing and Agriculture Bank, have made loans to purchase quota share/IFQ (Stewart 2006; Klingert 2006). Commercial banks were the second most important source of funding for commercial halibut quota share transactions in 1995–1998 (Dinneford et al. 1999 as cited in NPFMC 2007b). However, commercial banks may be unwilling to lend to a new, high-risk entity with no credit history, proven operating capacity, or existing assets (Alaska Sea Grant 2010). They also might not be willing to accept quota share as collateral for loans, as stated in the NPFMC's analysis:

> Some private banks may not accept QS as collateral for loans because they are not comfortable with the existing system established by NMFS for tracking the existence of a security interest against QS used as collateral. Under a "courtesy system," a private lender can assert a security interest to NMFS and the agency will note that in the database. If NMFS receives an application to transfer the quota, it will notify the private lender who asserted the interest and provide the lender ten days to halt the transfer with a court order. However, for QS, a private lender has to file a lien under the Uniform Commercial Code (in Alaska, with the Recorder's Office in the Department of Natural Resources) to have an enforceable action against the asset (NPFMC 2007b).

The CATCH entity will likely have a better chance applying for government or special interest loans. Once the program is underway with sufficient capital and quota shares, commercial lenders may be more willing to fund the program.

Federal, state, and private loan programs have been developed to assist commercial fishermen and communities in purchasing quota. Although existing programs tend to be geared towards entry-level and small boat owners, it is possible that these programs could be amended through legislation to change the qualification requirements, or similar programs could be initiated to provide financial assistance to an entity representing guided anglers (Halibut Charter Stakeholder Committee 2007; NPFMC 2007b). Table 26 lists a number of funding programs that, while not currently applicable to the CATCH program, could be amended or used as models for new funding programs:

25 For a detailed discussion on the economic implications of funding the CATCH program, refer to chapter IV *Quota Share Transfer Financing* in Davis, Sylvia and Cusack (2013).

TABLE 26: Funding Programs[26]

FUND	SOURCE	DETAILS
FEDERAL		
North Pacific Loan Program	NMFS	Established by the NPFMC under Sec. 303(d)(4)(A) of the Magnuson-Stevens Act, this low-interest loan program is for entry level or small boat fishermen wishing to purchase quota share in the halibut and sablefish fisheries off Alaska.
Fisheries Finance Program	NOAA	Long-term financing for the cost of construction or reconstruction of fishing vessels, fisheries facilities, aquaculture facilities and individual fishing quota in the Northwest Halibut/Sablefish and Alaskan Crab Fisheries.
Halibut Sablefish Quota Share Loan Program (HSQS)	NOAA	Long-term loans to individual fishermen for the purchase or refinancing of Alaska Halibut and Sablefish Quota Shares (IFQ).
STATE		
Commercial Fishing Revolving Loan Fund	State of Alaska Department of Commerce, Community and Economic Development (DCCED)	Long-term, low interest loans to promote the development of predominantly resident fisheries, and continued maintenance of commercial fishing vessels and gear for the purpose of improving the quality of Alaska seafood products. This fund also provides for the purchase of quota share.
Commercial Charter Fisheries Revolving Loan Fund	(DCCED)	Affordable loans to Alaskan commercial charter operators to promote Alaskan ownership of charter halibut permit.
CQE Loan Program	(DCCED)	Long-term, low interest loans to CQEs to purchase halibut and sablefish quota share for lease back to local resident fishermen.
Small Business Economic Development Revolving Loan Fund	(DCCED)	Loans for the start up or expansion of businesses that will create or retain jobs ineligible areas (areas affected by high unemployment, low average income, etc.) as determined by the U.S. Economic Development Administration. Most areas in Alaska are eligible.
Rural Development Initiative Fund	(DCCED)	Loans for working capital, equipment, construction or other commercial purposes to businesses located in a community with a population of 5,000 or less that will create or retain jobs in the community. Loan funds are earmarked for businesses that serve the fishing industry.
State Issued Bonds	State of Alaska Department of Revenue	State legislation could authorize the issuance of revenue bonds to finance the purchase of quota share and to establish a revenue stream to fully cover debt service (e.g., charter stamp). This could be modeled after the State of Alaska's construction and refurbishment of sport fish hatchery infrastructure (refer to discussion in NPFMC 2007b, 62–63). This would require an amendment to AS 37.15.765. Bond Authorization.
PRIVATE SPECIAL INTEREST LOANS		
North Pacific Fisheries Trust	EcoTrust	The North Pacific Fisheries Trust, a 509(a)(3) non-profit subsidiary of Ecotrust, offers low interest loans to CQEs for purchasing quota shares (http://www.ecotrust.org/npft).
California Fisheries Fund (CFF)[27]	Ocean Protection Council and private family foundations.	Nonprofit revolving loan fund that invests in the fishing industry on the West Coast (http://www.californiafisheriesfund.org).

26 For more details on these funding programs and how they could apply to the charter sector under a compensated reallocation plan, refer to the NPFMC analysis (2007b).

27 Although CFF does not fund projects in Alaska, it is listed here to illustrate the kind-of programs that are being developed nationwide.

User Fees

Funds could be obtained through user fees, in which levies are placed on individual anglers in the form of stamps or license fees.

Federal Halibut Stamp

A federal halibut stamp could be modeled after the successful Federal Duck Stamp Program (see box below). Anglers could purchase a pictorial halibut stamp as a mandatory license required to fish for halibut. All or a portion of the proceeds could go towards the guided angler pool.

Although a federal halibut stamp is possible, the process would be lengthy and full of uncertainties. Current federal law only allows NOAA to collect fees associated with individual fishing privileges, but under a common pool management regime, revenues would not flow from an individual fishing privilege but from the right to harvest within a group management regime (NPFMC 2007b, 70). Any issue not explicitly defined in the Magnuson-Stevens Act or the Halibut Act would require an amendment to the relevant Act and congressional action.

The Migratory Bird Hunting Stamp Act established the Federal Duck Stamp program in 1934. The next window of opportunity to open the Magnuson-Stevens Act or the Halibut Act may be years down the road. If a Halibut Stamp were pursued on a federal level, all western states that have access to halibut would have to be involved in the discussion. Each state's interest in a halibut stamp may differ and consensus may be difficult to reach. It would also be difficult to ensure that the money generated in Alaska from the halibut fishery would flow back into this program (NPFMC 2007b, 70).

There are also legal uncertainties about whether a federal halibut stamp could be made mandatory for only guided anglers in Alaska, while excluding unguided anglers, and whether the revenue raised could be used to benefit just one sector of the halibut fishery. A federal stamp may be more appropriate in the future if the entire recreational angling community is once again managed under the same management regulations.

FEDERAL DUCK STAMP PROGRAM

The Federal Duck Stamp is an adhesive stamp required by the U.S. federal government to hunt migratory waterfowl. The U.S. Fish and Wildlife Service produces these pictorial stamps, which are used as federal licenses. The stamps have become collector's items, and have produced significant funds for wetland conservation (U.S. Fish and Wildlife Service 2013).

State Halibut Stamp

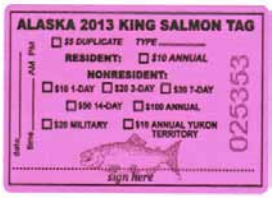
A state halibut stamp, paid by guided anglers intending to sport fish for halibut, is another potential form of user fee. A state halibut stamp would not require congressional action, and could be modeled after the Alaska king salmon stamp program and enforced in the same manner (see box below). A state halibut stamp could operate in much the same way as the king salmon stamp, but instead of revenue going towards management and research, revenue would go to the CATCH entity to purchase and manage halibut quota share.

Either the Department of Revenue or ADF&G could collect the funds. If the Department of Revenue were to collect the funds, revenue would be designated by region and deposited in the general fund. ADF&G would still issue and enforce the halibut stamps.

Each year, the Alaska Legislature would make appropriations based on this revenue to the Department of Commerce, Community, and Economic Development (DCCED) to finance qualified regional guided angler quota holding entities. The Department of Revenue would annually review the holding entity budgets. This method has been used for the Alaska Salmon Enhancement tax program since 1976, and for the Regional Seafood Development Association tax program since 2005. All revenues collected under these arrangements have been appropriated back to the respective non-profit associations.

ALASKA'S KING SALMON STAMP

In Alaska, anglers sport fishing for king salmon must purchase a current year's king salmon stamp in addition to their Alaska state fishing license. To make the stamp valid, anglers must sign their name, in ink, across the face of the king salmon stamp and stick the stamp onto the back of their current year's sport fishing license.



Proceeds go towards annual funding for management, research, and enhancement of king salmon in Alaska. ADF&G, with cooperative agreements with the Alaska State Troopers, National Fish and Wildlife Service, NOAA Law Enforcement, and the US Coast Guard, enforce the requirements of the program on the water and at ports of landing.

Sport Fishing License Halibut Surcharge Stamp

Another option is for ADF&G to collect revenue from a state halibut surcharge stamp on sport fishing licenses, and deposit it into a special account within the Fish and Game Fund (in which all sport and hunting license, tag and stamp fees are placed). ADF&G has placed a surcharge on all sport fishing licenses since 2006 and will continue until all revenue bonds are retired. This surcharge is used to fund the construction and renovation of state fishing facilities and other projects beneficial to sport fisheries. With a state issued halibut surcharge stamp, only guided halibut anglers would have to pay the fee, which would be differentiated by region. Revenue in the guided halibut account would be allocated to regional guided angler holding entities with the intention of directly benefiting guided halibut license holders. Regional holding entities would then use the revenue to purchase commercial quota shares, pay principle and interest on loans, and cover any administrative costs. The commissioner of ADF&G would need to seek authority for the transfer of funds from the Legislature.

Legal Implications of State Stamps

In researching the feasibility of a state halibut stamp, several legal and administrative questions surfaced:

1 Would a state halibut stamp be in conflict with federal regulations regarding the management of Pacific halibut?

According to the State of Alaska's Division of Legal and Research Services (Martin 2012), a state halibut stamp would not conflict with federal regulations. The Halibut Act governs the management of Pacific halibut, which NMFS administers. A State halibut stamp would be a revenue-generating mechanism and not a management tool. As such, guided angler regulations would not be preempted by the State, but would continue to be established through the NMFS rule-making process.

2 Would a state halibut stamp need to apply to all recreational anglers under the state's uniform application clause and equal protection clause (see sidebar), and not just guided anglers?

The State of Alaska's Division of Legal and Research Services provided the following statement regarding the uniform application clause as it pertains to a State halibut stamp:

> The first step is to determine whether people who are similarly situated would be treated differently under the stamp program. In this case, charter halibut [anglers] would be treated differently from non-charter sport anglers. However, the Alaska Supreme Court has determined that "since sport and commercial users are not similarly situated, the uniform application clause is not implicated" by treating the two groups differently. Therefore, the halibut stamp program would likely pass the uniform application clause of the Alaska constitution" (Martin 2012, 5).

In sum, the report concludes that the halibut stamp program for guided recreational anglers would likely pass the uniform application clause of the Alaska constitution since guided anglers are managed under different regulations than unguided anglers.

The State's legal analysis also points out that the Alaska Supreme Court has stated that the uniform application clause invokes a more stringent review than the equal protection clause; therefore, "if a program passes the uniform application clause test, then it would also pass the equal protection clause test" (Martin 2012, 4).

3 Would funds collected by the state and directed to a non-profit corporation violate the state's dedicated funds clause (see sidebar)?

According to State of Alaska's Division of Legal and Research Services, *requiring* that the money from the stamp go to a guided angler holding entity, and limiting the power of the Legislature or an agency to access those funds, would violate the dedicated funds provision. However, they explained that it is possible to draft the language for the program in a way that avoids this problem. The required language would make it clear that the Legislature is free to appropriate money to or from the fund at any time (Martin 2012).

Based on this analysis, a state halibut stamp is possible and does not violate the state's uniform application clause, equal access clause, or dedicated funds clause, but it would need state legislation to authorize it.

ALASKA'S EQUAL ACCESS CLAUSES

Alaska's Constitution contains a number of uniquely Alaskan clauses known as the "equal access clauses," which guarantee equal access to the state's natural resources to all of Alaskan citizens.

The uniform application clause states: "Laws and regulations governing the use or disposal of natural resources shall apply equally to all persons similarly situated with reference to the subject matter and purpose to be served by the law or regulation" (Article VIII, sec. 17).

The equal protection clause states: "…all persons are equal and entitled to equal right, opportunities, and protection under the law (Article I, sec. 1).

ALASKA'S DEDICATED FUNDS CLAUSE

Alaska's Constitution, Article IX, sec. 7, has a dedicated funds clause, which states: "The proceeds of any state tax or license shall not be dedicated to any special purpose, except as provided in section 15 of this article or when required by the federal government for state participation in federal programs."

Charter Assessment or Tax

Revenue could also be raised via a fee or tax placed on halibut charter operators, either self-assessed in which the industry voluntarily assesses a fee or tax on themselves, or government assessed.

Charter Halibut Tax

A Charter Halibut Tax could be modeled after the state's Salmon Enhancement Tax, requiring special state legislation. The CATCH entity would have to form a special-interest non-profit corporation such as a Regional Non-Profit Association (RNPA) with the ability to self-tax. As was done in the commercial salmon fishery, all charter halibut permit holders in a region could be sent ballots to vote on the tax, and it could require 30% of the operators to vote, of which a majority plus one must agree on the tax. Charter operators could also vote on a rate of tax. In the Salmon Enhancement Tax program, rates range from 2–3% of the landed market value of catches, depending on region. Processors collect these taxes, which are paid to the Alaska Department of Revenue. With the charter halibut tax, revenue could flow through the system similar to the Salmon Enhancement Tax (through the Alaska Department of Revenue), appropriated by the Alaska Legislature to the DCCED, and dispersed to regional guided angler quota share entities.[28]

As discussed in the NPFMC (2007b) analysis, the form of this tax is important, as a flat tax could directly affect the competitiveness of the business, thereby absorbing a disproportionately higher portion of a small operator's income. The tax could, instead, be floated with business size, and could take on different forms:

- Tax based on a charter operator's gross receipts on fishing activity.[29] While this may be more equitable for the smaller operator, it may be unfair to charter halibut permit owners that do not actively use their permits or spend only a small portion of their time fishing for halibut under their permit.
- Tax on the proportion of fishing activity involving guided angler halibut trips. This may be a more equitable means to base the tax. An example of how this might work is to calculate the number of halibut angler trips an operator took as a percentage of the total number of fishing trips taken. This tax would be applied to this percentage of gross receipts of the operator.
- Tax per fish harvested. This option would pass the tax on directly to the charter client as directed in association by-laws and would be enforced by association audits. The charter operator would collect a tax from each angler for every halibut harvested, or absorb those costs into his or her business model. Taxes collected would be deposited into a separate tax liability account and forwarded to the guided angler holding entity each month.

Tax audits of the above tax alternatives may require access to sport saltwater charter logbooks by guided angler holding entity representatives. There may be resistance to waive confidentiality agreements of the logbook program. Alternatively, a separate auditable and enforceable recordkeeping system may have to be implemented. For example, a special harvest card could be used to record catches for tax purposes and to help with enforcement. These provisions would add additional costs and administration to the program.

Charter Halibut Permit Fee

Since 2011, charter operators must have in their possession a NMFS-issued charter halibut permit when taking clients fishing for halibut. Each permit is endorsed with a maximum number of anglers per trip. There are no fees associated with a charter halibut permit. This NMFS-identified group of charter operators could be levied a fee that they could then pass on to their clients or absorb as part of operating expenses. Any fees associated with a charter halibut permit would require an amendment to the charter halibut permit program and would have to be approved through the NPFMC and the NMFS regulatory process.

The fee could be based on charter halibut permit angler endorsements. NMFS RAM program, which collects IFQ program cost recovery fees from commercial fishermen, would be a reasonable depository for charter halibut permit fees. Collected fees, less any cost recovery expense, could then be forwarded to the guided angler holding entity.

A major issue with this method would be the unequal benefits realized among active and less active permit holders. Not all permit holders would benefit equally from a flat rate fee on permits. On the other hand, a fee on permits could help separate those people who are holding on to idle or minimally used permits.[30]

28 The tax money collected by the Alaska Department of Revenue must be deposited into the state general fund and then appropriated by the Alaska Legislature because of the constitutional prohibition against dedicated funds (NPFMC 2007b, 73)

29 In the case of a lodge fishing package, which includes meals, lodging, and other services, this tax would apply only to the costs of providing the sport fishing portion of the package.

30 There is substantial latent capacity in Areas 2C and Area 3A, which could be problematic in the future if more vessels start participating. In 2012, Area 2C had 578 CHPs but only 287 (50%) made at least one landing. In Area 3A, there were 508 CHPs in 2012, but only 419 (82%) made at least one landing.

Potential Problems with Charter Operator Assessments

One of the CATCH premises is that ownership of the purchased quota share should remain with guided anglers. Therefore, it would have to be clearly stipulated that any fee charged to charter operators to purchase quota share would belong to guided anglers in common. This understanding would have to be legally documented if a charter operator assessment tax or fee were pursued, carefully spelling out the fact that the purchased quota share belongs to the guided anglers, not charter operators. It could state, for example, that upon dissolution of the RNPA, and after all debts incurred are retired, any remaining assets should go to the State to enhance recreational fisheries conservation and research and not to charter businesses. All charter permit owners would have to be made aware of this.

It is also important to consider how taxes or fees would impact the competitive nature of the price of a fishing charter. As stated in the Research Group's economic analysis (Davis, Sylvia and Cusack 2013), "whether self-assessed or government assessed, industry would attempt to pass this cost on to their customers (who ostensibly would pay the increased costs due to their higher level of angling "utility" associated with larger or more abundant fish)." There is a chance that large business operations with high-end clients would absorb the increased expense in their costs of doing business. However, operations with a smaller profit margin might not be able to do this and might have to increase their charter prices or find other ways to stay competitive. A solution could be to stipulate that these taxes or user fees be passed through to clients and that these funds be accounted for separately from other business income and expenses. This could be accomplished through the by-laws of the guided angler holding entity.

Consideration must also be given to how taxes and fees would be reported, paid, and enforced. With a charter halibut tax, a time period could be selected that is convenient for charter operators to send the fees to the Department of Revenue. Charter operators would have to agree to state tax-auditing procedures. With a charter halibut permit fee, if a flat fee is based on permits or endorsements, the process is relatively simple and verifiable through the RAM program. If the fee is based on halibut angler harvest, access by the guided angler quota entity to state charter logbooks would need to be authorized or another recording system developed for audit purposes, and angler effort for halibut would have to be logged separately from bottom fish harvests.

TERMINATION OF REVENUE STREAM

The NPFMC's analysis of compensated reallocation plans states that "revenue streams should be for a defined period and end after the loan or bond is paid off, i.e., continuous open-ended revenue streams are to be avoided" (NPFMC 2007b). Commercial stakeholders have also expressed concern with a continuous funding stream.

In its simplest form, the CATCH entity would stop purchasing quota share once program goals were met (plus a reasonable buffer to account for annual fluctuations in angler demand). Funding programs (i.e., halibut stamp, charter assessment) would stop once all incurred debts were paid.

Another option is to continue the revenue stream indefinitely, which the CATCH stakeholder committee stated as a preference (see Appendix C). Once the CATCH program objectives (bag limits) were reached, the funds could be used for other purposes, such as research or extra administrative fees. Depending on the source of funding, this decision could potentially be made at a later date, through the customary stakeholder process. If transfer and use restrictions are in place, then this should ease concerns that an open-ended funding stream would be used to purchase halibut quota share in perpetuity.

RECOMMENDATIONS FOR FUNDING THE CATCH PROGRAM

This section has examined different means of funding the CATCH program, including grant and loan programs, user fees, and charter operator fees and assessments. Based on this analysis, CATCH makes the following recommendations:

- The CATCH program should pursue a diverse portfolio of funding, using a combination of financial tools, to help finance the purchase of quota shares and to cover administrative costs. This will help during market downturns, make payments on debt service more manageable, and lower the risk for lenders.
- Priority should be given to pursuing a state halibut stamp for all guided halibut anglers who wish to fish and retain halibut. If possible, anglers should have to purchase this stamp prior to departing on a halibut trip. The holding entity should secure a loan with debt service accomplished using revenues from this state halibut stamp.
- In the event that a state halibut stamp is not attainable, the guided angler holding entity should pursue a charter halibut tax, or client based user fee, for those who wish to fish and retain halibut off a charter vessel. This fee could be modeled after the Salmon Enhancement Tax. All CHP holders could be levied a tax and/or fee based on charter logbook records on halibut landings or some other acceptable recording method. Each CHP holder would in turn collect fees from their clients to cover the expense of this tax. It must be made implicit that quota share purchased through this funding method belong to guided anglers in common and not charter businesses.

4

Conclusions

This report has explored the feasibility of integrating Alaska's guided recreational halibut fishery into the commercial IFQ catch share program. Under this concept, NMFS would authorize an entity representing the guided recreational fishery to purchase commercial halibut quota from willing sellers, and hold it in a common "pool" for all guided anglers. The pool of quota would be used to supplement annual regulatory allocations, thereby bringing stability to the charter sector, and supporting the economies of Alaska's coastal communities.

The results show that the CATCH program is a feasible approach for preserving fishing opportunities in Alaska's guided recreational halibut fishery. The NMFS has already set the precedent for adding a community of users to the IFQ program through the Community Quota Entity (CQE) program. A Recreational Quota Entity (RQE) could be modeled after this program. The economic report, which CATCH commissioned, provides additional insight into how such a transfer mechanism could work for the benefit of both the guided recreational and commercial sectors (Davis, Sylvia and Cusack 2013). If the NMFS relaxes transfer restrictions for a given period of time, this could increase asset values for commercial fishermen, and give the guided angler pool the ability to find sufficient quota to meet its objectives. The report identifies creative ways of holding guided anglers accountable to a catch limit that do not depend on in-season closures, which are devastating for charter businesses, and which the NPFMC opposes. An electronic reporting system would help achieve accountability objectives. The research indicates that sufficient funds could be raised through user fees to accomplish the goals of the project.

While this report explores the CATCH program in the context of Alaska's halibut fisheries, it could be used as a model for other mixed-use fisheries in the U.S. and around the world. If adopted, it would be the first program of its kind to integrate a recreational fishery into a catch share program. Managers will have to be open to new concepts and ideas. In Alaska, as the IFQ Program has matured, the NPFMC has been willing to change original components of the program to better fit the needs of fishermen and local fishing communities. Applying this same level of openness and flexibility to the CATCH program will help ensure that the best economic value is placed on fishery resources for coastal communities.

5

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6

Appendices

Appendix A

CATCH BOARD OF DIRECTORS

The CATCH Board of Directors is made up of three members from the Alaska Charter Association (ACA), three members from the South East Alaska Guides Organization (SEAGO), and one non-industry member. Board members include:

Russell Thomas, President
SEAGO Member
Alaska Sportfishing Expeditions, Ketchikan

Greg Sutter, Vice President
ACA Member
Captain Greg's Charters, Homer

Jeff Wedekind, Treasurer
ACA Member
Chinook Shores, Ketchikan

Tom Ohaus
SEAGO Member
Angling Unlimited, Sitka

Gary Ault
ACA Member
Inlet Charters, Homer

Ken Dole
SEAGO Member
Waterfall Resort, Prince of Wales Island

Representative Steve Thompson
Non-industry
Member of Alaska House of Representatives, Fairbanks

Appendix B

CATCH PROJECT PREMISES

Early in the project, the research team developed a list of premises to help narrow the scope of research. The premises and rationale are outlined below:

1 The CATCH entity would be established under existing regulatory authority and would not require Congressional action to amend the Magnuson-Stevens Act or the Halibut Act.

The recent decline of exploitable halibut biomass throughout Alaska has served to heighten the conflicts between commercial and recreational harvests. In an attempt to develop a timely and workable solution to these allocation conflicts and realizing the lengthy amount of time required to make changes in federal regulations at the Congressional level, the project team will first seek out solutions that could be implemented under current regulatory processes.

2 Ownership of the guided angler pool would be used for the benefit of guided recreational anglers in common ownership and not for the sole benefit of any single charter halibut permit owner.

A question of who owns the fishing rights for recreational halibut came to a head in 2001 after eight years of debate, when the NPFMC passed a motion to create a halibut charter IFQ program. Charter operators could sell or lease guided angler harvest privileges (quota shares) between other charter operators. This motion was later rescinded in 2005 due to legal issues. For this reason, the project team will pursue an alternative plan, which would keep harvest rights of guided anglers with guided anglers in a common pool.

3 The plan could be implemented under any existing halibut management regime.

As a standalone allocation transfer mechanism between the commercial and guided recreational sectors, this concept will be developed to work under any management regime.

4 The pool plan design would take into consideration the future inclusion of non-guided anglers if and when this sector is managed under an allocation.

In 2003, the Charter sector was given a Guideline Harvest Level (GHL) as a recommended level of harvest. Since Charter operators take recreational anglers out fishing, a new class of recreational angler was created, the unguided angler. Recreational anglers were then divided into guided (those that chose to use the services of a charter operator) and unguided. As a result of this sector split, an allocation to guided anglers, through a charter GHL, was established.

In recent years, there has been a growth in non-guided angler harvest, while the guided harvest has been on a decline. In 2011, the non-guided harvest was three times that of the guided harvest. In a letter from the International Pacific Halibut Commission, dated September 30, 2010, Dr. Bruce Leaman states:

> The NPFMC CSP does not include removals by unguided anglers; indeed, total removals by unguided anglers are unregulated, which can have a destabilizing effect on achievement of overall management targets. For example, in Area 2C the unguided angler catch has increased 30–50% since the inception of GHL program. In a 2005 letter to the Council, the Commission noted that 'leakage' from the guided to the unguided sectors would be a likely result of not including the unguided sector in management measures designed for the recreational fishery. While difficult to verify, reports of provision of GPS devices, coordinates, and other fishing instructions to 'bareboat' charters in this area abound - catches on such trips are not counted under guided charter harvests. Again, we urge the Council to work in its future actions to bring all recreational removals in the CSP, to bring such harvests fully into a conservation framework.

And again in a letter dated September 2, 2011:

> Lastly, as we have stressed in testimony to the Council on previous occasions, an absence of control of harvest by the unguided sector has strong potential to dissipate any benefits that are intended to accrue from the CSP. Leakage of fish from the guided sector by virtue of 'directed' fishing by bare-boat charters would destabilize halibut management. In no other area where there is management of recreational halibut harvest, is there a situation where unguided recreational harvest is uncontrolled. The Commission staff recommends that NMFS and the Council initiate a regulatory process for the unguided recreational halibut fishery in Alaskan waters.

It is only a question of time before the unguided recreational sector comes under a management allocation. The CATCH program of a compensated transfer of allocation should be designed to accommodate the inclusion of all recreational anglers when this time comes.

Appendix C

STAKEHOLDER FEEDBACK

CATCH has taken steps to understand and incorporate the knowledge, insight, and perspectives of different stakeholders throughout the planning and design of this project. The intention of this stakeholder engagement was to build a stronger design, anticipate and address issues that may arise, and build support for the final concept.

CATCH identified the key stakeholders as the halibut charter operators, commercial IFQ holders, and halibut anglers. Other important stakeholders include processors, other community businesses that depend on sportfishing, and regulators including staff and members of the NPFMC, NMFS, the IPHC, and the ADF&G. Due to limited time and resources, CATCH primarily sought input from the key stakeholders through meetings, presentations, workshops, and surveys (see Table C–2 for a list of stakeholder outreach activities).[1] The team reached out to all other stakeholders through the CATCH website, Facebook and Twitter accounts, open e-mail list, radio and newspaper, public presentations, and by soliciting feedback on the final CATCH design.

CATCH received a great deal of feedback, much of which was used to direct the team's research. Although it is impossible to list all of the comments, there were several themes addressed by each key stakeholder group, which are summarized below. Table C–3 summarizes the stakeholder input regarding specific design features of the CATCH plan including the holding entity, quota transfer mechanisms, accountability, and funding.

COMMERCIAL FISHING SECTOR

Commercial fishing representatives attended CATCH presentations in the summer of 2011, were present at NPFMC presentations, and met individually with the CATCH team on different occasions. CATCH also held two meetings with members of the Halibut Coalition, a group representing 13 member organizations and more than 500 individual members. They provided the following preliminary feedback on the CATCH guided angler pool concept:[2]

a The sale of quota share should be between a willing-seller and a willing-buyer.

b Concern with how the guided angler pool plan will impact small communities, community-based fishermen, and new entrants.

Commercial representatives pointed out that the IFQ program was set up with owner/operator-on-board provisions and restrictions in place to protect these individuals. They wanted to know how the CATCH plan would protect the economies of smaller communities and new entrants, and what limits would be put in place to protect the commercial sector (particularly during times of low abundance).

1 The CATCH surveys were informal, and did not attempt to comply with rigorous statistical standards. It is possible there is survey bias, particularly with the Guided Angler Survey, which was sent via charter operators. Despite this, the researchers decided there is still value to the survey results, which provide a general overview of stakeholder perspectives, with some helpful insights on program design.

2 The Halibut Coalition approved this summary, but asked for the report to clarify that these conversations were preliminary and conceptual in scope, and therefore more issues may arise as the program is more clearly defined.

Representatives stated that D class quota shares would need to be protected, but commented that nowadays B and C class are becoming entry level too. They said their preference is to see an overall cap on how much quota can be transferred, as well as a cap on each class.

c Concern with funding source and preference for a self-assessment fee.

If funding were to come from clients, as in a halibut stamp, the commercial representatives expressed concern that small-scale fishermen would not be able to compete with this collective body of wealthy clients. They worried that the pool would outbid individuals and raise the price of quota share, thereby jeopardizing attempts for new entrants to the fishery. They also worried that there would be no incentive for the charter sector to end the program, even if there was enough money and quota built up.

Instead, they would prefer to see funding through a self-assessment tax. They felt that charter operators should have some "skin in the game." With a self-assessment tax, they said it would be unlikely that charter operators would build a larger pool of money than needed, since it would be coming out of their own pockets. They felt that if charter operators were paying, they would be more responsible with the money and more likely to think in the long-term.

d Concern over goal of 2 fish of any size in Area 2C

Commercial representatives felt that this goal is too high, and would take over the entire commercial fishery.

e Issues of stewardship.

They expressed concern that catch shares, when not attached to a single living breathing person, do not engender the same level of stewardship, which goes against the purpose of the owner-operator provision of the IFQ program.

f Concern with opening up the Halibut Act.

Commercial stakeholders would not want this proposal to open up the Halibut Act.

g Two-way transfer of quota share.

Commercial representatives would like a mechanism in place that would allow purchased quota shares to eventually return to the commercial industry.

h Need for better accountability among charter operators.

i Charter industry should establish a buy-back program to reduce the number of operators in business.

They expressed concern about latent permits becoming active, and recommended setting up a program similar to the Southeast Alaska Seine buyback program, permit stacking, and the Bering Sea Crab program.

CHARTER SECTOR

CATCH conducted outreach to the charter sector through a variety of means, collecting feedback at meetings, presentations, through two informal surveys, and at a two-day charter sector stakeholder workshop. The following themes were observed:

General Support for the Concept

In the first survey distributed to the charter sector, when asked about their level of support for the CATCH concept, 46% of 109 respondents indicated support or strong support, while 30% opposed or strongly opposed it (13% chose neutral and 11% not sure).[3] Several of the comments in this first survey indicated that there was some misunderstanding about CATCH, with confusion between CATCH and the Guided Angler Fish (GAF) component of the NPFMC's Catch Sharing Plan.

In a second survey, the CATCH research team tried to clearly define the goals of the CATCH concept as compared to GAF (see table C–1 summarizing the differences between the two programs). In this second survey, 57% of 93 respondents indicated "full support" for the CATCH concept while 16% indicated "no support" (17% neutral). At the two-day charter sector stakeholder workshop in March 2012, there was some initial skepticism, but in the end all 18 participants supported the CATCH concept.

3 The results are filtered to only include respondents who indicated that they conduct halibut guided fishing in Area 2C, Area 3A, or both 2C and 3A, in an attempt to exclude any non-charter operators that may have filled out the survey.

TABLE C–1: Difference Between GAF and CATCH

	GAF	CATCH
What?	Individual charter operators lease halibut quota from commercial fishermen, and sell it to clients who want to pay more for additional fishing opportunities.	An organization representing all guided anglers purchases halibut quota from commercial fishermen to supplement the charter angler annual allocation upon which halibut bag limits are based.
Who benefits?	Clients of charter operators can pay extra money to fish a GAF.	All guided anglers benefit equally.
How long?	Temporary lease (year-to-year)	Permanent transfer
Who pays?	Only those anglers who are fishing with a participating charter operator, and who wish to pay more.	Possibly all guided anglers pay a daily fee. Other funding sources are also being explored.
How much $?	Could cost $3 to $5 per pound.	A daily fee $10–$20
Limitations	GAF is limited, so only some charter operators will be able to offer this to clients. It could be quite expensive.	There is limited halibut quota available for purchase, so it may take a few years before benefits are realized.

Primary Concerns Raised by the Charter Sector

In the survey comments and in our communications with charter operators, the following primary concerns were raised:

- Frustration with the idea of having to pay commercial fishermen for access to fish that rightfully belongs to the public. From this perspective, the IFQ program gifted a public resource to a select group of individuals, and the CATCH project is proposing to "buy back" the publics' fish.
- Concern that by supporting the CATCH concept, the charter sector is irreversibly accepting the division between the guided sector and unguided sector that was imposed with the Guideline Harvest Level program, and which they considered unfair (i.e., imposing different regulations on anglers depending on how they access halibut).
- Complaints that regulators are unfairly targeting the charter sector, when the commercial sector is the cause of overfishing, especially trawlers responsible for bycatch. Many suggested this is because of the commercial sector's strong political power in comparison to the weak representation of the charter sector (e.g., only one charter sector representative sits on the NPFMC).
- Some charter operators also questioned the logistics of a guided angler pool plan, speculating that commercial fishermen will never sell to the charter sector, that there may not be enough quota on the market to make a difference, and that the program will be too expensive to administer.

Preference for a Halibut Stamp over a Self-Assessment Fee

In the surveys and meetings, there was opposition to any new fees imposed on the sector, and several suggested that this is something the federal government should pay for. However, if a fee were necessary, there was more support for a user fee based halibut stamp over a self-assessment fee.

In the first survey, just under 40% of 106 respondents indicated that they support or strongly support a halibut stamp, while just under 40% oppose or strongly oppose a halibut stamp (21% neutral). When asked about a charter assessment fee, 10% of 107 respondents indicated that they support or strongly support a charter assessment fee, while 74% oppose or strongly oppose it (16% neutral).

At the stakeholder workshop, 17 of 18 participants recommended a halibut stamp as the first choice for funding. 2 of 18 endorsed a charter fee if a halibut stamp was not possible, while 2 had mixed feelings about a charter fee, 3 did not like but wouldn't block, and 9 would veto a charter fee.

Other Results from the Charter Sector

In the first survey, 76% of 2C operators (54 respondents) stated that reductions in guided angler halibut limits have had a negative or strong negative impact on their business.

The first survey also tried to gather information on charter operators' access to the Internet, cell phones, and landlines to help understand the likelihood of success of certain reporting and monitoring systems. 79% of the respondents have Internet connectivity at some point during the day, while 15% have intermittent or infrequent Internet access, 6% no access, and 2% not sure. 69% of the respondents indicated having cell phone connectivity at some point every day, while 18% have intermittent access, 11% no access, and 1% unsure. 63% of the respondents have landline connectivity at some point every day, while 12% have intermittent access, 24% have no access, and 1% not sure.

Stakeholder Panel Recommendations to CATCH Board

On March 12–13, 2012, CATCH brought together 18 stakeholders for a two-day workshop in Sitka. The purpose of the meeting was to share information about the CATCH project to date with charter sector representatives, gather stakeholder input on different approaches for carrying out the plan, and solicit recommendations on the final CATCH design for the CATCH Board. The following summarizes the final recommendations made to the CATCH Board.

Holding Entity

- Develop a guided angler Recreational Quota Entity (RQE) that would be able to purchase, hold, sell, and lease commercial halibut quota shares (with the possibility of expanding its role at a later date as approved by an RQE Board of Directors).
- The RQE Board should manage both areas 2C and 3A in separate pools, and should have the authority to decide whether to transfer or lend money between the two areas.

Transfer and Purchase

- Transfer of quota shares should be two-way between the commercial industry and guided sector.
- Most, but not all, stakeholders recommended restrictions on the purchase of D class quota share, and all recommended keeping block designations. Everyone agreed that the proposed plan should not recommend any other restrictions such as caps, but should leave it open to discussion.
- The goal of the RQE should be to continue purchasing quota shares until a daily bag limit of two fish of any size is assured in both Area 2C and 3A, plus a reasonable buffer.
- In the event of excess allocation at the end of a recreational sport season, the excess should first be used as a buffer, and second be leased or "temporarily transferred" to the commercial sector for that year.

Measures for Dealing with Overharvest

- The charter sector should adopt conservative harvest measures to avoid harvesting over allocation, with the understanding that if these measures do not keep harvest within allocation, emergency season closures may be applied.

Accountability

- Develop an accurate and timely harvest data reporting system on par with the standards of the commercial IFQ fishery.
- The same accountability measures should be used for all fish, whether from the base allocation or the IFQ pool.
- Most stakeholders (with the exception of one) are in support of reporting the lengths of fish to improve accountability for the charter sector, with support for logbook and electronic reporting.

Funding

- Initial funding should be sought from all available means (state, federal and private loans) with preference given to a halibut stamp for guided anglers. There should be no planned end to collecting the funds.

GUIDED ANGLERS

Alaska's guided anglers are a disparate and geographically diverse community, with no obvious representative body or association. Given the complexity of reaching out to such a large and diverse group, and given the limited time and resources, the research team decided that the most efficient way to reach this group would be through an informal online questionnaire that charter operators could forward to their clients.

On July 3, 2012, the research team forwarded a guided angler survey to 501 charter permit holders, asking them to disseminate the survey by e-mail to their client lists, or to print copies and hand them out to their clients. Despite some potential bias in this approach, the research team decided it would still provide a valuable overview of guided angler preferences.

The objectives of the Guided Recreational Angler Survey were to:

- Reach out to guided anglers, a key stakeholder group, to raise awareness of the CATCH concept and give anglers an opportunity to provide feedback.
- Gain a better understanding of guided anglers' perspectives, preferences, and levels of support for the CATCH concept.

Summary of Results

- 491 people responded to the survey (both partial and complete responses).
- 97% were from out-of-state.
- 74% primarily fished in Area 2C; 6% in 3A; 5% both; and 15% not sure.
- At least 48% of the respondents have been fishing in Alaska in prior years, almost all fishing a mix of halibut and other species.

Do you Plan to Fish for Halibut in Alaska in the Future?

When asked if they plan to return to Alaska to fish for halibut using the services of a guide in the next 1–3 years, 69% selected yes, 27% not sure, and 4% no. 75 respondents provided comments, with 41% mentioning increasing restrictions as a deterrent to returning.

When asked if they would take a fishing trip to Alaska if they could keep at least one halibut per day of any size, of 425 responses, 65% selected yes, 15% no, and 20% not sure.

Funding

When asked how they felt about contributing to a fund to purchase halibut shares to benefit all guided anglers, of 422 respondents, 56% selected support or strongly support, 14% oppose or strongly oppose, and 30% neither support nor oppose.

When asked how much they would be willing to pay, 64% of 418 responses indicated that they would pay $10 or more per day. More specifically:

- 6% selected $30–50
- 20% selected $20–30
- 38% selected $10–20
- 22% selected less than $10
- 14% selected $0

Of the 61 comments, some suggested alternative approaches such as paying a flat fee (vs. per day), building the fee into the regular guided fee, or including the fee as part of the license. Around 25% referred to all the costs and fees that they already incur for fishing in Alaska. Many referred to the unfairness of paying commercial fishermen for a public resource. Others said that they would be willing to pay if they were guaranteed the opportunity to catch a reasonable size and number of halibut.

Level of Support for CATCH

When asked to rate their level of support for the CATCH concept, 63% said they support or strongly support the concept, 7% oppose or strongly oppose it, and 31% neither support nor oppose.

When asked for final comments on the project, many said they are considering fishing elsewhere given the growing restrictions and expense for halibut fishing in Alaska. Several of the respondents commented that the problem is not the recreational sector, but overfishing by the commercial sector.

TABLE C–2: Stakeholder Outreach Activities

OUTREACH TOOL	PURPOSE	AUDIENCE	STAKEHOLDER PARTICIPATION
Social Media: Website www.catchalaska.org Facebook Twitter	To share information about the project, with status updates and opportunities to provide feedback.	All stakeholders General public	• <500 unique visitors to the website between Nov. 2011 and Aug. 2013 • 7 Facebook Likes (Aug. 13, 2013) • 19 Twitter Followers (Aug. 13, 2013)
E-mail communications	Primary form of communications with stakeholders, used for invitations to meetings and presentations, to complete surveys, to participate on the Stakeholder Committee, and for general status updates.	Charter halibut permit holders Anyone interested could sign up to receive e-mails via a link on the CATCH website.	• Sent e-mails to 336 contacts (Nov. 22, 2011), 109 additional contacts (Dec. 5, 2011), and 236 contacts (Jan. 10, 2012) asking them to verify that they were charter halibut permit holders and would like to receive information about CATCH. • Invitation to Sacramento ISE with follow-up sent to 34 contacts (Dec. 15 and Jan. 10, 2012) • Stakeholder committee solicitation sent to 484 contacts (Feb. 2, 2011) • Press release about stakeholder meeting sent to 493 contacts (Mar. 15, 2012) • Survey #1 sent to 500 contacts (Feb. 26, 2012) • Survey #2 sent to 501 contacts (July 4, 2012); resent (July 11, 2012) and again (Sept. 11, 2012)
MEETINGS/PRESENTATIONS			
Summer 2011 Outreach Tour	To inform stakeholders of the general concept of the pool plan, receive input, and solicit ideas.	Charter halibut permit holders Commercial Fishermen and associations Anyone interested	Multiple group and individual meetings were held in: • Ketchikan (~30 participants) • Prince of Wales Island (~6 participants) • Petersburg (~12 participants) • Sitka (~35 participants) • Juneau (~20 participants) • Homer (~48 participants)
Webinar and online forum	To provide another opportunity to learn about the project and provide input for those that were unable to attend the summer outreach tour.	All stakeholders	No attendance.
NPFMC meeting Dec. 2011	General update for NPFMC members	NPFMC members All stakeholders in attendance	At the invitation of the NPFMC, CATCH presented an update on our research.
NPFMC meeting Mar. 2012	General update for NPFMC members	NPFMC members All stakeholders in attendance	At the invitation of the NPFMC, CATCH presented an update on our research.

TABLE C–2: Stakeholder Outreach Activities (continued)

OUTREACH TOOL	PURPOSE	AUDIENCE	STAKEHOLDER PARTICIPATION
ISE (International Sportsmen's Exposition)	To present CATCH concept and overview of halibut regulations with Q&A.	Charter halibut permit holders	10 participants.
Kodiak Association of Charterboat Operators (KACO)	To inform stakeholders of the general concept of the pool plan, receive input, and solicit ideas.	Charter halibut permit holders	Presented CATCH to KACO participants that were unable to attend summer outreach presentations. 25 participants.
MEETINGS			
Halibut Coalition, Jan. 26, 2012	To inform stakeholders of the general concept of the pool plan, receive input, and solicit ideas.	Commercial fishermen	6 individuals, representing 13 member organizations and more than 500 individual members.
Halibut Coalition, April 24, 2012	To discuss progress of CATCH project and get additional feedback from commercial industry representatives.	Commercial fishermen	3 individuals representing 13 member organizations and more than 500 individual members.
Sitka Stakeholder Workshop	To share information about CATCH project, gather stakeholder input on different approaches for carrying out the plan, and solicit recommendations on the final design for the CATCH Board.	Charter halibut permit holders and charter association representatives.	18 charter sector stakeholders: 10 from Area 2C and 8 from Area 3A, with a good mix of business models, geography, and levels of experience. 4 participants attended on behalf of an association. Also in attendance was a NPFMC staff representative and an ADF&G representative.
PRESS COVERAGE			
Radio, newspaper interviews	To raise awareness of the CATCH project and upcoming presentations and talks; to keep stakeholders up-to-date on our progress.	All stakeholders General public	Early in the project, CATCH participated in three radio interviews, two local newspaper interviews, and an interview with the statewide "Alaska Journal of Commerce." Articles Jenson, Andrew. 2011. Charter operators explore plan to purchase pool of quota. Alaska Journal of Commerce. August 12, 2011. Accessed at: http://alaskajournal.com/stories/081211/fis_coeptp.shtml Johnson, Terry (ed). 2011. Grant Awarded for Catch Share Planning. The Charter Log: A Newsletter for Charter Boat Operators, Fishing Guides and Sport Fishermen in Alaska. Summer 2011. Accessed at: http://seagrant.uaf.edu/map/charterlog/2011/summer.php Press Releases November 2, 2011: CATCH Hires New Director http://www.catchalaska.org/news-updates/catchprojecthiresnewprojectdirector March 15, 2012: Sitka Stakeholder Workshop http://www.catchalaska.org/news-updates/press-release-march-stakeholders

TABLE C–3: Stakeholder Feedback on Specific Design Elements of the Guided Angler Pool Plan

	CHARTER SECTOR STAKEHOLDER PANEL	COMMERCIAL FISHERMAN	FEEDBACK FROM SURVEYS & OTHER
HOLDING ENTITY			
Guided Angler Quota Share Holding Entity	Develop a guided angler Recreational Quota Entity (RQE) that would be able to purchase, hold, sell, and lease commercial halibut quota shares (with the possibility of expanding its role at a later date as approved by an RQE Board of Directors). One Board should manage both areas 2C and 3A in separate pools, and should have the authority to decide whether to transfer or lend money between the two areas. One entity, but separate accounting.	No comment.	N/A
QUOTA TRANSFER MECHANISMS			
Goal of project (1 fish, 2 fish, etc.)	The goal of the RQE should be to continue purchasing quota shares until a daily bag limit of two fish of any size is assured, plus a reasonable buffer.	Concerned with goal of 2 fish, which they worry may take over the entire commercial fishery.	65% of guided anglers said they would be willing to take a fishing trip in Alaska if they could keep at least one halibut per day of any size. 20% not sure. 15% No.
One or two-way transfer?	Transfer of quota shares should be two-way between the commercial industry and charter sector.	Want a mechanism in place that will allow purchased quota shares to eventually return to the commercial industry.	N/A
Vessel Category/Class Restrictions and blocks	Most, but not all, stakeholders recommended restrictions on the purchase of D class quota share, and all recommended keeping block designations, but the block designation should not limit the size of charter vessels upon which these IFQs could be fished.	There are deck hands that are entry level in B and C class, and they are not accommodated by a protection of D class. The program is at a point where it needs caps on each class, e.g., you can only buy up to so much C class, so much D class, so much B class in a year, or in total of X amount. A class shares are not appropriate.	N/A
Total Annual Caps	All stakeholders agreed that the proposed plan should not recommend any restrictions such as caps, but should leave it open to discussion.	Preference for an overall cap on how much quota can be transferred, as well as a cap on each class.	N/A

TABLE C–3: Stakeholder Feedback on Specific Design Elements of the Guided Angler Pool Plan (continued)

	CHARTER SECTOR STAKEHOLDER PANEL	COMMERCIAL FISHERMAN	FEEDBACK FROM SURVEYS & OTHER
Overharvest	Charter sector should adopt conservative harvest measures to avoid over harvesting allocation, with the understanding that if these measures do not keep harvest within allocation, emergency season closures may be applied.	Not discussed.	Charter survey #1: Q15,16 93% oppose or strongly oppose in-season closures. 52% oppose or strongly oppose in-season adjustments to bag limits. NPFMC staff said in-season closures have never been suggested for federal management of this fishery.
Underharvest	The excess should first be used as a buffer, and second be leased or "temporarily transferred" to the commercial sector for that year.	The commercial representatives are curious with what the charter sector plans to do with excess quota. The charter sector doesn't need quota every year, only years of extreme low abundance, and holding quota when not needed hurts both sectors.	N/A
ACCOUNTABILITY			
Data collection and reporting	Develop an accurate and timely harvest data reporting system on par with the standards of the commercial IFQ fishery. The same accountability measures should be used for all fish, whether from the base allocation or the IFQ pool. Most stakeholders (with the exception of one) are in support of measuring lengths of fish to improve accountability for the charter sector, with support for logbook and electronic reporting.	Expressed desire to see better accountability among charter operators.	Charter sector survey #1 At some point every day: 76% have Internet connectivity, 69% have cell connectivity, and 63% have landline connectivity. Many out at sea—can't go online daily Don't want to lose laptop at sea At least one preference for weighing fish. At stakeholder NPMFC staff reminded group that agencies would dictate reporting requirements.
FUNDING			
State, Federal, Private Loans, other	Initial funding should be sought from all available means (state, federal and private loans)	Suggested CATCH look into the Alaska Sustainable Fisheries Trust loan program.	Airlines and others should contribute funds. Grants through state and feds. CATCH could sponsor derbies, raffles, auctions.

TABLE C–3: Stakeholder Feedback on Specific Design Elements of the Guided Angler Pool Plan (continued)

	CHARTER SECTOR STAKEHOLDER PANEL	COMMERCIAL FISHERMAN	FEEDBACK FROM SURVEYS & OTHER
Halibut Stamp	Stakeholder preference is for a halibut stamp for guided anglers. There should be no planned end to collecting the funds.	Opposition to a halibut stamp. Concern that small-scale fishermen will not be able to compete with this collective body of wealthy clients. Concern that there's no incentive to end the program, even though you may have enough money and quota built up. Also, halibut stamp is run through the federal government and it isn't something you can turn on and off.	Charter Survey #1 40% support or strongly support halibut stamp; 40% oppose or strongly oppose it. 29% think customers would support or strongly support halibut stamp; 44% think customers would oppose or strongly oppose it. Guided Angler Survey 56% support or strongly support paying a fee; 14% oppose or strongly oppose. 64% would pay $10 or more per day. Other suggestions Flat fee not daily 2 year trial Build fee into regular guide fee Concerns I shouldn't have to pay for a public resource. I already spend too much money. Should already be covered by fishing license.
Self-assessment Tax	Discussion of charter fee if halibut stamp is not possible (2 endorse, 2 mixed feelings, 3 don't like but won't block, and 9 veto)	Strong preference for a self-tax on charter operators so that commercial and charter operators are competing at the same level and face the same risks. With a self-assessment tax you know that the charter operator is not going to build a larger pool of money than needed, because it's coming out of their pockets. They'll be more responsible with the money and think in the long-term. Suggestion that charter operators look at state model of self-assessment taxes.	Charter Survey #1 74% oppose or strongly oppose a self-assessment fee.
OTHER			
Buy back charter halibut permits	Stakeholders agreed to table the discussion on charter halibut permit buyback and let the CATCH Board determine its appropriateness.	Urged CATCH to focus on buying latent permits to reduce number of operators in the business.	Charter Survey #1 At least one made this suggestion

Appendix D

DIFFERENT OPTIONS FOR CALCULATING TOTAL CAPS

Option One: Total Cap based on the Highest Historic Harvest by Guided Anglers

This option arrives at a total cap based on the highest guided harvest in the past measured in pounds of fish using charter log book data. In Area 2C, the highest harvest was in 2006 at 2.063 million pounds. In Area 3A, the highest harvest was in 2006 at 4.689 million pounds.

Option 2: Total Cap based on Historic Highest Harvest Potential

Option two sets a total cap based on a potential harvest using the highest angler effort in the past, expressed in numbers of fish, multiplied by an average weight of fish. According to the Alaska Department of Fish and Game Charter Log Book records, the highest number of fish caught and retained (angler effort) in Area 2C was in 2007, at 120,385 fish. The years used for an average fish weight were from 1995 to 2006, the years guided anglers were managed under a two fish of any size bag limit (Meyer 2013b). The average weight of a fish was 19.66 pounds.

120,385 fish x 19.66 pounds/fish = 2.367 million pounds

For Area 3A, according to the Alaska Department of Fish and Game Charter Log Book records, the highest number of fish caught and retained was in 2006, at 265,887 fish. The years used for an average fish weight were from 1995–2013, when guided anglers were managed under a two fish of any size bag limit.[4] The average weight of a fish was 17.96 lb.

265,887 fish x 17.96 pounds/fish = 4.775 million pounds

OPTION THREE: Total Caps Based on a Percentage of CSP Combined Catch Limits

AREA 2C TOTAL CAP BASED ON CHARTER HARVEST IN 2010 AS A PERCENTAGE OF COMBINED CATCH LIMITS (LAST YEAR AREA 2C MANAGED UNDER A ONE FISH RULE)

YEAR	TOTAL CEY	OTHER REMOVALS	COMBINED CATCH LIMIT	CSP CHARTER ALLOCATION	2010 CHARTER HARVEST* (MLB.)	2010 CHARTER % OF CCL
2010	5.020	1.842	3.178	18.3%	1.249	**39%**

*Logbook Data, Meyer Oct. 2013

AREA 3A TOTAL CAP AS A PERCENTAGE OF CCL AT LOW ABUNDANCE LEVELS TO MAINTAIN A TWO FISH OF ANY SIZE BAG LIMIT

YEAR	2014 PROJECTED YIELD AND TOTAL REMOVALS* (MLB.)	2014 BLUE LINE GUIDED ALLOCATION (MLB.)	2014 COMBINED CATCH LIMITS (MLB.)	CSP CHARTER ALLOCATION PERCENTAGE	PROJECTED HARVEST AS A PERCENTAGE OF 2014 CCL
2014	2.543	1.78	9.43	18.90%	**27%**

*Source: Meyers Oct. 2013, CMIC Handout.

Note: 2014 will be the first time Area 3A will face a reduction in bag limits. At the time of this report, only preliminary IPHC data was available as a basis for this analysis.

4 1998 is excluded from this average because of ADF&G errors in average fish size calculations.

Appendix E

DIFFERENT OPTIONS FOR CALCULATING ANNUAL CAPS

Option 1: Percentage of the Average Amount of Historical Quota Share Transfers (2008–2012)

Table E-1 examines annual caps as 30 to 50% of the average amount of quota share transferred from 2008–2012 (these percentages were taken from the NPFMC's 2007 analysis of an annual cap). Table E-1 lists two options: 1) annual caps if the holding entity is only allowed to purchase B and C shares (no D shares); and 2) annual caps if the holding entity is allowed to purchase B, C and D shares. The results show that based on a 30–50% annual cap on historical transfers, with a restriction on D shares:

- Area 2C could transfer between 48,000 and 80,000 pounds each year.
- Area 3A could transfer between 116,000 pounds and 194,000 pounds each year.

With no restriction on D shares:

- Area 2C could transfer between 65,000 and 108,000 pounds each year.
- Area 3A could transfer between 131,000 and 218,000 pounds each year.

TABLE E–1: Transfer of IFQ Pounds by Class

YEAR OF AVERAGE	B& C IFQ POUNDS TRANSFERRED		B, C & D IFQ POUNDS TRANSFERRED	
	AREA 2C	AREA 3A	AREA 2C	AREA 3A
2008	332,199	786,937	399,936	891,174
2009	144,337	331,961	179,768	361,658
2010	207,905	401,199	277,104	454,749
2011	40,033	290,751	50,948	311,297
2012	76,780	129,096	174,645	163,182
Total	**801,253**	**1,939,943**	**1,082,401**	**2,182,060**
Annual Average (2008–2012)	160,251	387,989	216,480	436,412
30% of Average	48,075	116,397	64,944	130,924
50% of Average	80,125	193,994	108,240	218,206

Source: http://alaskafisheries.noaa.gov/ram/transfers/halibut_transfer_report/halibut_three.pdf

Based on the CATCH transfer need estimates described earlier,[5] and using data from table E–2, as well as a number of assumptions (e.g., the CATCH entity has the funding to purchase the full amount and there are no other restrictions), then table E–2 estimates how many years it would take the CATCH entity to meet its transfer objectives at 30% and 50% of historical transfers. In sum, in Area 2C it would take between 5 and 12 years to transfer 587,000 lb. In Area 3A, it would take between 4 and 7 years to transfer 785,000 lb. of quota share.

TABLE E–2: Number of Years Needed to Transfer Quota Share to meet CATCH Objectives Based on Annual Cap Percentages

	IF D SHARES ARE PROHIBITED		IF D SHARES ARE NOT PROHIBITED	
UNDER CSP MANAGEMENT	AREA 2C	AREA 3A	AREA 2C	AREA 3A
30% cap	12 yrs.	7 yrs.	9 yrs.	6 yrs.
50% cap	7 yrs.	4 yrs.	5 yrs.	4 yrs.

Option 2: Annual Caps of 1.5% , 2% and 3% of Total Commercial Quota Shares (based on the average from 2011 to 2013—recent years of low abundance).

Annual caps can also be calculated as a percentage of total commercial quota shares (instead of a percentage of historical annual transfers).

Table E–3 shows that with annual caps of 1.5% , 2% and 3% , Area 2C would be able to transfer between 56,850 and 113,700 pounds of quota share per year. This would amount to between 35% and 71% of all B and C transfers (no D shares); or between 26% and 53% of all B, C and D shares each year. It would take Area 2C around 5 to 10 1/2 years to reach its goal of 587,000

TABLE E–3: Area 2C Annual Caps Based on Percentages of Total Available Quota Share

ANNUAL CAP (% OF AVAILABLE QUOTA)*	ANNUAL CAP (LB.)	YEARS TO GOAL OF 587,000 LB.**	% ANNUAL B & C TRANSFERS***	% ANNUAL B, C, & D TRANSFERS****
1.50%	56,850	10.3	35%	26%
2.00%	75,800	7.7	47%	35%
3.00%	113,700	5.2	71%	53%

*Based on Average combined catch limits 2008–2012=3.79 Mlb.

**May require less time if abundance continues to increase

***5 Year Average B & C Transfers (2008–12)=160,251 lb.

****5 Year Average B, C, & D Transfers (2008–12)=216,480 lb.

5 To reach CATCH bag limit objectives during times of low abundance, in Area 2C, the CATCH entity would need to transfer an estimated 587,000 pounds. Area 3A would need to transfer an estimated 785,000 pounds.

Table E–4 shows annual caps of 1.5% , 2% and 3% , Area 3A would be able to transfer between 105,353 and 316,059 pounds of quota share per year. This would amount to between 27 and 81% of all B and C transfers (no D shares); or between 24 and 72% of all B, C and D shares each year. It would take Area 3A around 2 1/2 to 7 1/2 years to reach its goal of 785,000.

TABLE E–4: Area 3A Annual Caps Based on Percentages of Total Available Quota Share

ANNUAL CAP (% OF AVAILABLE QUOTA)*	ANNUAL CAP (LB.)	YEARS TO GOAL OF 785,000 LB.**	% ANNUAL B & C TRANSFERS***	% ANNUAL B, C, & D TRANSFERS****
.50%	105,353	7.5	27%	24%
1.0%	210,706	3.7	54%	48%
1.5%	316,059	2.5	81%	72%

*Based on Average Combined Catch Limits 2008–2012=21,070,600 lb.

** May take more years if abundance continues to decline

*** 5 Year Average B & C Transfers (2008–12)=387,989 lb.

**** 5 Year Average B, C, & D Transfers (2008–12)=436,412 lb.