

**Review of Laws, Guidance, Technical Memorandums, and Case Studies
Related to Fisheries Allocation Decisions**

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Acronyms

CBA	Cost benefit analyses
CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
EIS	Economic Impact Analyses
EOI	Expression of Interest Form
FMP	Fishery Management Plan
FWC	Oregon Fish and Wildlife Commission
GOM	Gulf of Mexico
IFQ	Individual Fishing Quota
IPHC	International Pacific Halibut Commission
ITQ	Individual Transferable Quota
LAPP	Limited Access Privilege Program
MSA	Magnuson-Stevens Fishery Conservation and Management Act of 2007
MSC	Marine Stewardship Council
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS1	National Standard 1
NS4	National Standard 4
NS5	National Standard 5
NS8	National Standard 8
OY	Optimum yield

1.0 Introduction

Allocation is defined by the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) as "a direct and deliberate distribution of the opportunity to participate in a fishery among identifiable, discrete user groups or individuals" (50 CFR 600.325). Allocation can be across jurisdictions (e.g., international, state, regional), across sectors (e.g., commercial, recreational, tribal, research), and within sectors (e.g., individual fishermen, gear types). Allocation of fishery resources is one of the toughest issues facing fishery managers because of the economic value associated with access to fishery resources, the history and tradition of access to fishery resources, and the perceptions of winning, losing, and fairness that arise with allocation decisions. Recent requirements in fisheries management, such as implementing annual catch limits and accountability measures, has renewed interest in developing and exploring federal fisheries management options regarding allocation of fish among different segments of a fishery.

NMFS initiated a review of a wide range of allocation issues and contracted with George Lapointe Consulting LLC to conduct a series of interviews with stakeholders and managers and produce a report. The report summarized current perceptions on allocation decisions in fisheries management (see Section 6.1), and concludes with a list of five actions that could be taken to improve the allocation process, including compiling a list of allocation decisions (management and court decisions). In this paper, we compile relevant court decisions (Section 8) and summarize fishery regulations that create or modify commercial and recreational allocations (Appendix 1) or catch share program allocations (Appendix 2). In addition, this paper identifies the current guidance and policies related to fishery allocation in the United States, and provides examples of what states and other countries have done to successfully tackle allocation issues. Given the significant amount of information contained in this paper, summaries are provided at the beginning of each section.

2.0 Magnuson-Stevens Fishery Conservation and Management Act (MSA), May 2007

http://www.nmfs.noaa.gov/msa2005/docs/MSA_amended_msa%2020070112_FINAL.pdf

Allocation is addressed throughout the MSA, most significantly in national standards 1 (NS1), 4 (NS4), 5 (NS5), and 8 (NS8), which deal with allocations, economic efficiency, and communities, respectively. Outside of the national standards, MSA section 303A on Limited Access Privilege Programs (LAPPs) includes multiple requirements that apply to LAPP allocation decisions. Because LAPPs (a type of catch share program) allocate a portion of the catch to individual fishermen or groups of fishermen, the MSA outlines requirements for determining who is eligible for quota and how much quota they receive. Outside these two sections, a few other references to allocation are detailed below.

2.1 National Standard 1(Section 301(a)(1))

"Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry."

2.2 National Standard 4(Section 301(a)(4))

"Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote

conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.”

2.3 National Standard 5(Section 301(a)(5))

“Conservation and management measures shall, where practicable, *consider*¹efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.”

2.4 National Standard 8(Section 301(a)(8))

“Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.”

2.5 Limited Access Privilege Programs (LAPP)

Requirements for initial allocations (Section 303A(c)(5))

“In developing a limited access privilege program to harvest fish a Council or the Secretary shall—

(A) establish procedures to ensure fair and equitable initial allocations, including consideration of— (i) current and historical harvests; (ii) employment in the harvesting and processing sectors; (iii) investments in, and dependence upon, the fishery; and (iv) the current and historical participation of fishing communities;

(B) consider the basic cultural and social framework of the fishery, especially through— (i) the development of policies to promote the sustained participation of small owner-operated fishing vessels and fishing communities that depend on the fisheries, including regional or port-specific landing or delivery requirements; and (ii) procedures to address concerns over excessive geographic or other consolidation in the harvesting or processing sectors of the fishery; (C) include measures to assist, when necessary and appropriate, entry-level and small vessel owner-operators, captains, crew, and fishing communities through set-asides of harvesting allocations, including providing privileges, which may include set-asides or allocations of harvesting privileges, or economic assistance in the purchase of limited access privileges;

(D) ensure that limited access privilege holders do not acquire an excessive share of the total limited access privileges in the program by—(i) establishing a maximum share, expressed as a percentage of the total limited access privileges, that a limited access privilege holder is permitted to hold, acquire, or use; and (ii) establishing any other limitations or measures necessary to prevent an inequitable concentration of limited access privileges; and

(E) authorize limited access privileges to harvest fish to be held, acquired, used by, or issued under the system to persons who substantially participate in the fishery, including in a specific sector of such fishery, as specified by the Council.”

Authorization of the use of Auctions (Section 303A(d))

“In establishing a limited access privilege program, a Council shall consider, and may provide, if appropriate, an auction system or other program to collect royalties for the initial, or any subsequent, distribution of allocations in a limited access privilege program if—

(1) the system or program is administered in such a way that the resulting distribution of limited access privilege shares meets the program requirements of this section; and (2) revenues generated through

¹In 1996 national standard 5 wording was changed from “promote efficiency” to “consider efficiency.”

such a royalty program are deposited in the Limited Access System Administration Fund established by section 305(h)(5)(B) and available subject to annual appropriations.”

Authorization of allocations to fishing communities (Section 303A(c)(3))

“To be eligible to participate in a limited access privilege program to harvest fish, a fishing community shall—(I) be located within the management area of the relevant Council; (II) meet criteria developed by the relevant Council, approved by the Secretary, and published in the Federal Register; (III) consist of residents who conduct commercial or recreational fishing, processing, or fishery-dependent support businesses within the Council’s management area; and (IV) develop and submit a community sustainability plan to the Council and the Secretary that demonstrates how the plan will address the social and economic development needs of coastal communities, including those that have not historically had the resources to participate in the fishery, for approval based on criteria developed by the Council that have been approved by the Secretary and published in the Federal Register.”

2.6 Other Applicable Sections

Section 303(a)(14) stipulates that, when harvest reductions are required, the harvest restrictions and recovery benefits must be allocated “fairly and equitably among the commercial, recreational and charter fishing sectors.”

Section 304(e)(4)(B) provides that rebuilding programs must allocate “overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery.”

Section 303(b)(6) provides that a Council may establish a “limited access system” provided that it takes into account present and historical participation in the fishery, dependence on the fishery, the economics of the fishery, the capability of the vessels to engage in other fisheries, the cultural and social framework relevant to the fishery and the fair and equitable distribution of access privileges.

Section 303(b)(11) authorizes setting aside a portion of the total quota “for use in scientific research.”

3.0 NMFS National Standard Guidance

NMFS provides official guidance on the MSA to clarify NMFS’ interpretation of the law, including each of the 10 national standards. Guidance for NS1, NS4, and NS5 has not been updated since 1998, but guidance on NS8 was updated in 2008.

3.1 NS1 Guidance

(50 CFR 600.310)

Excerpts are provided below; for the full guidance go to:

http://edocket.access.gpo.gov/cfr_2010/octqtr/pdf/50cfr600.310.pdf.

- “The determination of OY [optimum yield] is a decisional mechanism for resolving the MSA’s conservation and management objectives, achieving a fishery management plan’s (FMP) objectives, and balancing the various interests that comprise the greatest overall benefits to the Nation.”
- MSA defines optimum as “the amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor...”

- “In determining the greatest benefit to the Nation, the values that should be weighed and receive serious attention when considering the economic, social, or ecological factors used in reducing MSY to obtain OY are:
 - (A) The benefits of food production are derived from providing seafood to consumers; maintaining an economically viable fishery together with its attendant contributions to the national, regional, and local economies; and utilizing the capacity of the Nation's fishery resources to meet nutritional needs.
 - (B) The benefits of recreational opportunities reflect the quality of both the recreational fishing experience and non-consumptive fishery uses such as ecotourism, fish watching, and recreational diving. Benefits also include the contribution of recreational fishing to the national, regional, and local economies and food supplies.
 - (C) The benefits of protection afforded to marine ecosystems are those resulting from maintaining viable populations (including those of unexploited species), maintaining adequate forage for all components of the ecosystem, maintaining evolutionary and ecological processes (e.g., disturbance regimes, hydrological processes, nutrient cycles), maintaining the evolutionary potential of species and ecosystems, and accommodating human use.”
- “To the extent possible, the relevant social, economic, and ecological factors used to establish OY ... should be quantified and reviewed in historical, short-term, and long-term contexts. Even where quantification of social, economic, and ecological factors is not possible, the FMP still must address them in its OY specification. “
- “There should be a mechanism in the FMP for periodic reassessment of the OY specification, so that it is responsive to changing circumstances in the fishery.”
- “A Council may, but is not required to, divide an ACL into sector-ACLs. “Sector,” for purposes of this section, means a distinct user group to which separate management strategies and separate catch quotas apply. Examples of sectors include the commercial sector, recreational sector, or various gear groups within a fishery...”
- “Council action addressing an overfished fishery must allocate both overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery.”
- “National Standard 8 directs the Councils to apply economic and social factors towards sustained participation of fishing communities and to the extent practicable, minimize adverse economic impacts on such communities within the context of preventing overfishing and rebuilding overfished stocks as required under National Standard 1. Therefore, calculation of OY as reduced from MSY should include economic and social factors, but the combination of management measures chosen to achieve the OY must principally be designed to prevent overfishing and rebuild overfished stocks.”

3.2 NS4 Guidance (last updated May 1998)

(50 CFR 600.325)

Excerpts are provided below; for the full guidance go to:

http://edocket.access.gpo.gov/cfr_2010/octqtr/pdf/50cfr600.325.pdf.

Fairness and equity:

- “An allocation of fishing privileges should be rationally connected to the achievement of OY or with the furtherance of a legitimate FMP objective. Inherent in an allocation is the advantaging of one group to the detriment of another. The motive for making a particular allocation should

be justified in terms of the objectives of the FMP; otherwise, the disadvantaged user groups or individuals would suffer without cause.”

- “An allocation of fishing privileges may impose a hardship on one group if it is outweighed by the total benefits received by another group or groups. An allocation need not preserve the status quo in the fishery to qualify as ‘fair and equitable,’ if a restructuring of fishing privileges would maximize overall benefits. The Council should make an initial estimate of the relative benefits and hardships imposed by the allocation, and compare its consequences with those of alternative allocation schemes, including the status quo.”

Promotion of conservation:

“An allocation scheme may promote conservation by encouraging a rational, more easily managed use of the resource. Or, it may promote conservation (in the sense of wise use) by optimizing the yield in terms of size, value, market mix, price, or economic or social benefit of the product.”

Other factors:

In designing an allocation scheme, a Council should consider other factors relevant to the FMP's objectives. Examples are economic and social consequences of the scheme, food production, consumer interest, dependence on the fishery by present participants and coastal communities, efficiency of various types of gear used in the fishery, transferability of effort to and impact on other fisheries, opportunity for new participants to enter the fishery, and enhancement of opportunities for recreational fishing.

3.3 NS5 Guidance (last updated May 1998)

(50 CFR 600.335)

Excerpts are provided below; for the full guidance go to:

http://edocket.access.gpo.gov/cfr_2010/octqtr/pdf/50cfr600.330.pdf.

- “Given a set of objectives for the fishery, an FMP should contain management measures that result in as efficient a fishery as practicable or desirable.”
- “In theory, an efficient fishery would harvest the OY with the minimum use of economic inputs such as labor, capital, interest, and fuel. Efficiency in terms of aggregate costs then becomes a conservation objective, where “conservation” constitutes wise use of all resources involved in the fishery, not just fish stocks.”

3.4 NS8 Guidance (last updated Nov 2008)

(50 CFR 600.345)

Excerpts are provided below; for the full guidance go to:

http://edocket.access.gpo.gov/cfr_2010/octqtr/pdf/50cfr600.345.pdf.

- “A discussion of social and economic impacts should identify those alternatives that would minimize adverse impacts on these fishing communities within the constraints of conservation and management goals of the FMP, other national standards, and other applicable law.”
- “This standard does not constitute a basis for allocating resources to a specific fishing community nor for providing preferential treatment based on residence in a fishing community.”
- “FMPs must examine the social and economic importance of fisheries to communities potentially affected by management measures.”
- “Impacts of both consumptive and non-consumptive uses of fishery resources should be considered.”

4.0 NOAA Catch Share Policy (November, 2010)

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

The 2010 NOAA Catch Share Policy provides guidance on making initial allocation decisions for catch share fisheries. In addition, the policy states all allocation decisions should be revisited on a regular basis whether under a catch share program or other management approach. “Catch shares” is a general term for management strategies that dedicate a secure share of the total allowable catch to individual fishermen, cooperatives, fishing communities, or other entities. Allocations are discussed throughout the Catch Share Policy; excerpts are presented below.

- “For all fishery management programs, including catch shares, the underlying harvest allocations to specific fishery sectors (e.g., commercial and recreational) should be revisited on a regular basis, and the basis for the allocation should include consideration of conservation, economic, and social criteria used in specifying optimum yield and in furtherance of the goals of the underlying FMP.”
- “NOAA will work with Councils and stakeholders to review guidance to ensure allocations result in the greatest overall benefit to the Nation, including the evaluation of biological, economic and social criteria in such decision making. In existing catch share programs this evaluation of allocations should be part of the MSA-mandated 5-year review. For new catch share programs this evaluation of allocations should precede the final design and distribution of catch shares...”
- “Councils also should link their allocation decisions to the attainment of their goals for new entrants, adaptive management, and the desired distribution of future benefits, especially if their fisheries are undergoing rebuilding.”
- “The approval of a new catch share plan does not impede or preclude a subsequent adjustment in the underlying allocation to the various sectors in the fishery.”
- “Councils should consider allowing the inter-sector transferability of catch share privileges to respond to changes in demand and promote future access opportunities wherever catch share privileges are used in multi-sector fisheries.”
- “NOAA will support the design and implementation of catch share programs for the commercial and recreational charter and head boat sectors as appropriate, but does not advocate the use of individual private angler catch shares.”
- “Councils are advised to consider a broad range of participation criteria to ensure the most fair and equitable catch share distribution for their given circumstances. In addition to a historical landings criterion, some part of the allowable catch could be allocated equally among participants, some part may be auctioned, and/or some part may be reserved or set aside for special purposes. In some of Australia’s catch share programs an independent third-party derives the allocation formula for the fishery to promote fairness.”
- “Catch share programs provide new means for engaging communities directly through allocation of catch shares using fishing communities, regional fishing associations and catch share set-aside provisions.”

5.0 Recreational Action Agenda (October 2010)

<http://www.nmfs.noaa.gov/sfa/PartnershipsCommunications/recfish/2010RecfishActionAgenda.pdf>

In April 2010 NMFS hosted a recreational saltwater fishing summit, and soon after presented the National Recreational Saltwater Fishing Action Agenda (Action Agenda) in response to concerns raised during the summit. Fishermen asked for NMFS to focus on management that understands the distinct needs of recreational fishermen, including improved access, more time on the water, and quality fishing experiences. Within the Action Agenda, NMFS committed to “develop policy guidance and identify data

needs for fishery management councils regarding allocation.” In addition, under engagement actions, NMFS committed to initiating a review of allocation process and goals and providing economic data suitable for managers to evaluate allocation and regulatory decisions. The Lapointe report (see section 6.1 below) was developed in response to these commitments.

6.0 Lapointe, GD. 2012. Marine Fisheries Allocation Issues: Findings, Discussions and Options. George Lapointe Consulting LLC. 58 pgs External Assessment Completed for NMFS (December 2012)

In this report, George Lapointe summarizes 114 interviews he completed with a variety of stakeholders about allocation issues. Respondents’ answers mainly reflect their personal allocation experiences, resulting in variable responses. The report shows that allocation includes a suite of extremely difficult issues, with little consensus or common vision on how to proceed. Widely divergent views of the respective roles of the Councils and NMFS were expressed by respondents. In addition, stakeholders come from different starting places and are not using a common vocabulary. Stakeholder interpretation of “fair and equitable” varies and could include: maintenance of status quo allocation provisions, a shift from commercial to recreational fisheries, a shift from small boats to big boats, a shift among states, or some other measure of fairness and equity. The interviews suggest that many stakeholders will continue to view allocation systems as unbalanced or unfair unless the outcomes are close to the positions they seek. The perceived permanence of allocation decisions is also a contentious issue. In his conclusions, Lapointe states that most managers and stakeholders favor an allocation process that is more efficient and understandable than the current one. The report suggests five steps NMFS can take to address allocation issues:

- 1) Increase stakeholder engagement in allocation decisions
- 2) Increase biological and social science research and data
- 3) Review allocation decisions
- 4) Compile a list of past allocation decisions
- 5) Create a list of issues to consider when making allocation decisions

7.0 NMFS Technical Memorandums

Five NMFS technical memorandums provide guidance on making allocation decisions. Discussions center around three main topics—economics, fairness, and catch shares—with some documents covering more than one topic.

Economic

There are two main types of economic analyses: cost benefit analyses (CBA) and economic impact analyses (EIA). CBAs estimate how a proposed regulation would impact consumer and producer surplus and thus determines “whether resources are being efficiently allocated” (NMFS, 1996).² Comparatively, EIAs examines potential impacts of the proposed regulation on sales, income, value added, and employment in the various sectors of a regional, state, or local economy, including the fishing sectors.³

²NMFS. 1996. A primer. Chapter 1 in: Our Living Oceans. The Economic Status of U. S. Fisheries, 1996. NOAA Tech Memo NMFS F/SPO-22.

³For example, suppose the black sea bass recreational fishery closes and all recreational fishermen shift their effort to summer flounder. EIA would show little impact, as expenditures on recreational fishing have not changed. CBA would account for the lost opportunity to fish black sea bass. Another example of the difference between the two

The tech memos that discuss economic efficiency recommend using a CBA that calculates willingness to pay in each sector of the fishery to determine the allocation that gives the greatest net economic benefit to the nation. While the method is straightforward, the data requirements are great, and calculations based on limited data produce results with large uncertainty. A new CBA for recreational fisheries has been developed that uses a bioeconomic model that combines information on the biological stock structure, historical catch-at-length data, and angler choice (via a recreational choice survey). Results are promising, but the method is still data-demanding and expensive to implement.⁴

Fairness

Discussions of fairness and equity are limited because both terms are open to interpretation. What is considered fair and equitable may not be the same between groups or between individual fishermen. Therefore, all documents recommend creating as clear and open a process as possible.

Catch Shares

The guidance on initial allocations within catch share programs is similar across documents. Allocations can be divided into three parts: determining eligibility, calculating individual or group allocations, and creating accumulation limits.

7.1 Plummer, M.L., Morrison, W., and E. Steiner. 2012. The Allocation of Fishery Harvests under the Magnuson-Stevens Fishery Conservation and Management Act: Principles and Practice. U.S. Department of Commerce, NOAA Tech. Memo NMFS-NWFSC-115, 84 p

This is a recent (2012) report on the economic analyses of allocation decisions. The memo includes a lengthy description of a cost-benefit analysis that utilizes willingness to pay to generate demand curves, which could be used to address the efficiency of allocation. An example from the Gulf of Mexico (GOM) red grouper fishery (based on Carter et al. 2008⁵) clarifies how willingness to pay can be used to determine the most economically efficient allocation; it also highlights the amount of data needed to successfully implement the methodology. For example, even though reasonable data does exist for the red grouper fishery in the Gulf of Mexico, and the economic analysis completed was able to suggest that a slight reallocation toward the recreational sector may be warranted, data limitation led to high uncertainty around the results and a range of possible solutions.

The tech memo briefly touches on the subject of “fairness” of an allocation decision. The authors describe how welfare distributions can be used to determine fairness. For example, income distributions (average income and disparity of incomes) could be analyzed for each allocation option to determine which is the most “fair.” However, the authors note that, because fisheries management cannot impact the distribution of income outside of fisheries management, a better approach may be to look at stakeholder perceptions toward the suggested changes. The best allocation is one in which each group affected by the change prefers its incremental change over another group’s incremental change (Bauman 1986).⁶ The authors end by noting that, ultimately, questions of fairness are a policy issue and

analyses is the impact of an outside factor such as an increase in fuel price. An EIA would show increased recreational expenditures, but it would not represent a benefit to recreational fisheries (NMFS, 1996).

⁴Personal Communication Min-Yang Lee and Scott Steinback, NMFS, NEFSC.

⁵Carter, D.W., Agar, J.J., and J.R. Waters. 2008. Economic Framework for Fishery Allocation Decisions with an Application to Gulf of Mexico Red Grouper. NOAA Tech Memo NMFS-SEFSC-576.

⁶Bauman, W. 1986. Super-fairness. MIT Press, Cambridge, MA as referenced in Plummer et al. 2012.

not a scientific one. Documenting the distributional effects of allocation options allow policymakers to discuss whether a given option is “fair and equitable.”

The tech memo includes an analysis of “allocations in practice.” Decisions that allocated catch between recreational and commercial fishermen are reviewed to determine, where possible: 1) what criteria were used to make the allocation decisions, 2) what analyses were used to support these decisions, and 3) what were the relevant objectives from the fishery management plans. Overall, 88 percent of allocation decisions used historical catch to determine a fair allocation. An update of part 1 of this analysis is included in Appendix 1A.

7.2 Anderson, L.G., and M.C. Holliday. 2007. The Design and Use of Limited Access Privilege Programs. NOAA Tech Memo NMFS-F/SPO-86

Initial Allocations

The authors break down initial allocation into two parts: selection of the entities eligible to receive harvest privileges (e.g., vessels owners and crew), and how the privilege will be distributed (allocation formula or auctions). They suggest that allocations should be administered simply, and should rely on available and transparent data. Historically, the main allocation goal has been to have a minimal disruption to the current distribution between recipients. Historical allocation formulas have been based on two categories of data: participation attributes (e.g., catch history, capital investment, or number of years fished) and other attributes (e.g., size, owner-operated, locations, dependence on fishery, or interrelations with other businesses). Identified options for allocation formulas listed in the report include: equal shares; allocation based on vessel size, catch histories, or historical participation; lottery-based allocation; or a combination of these methods. The authors note the need to engage stakeholders: “Even with this vast array of choices, it is probably impossible to devise a system that will be perceived as equally fair by all eligible entities. To improve the perceived fairness it would be essential for the Council to repeatedly consult with the members of the selected pool and the broader suite of stakeholders.”

Excessive Shares

The authors discuss two separate issues that may be important when considering excessive shares. Concentration of shares in the hands of one or a few entities can create market power problems, where the quota owners control market price for either their fished goods or for quota in the fishery. Additionally, consolidation of shares can also lead to undesirable changes to the fishing community (e.g., loss of crew jobs, decreased need for support facilities such as ice and bait.). Equations exist for calculating an excessive share limit that will prevent market power problems (see tech memo for details). Conversely, there are no quantitative methodologies for determining excessive share limits with regard to unwanted changes to the fishing community. For this, Anderson and Holliday suggest first clarifying the management objectives for the fishery, investigating all possible management alternatives to achieve the objectives, and using cost-benefit analysis to determine whether excessive share limits are necessary and, if so, what they should be. The authors note that, because overly restrictive excessive share limits can decrease the efficiency of the fishery, pros and cons need to be explicitly considered.

7.3 Pooley, S.G. 1998. Issues and Options in Designing and Implementing Limited Access Programs in Marine Fisheries. NOAA-TM-NMFS-SWFSC 252. 73 pgs

Dr. Pooley discusses the two steps for determining allocations for limited access programs: elucidating who is eligible and deciding how much quota each entity gets. When deciding who is eligible, two critical concerns arise: 1) when is the cutoff for participating in the fishery (i.e., a control date) and 2) what level of landings is required to be considered for qualification. The author suggests that the criteria for determining eligibility should be clearly defined and transparent, and the availability of data should be considered. When deciding how much quota each entity gets, the author states: "... equity requires the agency to consider the dependence of the fisherman, household and community on that resource."

This is one of the few tech memos that directly discusses equity. For fishermen, both equity and dependence (NS4 and NS8, respectively) are tied to concerns over maintaining their way of life and therefore can be economic and emotional. The author points out that policies that take into account affected fishing communities' view of what is normal and fair should have better compliance, as compliance will improve if the fishermen agree with the rationale behind a decision. Most likely, all fishermen across and within communities will not agree on what is fair. For example, one group may feel that "those that show the greatest level of dependence based on largest historical landings deserve the lion's share of the quota" while another group may think those who abused the resources "by taking large catches should not be rewarded with large quota shares."

The author stresses that issues of equity and dependence should be addressed in the Fishery Impact Statement, Environmental Impact Statement, Regulatory Impact Review, and Social Impact Assessment. Identifying social and economic groups that are likely to be affected and their levels of dependence is a key stage for identifying potential equity effects. "The evaluation of the potential impacts on these groups then helps determine whether the proposed limited access program would have unequal impacts on stakeholders or negative efficiency effects." Identifying these impacts allows decision-makers to weigh the positive and negative effects of actions.

7.4 Edwards, S. F. 1990. An Economics Guide to Allocation of Fish Stocks between Commercial and Recreational Fisheries. NOAA Tech Report NMFS 94

This is the oldest tech memo to address the appropriate method for determining the most efficient economic allocation. As with the other tech memos, it advocates a cost-benefit analysis that measures marginal willingness to pay. This memo gives more details on other economic analysis ("market" and "revenues" arguments) that, according to the author, have been used incorrectly to argue for shifting allocation toward a given sector. A less technical peer-reviewed article by the same author (Edwards, 1991)⁷ is available for more information.

According to the market argument, recreational fishing has no economic value unless it takes place in markets.⁷ The author states that this argument is incorrect, because economic values exist even when

⁷Edwards, S.F, 1991. A Critique of Three 'Economics' Arguments Commonly Used to Influence Fishery Allocations, North American Journal of Fisheries Management 11: 121-130.

markets are not involved. For example, even though a recreational fisherman does not sell his fish in the market, the opportunity to fish and the time spent fishing both have value to that fisherman.

The revenues argument states, because recreational anglers spend more money to fish than commercial fishermen receive for their catch, allocation to recreational fishermen should be increased. The author contends that this argument is incorrect because it does not take costs into account. Businesses want to decrease their costs, while this method rewards high costs.

7.5 Huppert, D.D., ed. 1987. Limited Access Alternatives for the Pacific Groundfish Fishery. NOAA Tech Report NMFS 52

Distributions of initial allocations to limited access program participants are discussed throughout the report. The report suggests that, when choosing criteria for the initial allocations, the criteria should be as specific and objective as possible to limit the number of appeals. Moratoriums on new entrants (everyone currently or recently participating in the fishery is “grandfathered” in) are commonly used to determine eligible participants. However, this can result in a larger fleet than was actively fishing at that time because not every fisherman was active every year. “Past users do not have legal rights to the public fish stocks, but they must be dealt with in a clearly even-handed and rational manner.” The Magnuson Fishery Conservation Act of 1983 states the Councils must take into account the present and historical participation in the fishery, the dependence on the fishery, and the cultural and social framework relevant to the fishery.

This report briefly discusses the subject of equity. The author states that everyone agrees that fishing regulations should entail an “equitable” distribution of benefits. Legally, in order to be fair, decision-makers must be free from conflicts of interest or bias toward the parties involved. The author clarifies that, although there is no recognized definition of equity, there are clear patterns in management practice. As quoted by Huppert (1987) “Where established resource users enjoy benefits of a communal resource ‘the judicial, the legislative, and the executive branches have uniformly supported the claims of historic users when allocating rights’” (Rolph, 1983).⁸ Rolph (1983) found that government agencies and legislators are reluctant to take away historically established fishing rights, and avoid any redistribution of wealth. However, when developing new resources, the government tends to use more of a market-oriented mechanism (e.g., auctions and royalties). The author suggests that one way of dealing with the equity issue is to make sure “no established fishermen suffer a measurable loss due to the access regulations.” He suggests this can be accomplished by matching allocations to historic catch, but he admits that “where rapid changes have been occurring in the fishery, it is not clear that historic shares preserve the economic status quo.”

8.0 Case Law Examples⁹

In challenging allocation decisions, litigants often raise claims under the MSA related to NS4 and/or those provisions of the act directly relating to LAPPs. NMFS guidance on NS4 states that an allocation decision can “impose a hardship on one group if it is outweighed by the total benefits received by another group or groups” (see section 4.1). This gives the Councils and NMFS wide latitude to

⁸Rolph, E.S. 1983. Government allocation of property rights: Who gets what? *Journal of Policy Analysis and Management* 3:45-61.

⁹This section written by Katherine Renshaw, Attorney-Advisor, Fisheries and Protected Resources Section, NOAA Office of General Counsel, Silver Spring, MD. Last Revised January, 2014.

determine what is fair and equitable for their fisheries. As summarized below, courts have consistently upheld that, as long as the Councils consider the relative benefits and hardships imposed by the management options being considered, NS4 has been met.

For LAPPs, the MSA has explicit requirements about what NMFS must consider when making initial allocations (see sections 3.4 and 3.5). These requirements were modified by the most recent amendments to the MSA in 2007. This section summarizes court decisions from challenges to post-2007 MSA LAPP provisions.

This chapter will first describe the key legal principles considered by courts when evaluating whether allocation decisions comply with NS4 and provide a more detailed excerpt from one of the leading allocation decisions: *Alliance Against IFQs v. Brown*. Next, this chapter will highlight some of the unique requirements and issues that arise in the context of LAPPs and provide brief summaries as to how courts have so far considered challenges to those programs.

8.1 National Standard Four

Primary legal principles

- Courts will uphold allocation decisions that are fair and that result in no individual, corporation or other entity amassing excessive share of quota.
 - *Connecticut v. Daley*¹⁰ 1999 [Amendment 10; Summer Flounder, Scup, and Black Sea Bass FMP]
 - *Recreational Fishing Alliance v. Evans*¹¹ 2001 [Final Highly Migratory Species FMP]
 - *Van Valin v. Locke*¹² 2009 [International Pacific Halibut Commission]
- Allocation decisions that may have a discriminatory impact will be upheld so long as those regulations are tailored to fulfill the objectives of the FMP, provide the greatest overall benefit to the nation, and/or promote the conservation of the managed resource.
 - *Alaska Factor Trawler Association v. Baldrige*¹³, 1987 [Amendment 14; Gulf of Alaska Groundfish Fishery Management Plan (FMP)]
 - *National Fisheries Institute, Inc. v. Mosbacher*¹⁴, 1990 [Atlantic Billfish FMP]
 - *Parravano v. Babbitt*¹⁵, 1993 [Emergency Rule; Klamath Chinook salmon]
 - *Hall v. Evans*¹⁶ 2001 [Monkfish FMP]
 - *Hadaja, Inv. v. Evans*¹⁷ 2003 [Mid-Atlantic Tilefish FMP]
 - *Roche v. Evans*¹⁸ 2003 [Framework 25; New England Groundfish FMP]
 - *General Category Scallop Fishermen v. Secretary of United States Department of Commerce*¹⁹ [Amendment 11; Atlantic Scallop FMP]
 - *Western Sea Fishing Co. v. Locke*²⁰ 2010 [Amendment 1; Atlantic Herring FMP]

¹⁰53 F. Supp. 2d 147 (D.Conn. 1999)

¹¹172 F. Supp. 2d 35 (D.D.C. 2001)

¹²671 F. Supp. 2d 1 (D.D.C. 2009)

¹³831 F.2d 1456 (9th Cir. 1987)

¹⁴732 F. Supp. 210 (D.D.C. 1990)

¹⁵837 F. Supp. 1034 (N.D. Cal. 1993)

¹⁶165 F. Supp. 2d 114 (D.R.I. 2001)

¹⁷263 F. Supp. 2d 346 (D.R.I. 2003)

¹⁸249 F. Supp. 2d 47 (D.Mass. 2003)

¹⁹720 F. Supp. 2d 564 (D.N.J. 2010), *upheld on appeal on other grounds at* 635 F. 106 (3d Cir. 2011).

²⁰722 F. Supp. 2d 126 (D. Mass. 2010)

- When looking at an allocation decision that may have discriminatory impact, courts will consider whether the action taken was “intentionally invidious²¹ or inherently unfair.”
 - ***Sea Watch International V. Mosbacher*²², 1991 [Amendment 8; Surfclam and Ocean Quahog FMP]**
 - ***North Carolina Fisheries Association v. Gutierrez*²³ 2007 [Amendment 13C; South Atlantic Snapper Grouper FMP]**
- NS4 only applies to a direct and deliberate distribution of fishing privileges; management measures that may have incidental allocative effects are not subject to the requirement that the action result in a fair and equitable allocation to all such fishermen.
 - ***National Coalition for Marine Conservation v. Evans*²⁴ 2002 [Final Highly Migratory Species FMP]**
 - ***Little Bay Lobster Co., Inc. v. Evans*²⁵ 2003 [Atlantic Coastal Fisheries Cooperative Management Act regulations for lobster fishery]**
- In order to prevail on a claim under NS4, a party must demonstrate that the unfair decision resulted in actual harm to their interests.
 - ***North Carolina Fisheries Association, Inc. v. Daley*²⁶ 1997 [Amendment 10; Summer Flounder, Scup, and Black Sea Bass FMP]**
- Improper decisionmaking (e.g., decisions that rely upon flawed data) that results in inequitable allocations may lead to a violation of NS4.
 - ***Massachusetts v. Daley*²⁷ 1998 [Amendment 10; Summer Flounder, Scup, and Black Sea Bass FMP]**
- Courts will examine the administrative record supporting allocation decisions to determine whether the agency’s decision was adequately supported and that the agency fully considered the allocation’s impact on all impacted sectors.
 - ***Yakutat, Inc. v. Gutierrez*²⁸ 2005 [Amendment 67; Bering Sea Aleutian Islands Groundfish FMP]**
 - ***Fisherman’s Finest, Inc. v. Gutierrez & Fishermen’s Finest, Inc. v. Locke*²⁹ 2008 [Amendments 85&80; Bering Sea and Aleutian Islands Groundfish FMP]**

Case Study: *Alliance Against IFQs v. Alliance Against IFQs v. Brown*³⁰, 1996 [Alaska Halibut and Sablefish Individual Fishing Quota (IFQ)]

- Background: Plaintiffs challenged the allocation criteria established as part of the Alaska Halibut and Sablefish IFQ plan, arguing among other things that the requirement that quota recipients own or lease vessels results in an unfair allocation of fishing privileges that disproportionately benefitted owners/lessees at the expense of others utilizing the same resource.
- Court’s holding: “The plan adopted will undoubtedly have an adverse impact on the lives of many fishermen who have done nothing wrong. Their entirely legitimate interest in making a

²¹ Tending to cause discontent, animosity, or envy (Merriam-Webster Dictionary)

²² 762 F. Supp. 370 (D.D.C. 1991)

²³ 518 F. Supp. 2d 62 (D.D.C. 2007).

²⁴ 231 F. Supp. 2d 119 (D.D.C. 2002).

²⁵ 352 F.3d 462 (1st Cir. 2003)

²⁶ 16 F. Supp. 2d 647 (E.D.Va. 1997)

²⁷ 10 F. Supp. 2d 74 (D. Mass. 1998)

²⁸ 401 F.3d 1054 (9th Cir. 2005).

²⁹ 2008 WL 4889958 (W.D. Wash. Nov. 12, 2008).

³⁰ 83 F.3d 343, 347-48 (9th Cir. 1996).

living from the fishery has been sacrificed to an administrative judgment about conservation of fish and efficiency of the industry. That is, however, an unavoidable consequence of the statutory scheme. Despite the harshness to the fishermen who were left out, there is no way we can conclude on this record that the Secretary lacked a rational basis for leaving them out. The Secretary considered their interests, considered the relevant factors and articulated a rational connection between the facts found and the choice made. Because this standard was met, we do not have the authority to substitute our judgment for the Secretary's with regard to allocation of all the quota shares to boat owners and lessees."

8.2 Allocations within Catch Share/LAPPs

- Applicability of 303A Provisions
 - A court will only analyze whether a program complied with the provisions of 303A of the MSA if that program must involve the issuance of a federal permit to harvest a quantity of fish for the exclusive use by a person.
 - ***Lovgren v. Locke*³¹ 2012 [Amendment 16; Northeast Multispecies FMP]**
- Control Dates
 - Public must be given sufficient notice of control dates in order for those dates to be effective, and all required procedures in the MSA and Administrative Procedures Act must be followed.
 - ***General Category Scallop Fishermen v. Secretary, U.S. Dept. of Commerce*³² 2011 [Amendment 11; Atlantic Scallop FMP]**
 - ***Coastal Conservation Association v. Locke*³³ 2011 [Amendment 29; Gulf of Mexico Grouper and Tilefish FMP]**
 - The use of control dates may be permissible even if it results in allocations that discriminate against more recent entrants into the fishery. So long as the agency provides adequate justification and support for the decision to use a control date and considers the potential negative impacts of that decision, courts will likely uphold the agency's decision.
 - ***Alliance Against IFQs v. Brown*³⁴, 1996 [Alaska Halibut and Sablefish Individual Fishing Quota (IFQ)]**
 - ***Pacific Dawn v. Bryson*³⁵ 2011 [Amendments 20&21; Pacific Groundfish FMP] & *Pacific Dawn v. Pritzker* 2013 [Amendments 20&21; Pacific Groundfish FMP]³⁶**
- Fishing Communities
 - LAPP provisions require the agency to consider impacts of LAPP programs on fishing communities, but does not require the agency to develop criteria for allocating fishing privileges to such communities
 - ***Pacific Coast Federation of Fishermen's Association v. Blank*³⁷ 2012 [Amendments 20-21; Pacific Groundfish FMP]**

³¹701 F.3d 5 (1st Cir. 2012)

³²635 F. 106 (3d Cir. 2011).

³³2011 WL 4530631 (M.D. Fla. Aug. 16, 2011), report and recommendations adopted by *Coastal Conservation Ass'n v. Blank*, 2011 WL 4530544 (M.D. Fla. 2011, Sept. 29, 2011).

³⁴83 F.3d 343, 347-48 (9th Cir. 1996).

³⁵2011 WL 228764 (N.D. Cal. 2011).

³⁶ 2013 WL 6354421 (N.D. Cal. Dec. 5, 2013).

- NMFS is not responsible for developing community sustainability plans under 303A(c)(3)(A)(i)(IV)
 - ***Coastal Conservation Association v. Locke*³⁸ 2011 [Amendment 29; Gulf of Mexico Grouper and Tilefish FMP]**
- **Substantial Participation**
 - Courts will uphold the agency's compliance with the requirement that limited access privilege be issued under the system to persons who substantially participate in the fishery, so long as the agency's decision was reasonable, supported by the record, and based on relevant criteria.
 - ***Pacific Coast Federation of Fishermen's Association v. Blank*³⁹2012 [Amendments 20-21; Pacific Groundfish FMP]**
 - ***Coastal Conservation Association v. Locke*⁴⁰ 2011 [Amendment 29; Gulf of Mexico Grouper and Tilefish FMP]**

9.0 Case studies

The following five case studies present interesting ideas and possible new approaches to allocating resources for consideration. Two examples (one from the United States and one from Australia) discuss how independent allocation panels can be used to make allocation decisions. The third case study is an example of intersector trading that allows for a market-based transfer of quota between commercial and recreational sectors. The fourth case study from South Georgia covers the use of past fishing compliance and environmental impact to determine which vessels receive annual allocations. The final example is a catch share program in the United States that takes a novel approach to allocating catch of limited species.

9.1 Coho Salmon in Oregon: Conversation with Jeffrey Feldner, Oregon State

In the mid-1980s, the allocation of coho salmon between commercial and recreational fisheries became a divisive issue in state fisheries management in Oregon. To address the problem, the Oregon Fish and Wildlife Commission (FWC) created an allocation group composed of four commercial and four recreational fishermen to see whether a consensus could be reached. The group's first goal was to clearly articulate the needs of both groups. Through this exercise, it became clear the needs of each group differed (the commercial fishermen's priority was amount of fish caught and the recreational fishermen's priority was the number of days fishing), and there was the potential of finding a solution that would satisfy both groups. As a result of establishing these objectives, interactions became less antagonistic and more collaborative. An Oregon FWC representative was present for all talks, but did

³⁷693 F.3d 1084 (9th Cir. 2012). Although not addressed on appeal, the district court also ruled against National Standard 4 and 5 challenges raised by plaintiffs finding that NMFS reasonably determined that the trawl rationalization program was likely to both support conservation and promote economic efficiency. *Pacific Coast Fed'n of Fishermen v. Locke*, 2011 WL 3413533 (N.D. Cal. Aug. 5, 2011).

³⁸2011 WL 4530631 (M.D. Fla. Aug. 16, 2011), report and recommendations adopted by *Coastal Conservation Ass'n v. Blank*, 2011 WL 4530544 (M.D. Fla. 2011, Sept. 29, 2011).

³⁹693 F.3d 1084 (9th Cir. 2012). Although not addressed on appeal, the district court also ruled against National Standard 4 and 5 challenges raised by plaintiffs finding that NMFS reasonably determined that the trawl rationalization program was likely to both support conservation and promote economic efficiency. *Pacific Coast Fed'n of Fishermen v. Locke*, 2011 WL 3413533 (N.D. Cal. Aug. 5, 2011).

⁴⁰2011 WL 4530631 (M.D. Fla. Aug. 16, 2011), report and recommendations adopted by *Coastal Conservation Ass'n v. Blank*, 2011 WL 4530544 (M.D. Fla. 2011, Sept. 29, 2011).

not actively participate, as his role was to answer questions when needed and to not interfere in the discussion.

Through multiple meetings, the group drafted a policy that both groups could support: the final allocation depended on the overall total allowable catch of the fishery such that the allocation varied depending on the availability of the resource (at low catch levels, a high percentage of the catch was allocated to recreational fishermen; at high catch levels, a high percentage of the catch was allocated to commercial fishermen). This agreement was designed to give some stability to the length of the recreational season.

A few years later, the allocation of coho salmon in federal waters was addressed. The Pacific Fishery Management Council adopted an allocation plan for coho south of Cape Falcon that copied this Oregon plan. This is an example of an allocation decision where both sides were content with the final decision. In addition, the decision has been long-lasting—25 years after the compromise was reached, there are still no commercial-versus-recreational allocation issues south of Cape Falcon. Feldner suggested that guidance and support on how to follow a process such as this could be helpful.

There are two main take-home messages from the interview: 1) determining the needs of each sector early in the process provides a means for brainstorming new options to meet all of those needs and 2) creating a forum for discussing and making allocation decisions outside the regular management process can allow fishermen a chance to relax their defenses and create compromises.

9.2 Allocation of Fisheries Resources in Australia

In response to long-standing allocation controversies in Australia, advice on creating successful allocation decisions is plentiful. One of the common themes is the advantage of independent allocation panels. It has been suggested that establishing an independent allocation body is preferable to leaving allocation decisions to existing fishery management bodies for the following reasons (Kaufmann and Geen, 1998)⁴¹:

- 1) The working relationship between the fishery and management body will be improved if the fishery does not blame management for what they perceive to be unfair allocations.
- 2) The ability of fishermen to claim others have had undue influence on the allocations is reduced.
- 3) The input from the independent panel that has received advice from both legal and economic experts should reduce the desire for or success of subsequent legal challenges.

In the Australian model, the cost of creating and implementing these independent panels should be recouped from a reduced cost of legal challenges. The Australian Fisheries Management Authority has established a process in which allocation advisory panels are to be used on an as-needed basis. They will be composed of a retired judge, an economist, and a fisherman not associated with the fishery in question. Panels consult with stakeholders and experts before providing their recommendations. The first allocation panel was used in 1997 to allocate ITQ to the southeast non-trawl fishery. There have been some legal challenges from fishermen, but overall the fishing industry has been supportive of the independent advisory panel process. The shark fishery insisted an independent allocation panel be established before they would agree to a change to an ITQ program (Kaufmann and Geen, 1998).⁴¹

⁴¹Kaufmann, B. and G. Geen, 1998. Quota Allocation and Litigation: An Economic Perspective. *Marine Resource Economics* 13:143-157.

In 2003, the state of Queensland, Australia, developed a Fishery Resource Allocation Policy (Anderson and Dekker 2006).⁴² A working group was established to create the policy with representatives from commercial, recreational, charter, aquaculture, seafood marketing, and conservation groups. An appendix to the policy provides the overall needs and aspirations of each sector. Creating this appendix helped generate buy-in by the various user groups for the policy. When a group desires a change to an allocation, they must submit a proposal to the fishery management agency. “Onus of providing information to support such a proposal should fall upon the proponent who, or the group that, would gain benefit from reallocation of access.”⁴³ In addition, the process requires the submitter to talk to all other stakeholders before submitting a proposal, thereby promoting collaboration between groups. Submitted proposals are then discussed within an already established advisory group. The advisory groups are fishery-specific, are formed by the Queensland Government, and are composed of “such persons as the Minister thinks fit.” When these advisory groups cannot reach an agreement on an allocation issue, then the policy advises creating independent panels to determine a solution. The independent panels should be composed of four members: a retired judge or member of the legal profession, an economist, a sociologist, and a fisheries manager from another jurisdiction.

The policy provides eight guiding principles:

- 1) Separate sustainability from allocation.
- 2) Use best available information (ecological, economic, and social).
- 3) Involve the community in the decision-making process.
- 4) Clearly state allocations to each sector, and base decisions on management objectives.
- 5) Within a sector, try to match historical use patterns when possible. When changes help one group at the expense of another, monetary compensation should occur.
- 6) Whenever practical, use market forces to adjust access.
- 7) When a fishery is overfished, reductions should be shared equally across user groups.
- 8) Allocation adjustments should be open to scrutiny and have a time frame sufficient for implementation of change.

Other interesting ideas have been raised in these documents: 1) compensation: the Queensland policy includes a formula for calculating compensation for commercial fishermen when their allocations are reduced for the benefit of another user group⁴³; and 2) environmental impact: Kaufmann and Geen (1998) suggest considering the ecological impacts of the different fishing sectors when determining allocations.⁴¹

9.3 Intersector Trading of Halibut Quota in British Columbia, Canada

British Columbia has a program that allows intersector trading of halibut quota between commercial and recreational fishermen. As of 2013, this program is in year 3 of an “experimental fishery,” but the Minister of Fisheries and Oceans is planning to make this a permanent program. The market-based transfer program allows individual anglers or fishing experience businesses (i.e., charters, lodges, and marinas) to lease halibut quota from commercial halibut license holders. The program was designed to support greater fishing opportunities for recreational fishermen. It allows recreational fishermen who buy quota from commercial fishermen to fish beyond the normal recreational season and/or bag limit. Three main objectives were identified for the program:

- 1) Conservation of the resource through enhanced monitoring of the recreational fishery, thereby keeping all sectors accountable for maintaining catches within the total allowable catch.

⁴²Anderson, C. and A. Dekker. 2006. Benefits of Developing a Fisheries Resource Allocation Policy In Queensland. *Sharing the Fish Conference 2006* (www.fishallocation.com).

⁴³Queensland Fisheries Resource Allocation Policy.

- 2) Economic prosperity through predictable access for all users.
- 3) Flexibility through an effective mechanism for transfers between the sectors.

More predictable access to the resources allows businesses dependent on recreational fishing to plan and advertise in advance of the fishing season. Increases in recreational fishing activity could translate into indirect benefits to businesses that support the recreational fishing sector, such as accommodations, fuel, and bait.⁴⁰

Pacific halibut are jointly managed by the United States and Canada through the International Pacific Halibut Commission (IPHC). The IPHC assigns catch limits for each country, but each nation is responsible for the allocation among its user groups. In Canada, all allocations and reallocations of halibut quota are at the absolute discretion of the Minister of Fisheries and Oceans.⁴⁴ One year after the experimental halibut fishery was introduced, the recreational allocation of halibut was increased from 12 percent to 15 percent. At this time, the Minister announced that the experimental halibut fishery would continue and would allow market-based transfers of quota between sectors.

To participate in the experimental fishery, interested recreational fishermen must fill out an Expression of Interest Form (EOI) prior to the start of the fishing season. The fishermen then fill out a formal application for the free experimental fishing permit, which allows them to purchase extra quota. There is a requirement that the fishermen must have purchased at least 20 pounds of quota before they can go fishing (average price in 2011 was \$5 per pound), but catch in excess of the purchased quota can be reconciled after returning to dock.⁴⁴ Transfers between fishermen are completed through a third-party contractor called Access Q (<http://www.iqmi.ca/accessQ.aspx>). Transfers can move quota from commercial fishermen to recreational fishermen, between experimental recreational license holders, or from experimental recreational license holders back to commercial license holders. The program also allows for carryover of 10 percent or 200 pounds, whichever is greater. The poundage is added to the license quota in the next fishing season provided the holder reapplies and obtains a valid experimental fishing license for the next season. The catch is monitored through the use of logbooks, dockside creel surveys, and on-water checks by enforcement staff. Future monitoring options, such as hail in/hail out requirements and random dockside monitoring audits, are being considered.

In 2012, 102 EOI were completed leading to 61 experimental licenses issued. Only 16 fishermen participated in both 2011 and 2012. In 2011, 1,266 pounds of halibut were caught and reported under the experimental recreational license program.⁴⁵ "Participation in the experimental fishery in 2011 and 2012 has been limited, suggesting that the net benefits may not be large; however, this could change with any increase in restrictions on the regular recreational halibut fishery and growing awareness of the quota transfer fishery over time."⁴⁴

The program has been well received by commercial fishermen; however, to date, only a few recreational fishermen have participated and only minimal poundage of fish has been transferred. Commercial fishermen feel that in-season transfers between the sectors provide greater certainty to the commercial sector than constant changes to the allocation policy. Conversely, recreational fishermen feel the experimental fishery serves to privatize access to a public resource, favors businesses and individuals

⁴⁴Regulatory Amendment Proposal for a Recreational Quota Transfer Licence: Regulatory Impact Analysis Statement. November 7, 2012. http://www.sportfishing.bc.ca/docs/rias_-_quota_transfer_licence_nov_7_12.pdf

⁴⁵2012 Canadian Recreational Fishery Halibut Catch Report, Report prepared for International Pacific Halibut Commission (IPHC) January 2013.

who can afford the cost to lease quota, and sets a precedent they oppose.⁴⁴ Recreational fishing businesses are concerned that their participation could negatively impact their business due to great opposition to the program by their customers.

Recreational fishermen also believe that the operational cost to the government could be better spent elsewhere. They feel that the current allocation of 15 percent does not adequately provide access for the recreational halibut fisherman and that other options to increase recreational opportunities should be explored. For example, some recreational fishermen preferred alternative management options such as introducing a halibut stamp or increasing recreational license fees to raise money to purchase halibut quota from the commercial sector.⁴⁶

Other possible options for market-based transfers between fishing sectors have been mentioned in the literature. Angler management organizations (Sutinen and Johnson 2009⁴⁷) or recreational trust funds (Reid 2011⁴⁸) can be established to raise money (e.g., through licenses and lotteries), buy or sell quota, and manage recreational catch. Recreational tags can also be used either with or without the use of recreational trust funds (Reid 2011⁴⁸, Johnston et al. 2007⁴⁹).

9.4 Longline Fishery for South Georgian Toothfish

This is a high-value Marine Stewardship Council certified fishery with a limited catch limit. Each year, vessels apply for a license to fish in the Conservation of Antarctic Marine Living Resources (CCAMLR) subarea 48.3. The Director of Fisheries of the Government of South Georgia is responsible for issuing licenses, with the number of vessel licenses dependent on the annual catch limit for that year (usually six to 10 licenses are awarded).⁵⁰ To be eligible, a vessel must first meet a number of mandatory requirements: the vessel must be flagged to a CCAMLR state, have an operational vessel monitoring system, and pass a safety inspection. The Director then determines which vessels best advance safety and sustainability criteria. Examples include: past compliance with catch rates, catch efficiency (including minimizing bycatch), vessel age and condition, previous contributions to science, and the extent to which that vessel can help increase the standards of the fishery.⁵⁰ The Director is allowed to give preference to vessels flagged to the United Kingdom.

9.5 Northwest Trawl Rationalization Program

This complex catch share program was implemented in 2011. It creates an IFQ system for shoreside whiting and non-whiting, and cooperative programs for whiting motherships and catcher processor fleets. The IFQ allocations for target species are based on catch history 1994–2003, and processing

⁴⁶Experimental Recreational Halibut Fishery Community Information Sessions. April 16-May 1, 2012. Meeting Summary Report.

⁴⁷Sutinen, J.G., and R.J. Johnston. 2009. Angling Management Organizations: Integrating the Recreational Sector into Fishery Management. Pages 201-229 in Leal, D.R., and V. Maharaj (eds) *Evolving Approaches to Managing Marine Recreational Fisheries*. Rowman and Littlefield Publishers, Inc, Plymouth, UK.

⁴⁸Reid, C. 2011. Developing Mechanism for the Transfer and/or Adjustment of Catch Shares Between Sectors with Application to Western and South Australian Rock Lobster Fisheries. Fisheries Management Paper 248, Dept. of Fisheries, Western Australia.

⁴⁹Johnston, R.L., D.S. Holland, V. Maharaj, and T.W. Campson. 2007. Fish harvest tags: An alternative management approach for recreational fisheries in the US Gulf of Mexico. *Marine Policy* 31: 505-516.

⁵⁰Toothfish Licensing 2013 Information for Applicants. South Georgia and the South Sandwich Islands.<http://www.sgisland.gs/download/Toothfish%20IfA%202013.pdf>

history of whiting from 1998–2004.⁵¹ This program is unique in its approach to allocating catch for overfished stocks. Allocations of the overfished stocks are meant to provide the amount of “overfished species an entity would need to take its target species.” The overfished species allocation is thus based on the target species allocations and location-specific bycatch rates of overfished stocks. This method rewards fishermen for past landings of target species, but does not reward fishermen who took an overabundance of the overfished species. In addition, the program allows fishermen to sell or lease leftover quota for stocks, including overfished stocks. This is an incentive for fishermen to decrease their bycatch of these sensitive species.

⁵¹In 2003 a buyback program was implemented that reduced the fleet substantially. The catch history associated with these retired vessels (approximately 44 percent of the target species quota share) was divided equally among the remaining qualified permits. The rest of the quota share (56 percent) was based on the catch history associated with individual permits.

Appendix 1. Historical Allocation Decisions in the U. S.

A large percentage of allocation decisions (80 percent of commercial/recreational allocations and 89 percent of catch share allocations) within the United States are based entirely or partially on historical catch. In **Appendix 1A**,⁵² 41 allocation decisions⁵³ (in 30 regulations) between commercial and recreational fisheries are provided. All but one either created or modified existing allocation ratios; the one removes an allocation. Thirty-three allocation decisions were based on historical or current catch, and can be subdivided into six categories:

- Nine created allocations that match the status quo (retain current allocations).
- Five were based on the catch ratios averaged across the longest time period.
- Two were based on catch ratios averaged across the most recent time period with both commercial and recreational catch data available.
- Five used a formula where half of the allocation was based on the longest time period and half was based on the most recent time period.
- Seven were based on historical catch ratios before the implementation of regulations that would impact catch.
- Five were based on a specific historical catch ratio, but with no explanation of why that time period was utilized.

Only seven allocation decisions provided a rationale based on something other than historic catch:

- Three were compromises agreed to by both recreational and commercial fishermen.
- Two were based on expected catch.
- One provided a small catch to recreational fishermen to allow them to land dead fish rather than discard them.
- One increased quota to the gears that contributed the most to monitoring needs.

Ten fish stocks had an official change in allocation through time (six from the Gulf of Mexico or South Atlantic, three on the West Coast, and one Highly Migratory Species). For the most part, changes in percentage allocation favored the recreational fishermen. Details for these cases are provided below.

The allocations of three West Coast salmon stocks (coho salmon (*Oncorhynchus kisutch*) stocks north and south of Cape Falcon and Chinook salmon (*Oncorhynchus tshawytscha*)) have been modified to increase the allocations to recreational fishermen at low abundances. For all three of these stocks, working groups composed of both commercial and recreational fishermen were formed to determine the best allocation. Both groups agreed to an allocation schedule that varied depending on the stock's total allowable catch. The allocation schedule increased the recreational allocation at low abundances to provide a more stable recreational season.

South Atlantic dolphin (*Coryphaena hippurus*) originally had a non-binding allocation that capped commercial catch at 13 percent (based on the time period with the highest commercial catch). The South Atlantic Council later created an official allocation based on a combination of historical and recent catch, which decreased the cap on commercial fisheries.

⁵²Updated from Plummer et al., 2012. The Allocation of Fishery Harvests under the Magnuson-Stevens Fishery Conservation and Management Act: Principles and Practice.

⁵³We are counting "allocation decisions" rather than regulations because in a few cases the rationale (or time period) behind the allocation decisions differed between stocks in the same regulation.

Bluefin tuna (*Thunnus thynnus*) allocations are specific to gear type. For this report, we summed across the commercial gears to arrive at the commercial and recreational total allocations. In 1992 allocations were created for all gears based on historical catch. When catch limits were increased in 1997, quotas were modified depending on the gear's contribution to scientific monitoring needs. Both general category commercial and recreational angling quotas were increased but, because the other commercial gears did not get an increase in quota, the overall commercial:recreational split was modified slightly in favor of recreational fishermen.

Three Gulf of Mexico stocks have changed allocation through time. Vermilion snapper had its official allocation removed in 2004. Gulf of Mexico red grouper was initially allocated in a 2004 Secretarial amendment that applied the same percent reduction to commercial and recreational fishermen and subsequently maintained the status quo. Five years later, Amendment 30B created an interim allocation based on 20 years of historical catch, increasing the recreational allocation from 19 percent to 24 percent. When the Gulf of Mexico Fishery Management Council was forced to reduce catch on Greater amberjack (*Seriola dumerili*) in 2008, it chose to reduce recreational landings proportionally less than commercial landings because of perceived inequities in the effects of previous management decisions. Although this interim allocation (27% commercial:73% recreational) was an increase in the recreational quota compared to historical long-term catch (1981–2004 average allocation was 29%:71%), it was a decrease from the official allocation (14%:86%) created in 1990 via Amendment 1.

The final two fisheries with a change in allocation through time include king mackerel (*Scomberomorus cavalla*) and Spanish mackerel (*Scomberomorus maculatus*), both managed within the Coastal Migratory Pelagics FMP in the Gulf of Mexico and South Atlantic. In the original FMP, king mackerel was considered one stock across the South Atlantic and Gulf of Mexico. Allocations were provided (in pounds), but we could find no information detailing how these numbers were determined. Amendment 1 to the FMP split king mackerel into Gulf and Atlantic stocks and revised allocations with an increased share to commercial (decreased allocation to recreational) for both stocks. The allocation decision for the Gulf stock was based on historical catch, but no information was found on how the allocation for the Atlantic stock was determined. The allocation for the Atlantic stock of Spanish mackerel has been changed twice. The original allocation (76%:24%) was created in 1987 and based on the most recent time period with catch data (1979–1985). In 1989, the Council determined that 1979–1985 represented a time period when the resources were overfished and recreational participation was low. The allocation was therefore adjusted to match the limited data available from the 1970s, creating a 50:50 split between commercial and recreational fisheries. Finally, in 1999, in response to reductions in total catch, the allocation was adjusted (55%:45%) to retain commercial catch at levels close to the 1998 catch. This adjustment moved the allocation that was currently not being used by the recreational fishermen to commercial fishermen.

In appendix 1B, information is provided on initial allocations for the 15 U.S. catch share programs currently in operation. All but two of the initial allocations were based entirely or partially on historical catch (the Western Alaska Community Development Quota and the Golden Tilefish Category C were the exceptions). In an analysis of catch share fisheries from around the world, researchers found 91 percent of the fisheries based at least some fraction of their initial allocations on historical catch (Lynham, 2014).⁵⁴

⁵⁴Lynham, J. 2014. How Have Catch Shares Been Allocated? *Marine Policy* 44:42-48.

Appendix 1A. Commercial and Recreational Allocation Decisions (updated Table 4.4, Plummer et al. 2012)

Category: N = not based on catch history, Y = based on catch history. **Note:** B = based on time before regulations impacted catch, L = based on longest time period, NE = based on a time period, but no explanation provided for given years, R = based on most recent time period, RE = removed allocation, SQ = retained current allocations (status quo).

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category ¹ /Note ²	Basis for Allocation Decision
Gulf of Mexico Fishery Management Council					
Reef Fish Resources of the Gulf of Mexico	Amendment 1 (1990)	Greater Amberjack	14%:86% (changed later)	Y/L	Historical catch 1979-87. These years represent the longest time period of documented commercial and recreational annual harvests.
		Grey Snapper	32%:68%		
		Groupers in aggregate	65%:35%		
		Jewfish	36%:64%		
		Lane Snapper	25%:75%		
		Mutton Snapper	43%:57%		
		Red Snapper	51%:49%		
		Seabasses	3%:97%		
		Snappers in aggregate	49%:51%		
		Vermillion Snapper	67%:33% (later removed)		
	Yellowtail Snapper	55%:45%			
	Secretarial Amendment 1 (2004)	Red Grouper	81%:19% (changed later)	Y/SQ	Between 1990-2000 the catch ratio was 76%:24%, close to the 1986-89 ratio of 75%:25%. Recent (1999-01) catch has shifted to a ratio of 81%:19% due to management changes and a strong 1996 year class. The current amendment does not address single-species grouper allocations. Instead, it applies the same percentage reductions to each sector, thus effectively maintaining allocations at current levels.

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category ¹ /Note ²	Basis for Allocation Decision
Reef Fish Resources of the Gulf of Mexico, continued	Amendment 23 (2004)	Vermillion Snapper	Removed Allocations	RE	Current catch is 79%:21%. Returning to allocation from Amendment 1 would reduce commercial catch by 37%. Council decides not to designate commercial and recreational allocations.
	Amendment 30A (2008)	Gray Trigger	21%: 79%	Y/SQ	This is an interim allocation that matches historic landings (2000-04) and reduces landings equally for both sectors. Council created Ad Hoc committee to examine fair and equitable ways to allocate in the future.
		Greater Amberjack	27%: 73%	Y/L	Close to historical average 1981-04 (was 29%: 71%). The Council reduced recreational landings proportionally less than commercial landings because of perceived inequities in the effects of previous management decisions and greater amberjack's value as a recreational sport fish.
	Amendment 30B (2009)	Gag Grouper	39%: 61%	Y/L	Interim allocation was based on 1986-05 (the longest and most robust time series available). In addition, these data show how the fishery has been shared over time. The Council created a committee to examine future allocation issues.
		Red Grouper	76%: 24%		
	Generic ACL/AM Amendment (2012)	Black Grouper	73%: 27%	Y/R	Allocation is based on the five most recent years of landings available (2004-2008), reflecting the current harvest patterns of both sectors.

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category ¹ /Note ²	Basis for Allocation Decision
Gulf of Mexico Fishery Management Council and South Atlantic Fishery Management Council					
Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic	FMP (1983)	King Mackerel	24%:76% (changed later)	Y/NE	Allocations were based on the average percentages of total landings contributed by each group.
	Amendment 1 (1985)	King Mackerel/Atlantic Group	37.1%:62.9%	Y/NE	Allocations are close to the average catch 1978-83. The amendment states that since this stock is currently underfished, allocation may be adjusted as the fishery develops. Future allocations should be based on "longest numbers of years beginning in 1979 for which concurrent recreational and commercial data are available."
		King Mackerel/Gulf Group	32%:68%	Y/NE	Allocations were based on historical catch (1975-79 was 30%:70%). This moved 2% of allocation from recreational to commercial to account for recreational fish sold. Amendment states this is temporary allocation and gives method for changing future allocations: use "longest number of years beginning in 1979 for which concurrent recreational and commercial data are available."
	Amendment 2 (1987)	Spanish Mackerel/Atlantic Group	76%:24% (changed later)	Y/R	Allocation was based on catch 1979-85 (most recent time period with catch data).
		Spanish Mackerel/Gulf Group	57%:43%		
	Amendment 4 (1989)	Spanish Mackerel/Atlantic Group	50%:50% (changed later)	Y/B	Council noted that the 76%:24% allocation was from time when resources were overfished and recreational participation was low. Limited data from early 1970s suggests 50%:50% split.
	Catch specifications (1999)	Spanish Mackerel/Atlantic Group	55%:45%	Y/SQ	TAC was decreased. Allocation changed to allow commercial to catch similar amount as last year since recreational does not use full allocation.
	Amendment 18 (2012)	Cobia/ Atlantic Migratory Group	8%: 92%	Y/L&R	Allocation was based 50% on the longest time series available (2000-08) and 50% on recent catch (2006-08).

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category ¹ /Note ²	Basis for Allocation Decision
Mid-Atlantic Fishery Management Council					
Atlantic Bluefish	Amendment 1 (2000)	Bluefish	17%:83%	Y/B	Average Catch 1981-89 (most recent years prior to regulations that may have impacted landings). Note: If 17% of the Total Allowable Landings (TAL) was less than 10.5 M lbs., then the quota could be increased up to 10.5 M lbs. if the recreational sector was projected to land less than 83% of the TAL for the upcoming year. The transfer stipulation is intended to provide higher commercial fishing opportunities when possible.
Atlantic Mackerel, Squid, and Butterfish Fisheries	Amendment 11 (2011)	Atlantic Mackerel	93.8%:6.2%	Y/NE	Amendment 11 designated an allocation for the recreational mackerel fishery that corresponds to recreational catch from 1997-07 times 1.5.
Summer Flounder, Scup, and Black Sea Bass Fisheries	Amendment 2 (1993)	Summer Flounder	60%:40%	Y/B	Average catch 1980-89. This time period because it had reliable recreational landings data (1980+) but occurred before the stock declined to its lowest historical levels (1990). The states deemed the years used for allocation purposes fair and equitable.
	Amendment 8 (1996)	Scup	78%:22%	Y/B	Average catch 1988-92. Years prior to 1988 were not used because of problems with the data, while changes in regulations in early 1993 suggested not using that year's data.
	Amendment 9 (1996)	Black Sea Bass	49%:51%	Y/B	Average catch 1983-92. Years prior to 1983 were not used because of problems with the data, while changes in regulations in early 1993 suggested not using that year's data.

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category ¹ /Note ²	Basis for Allocation Decision
New England Fishery Management Council					
Northeast Multispecies Fishery	Amendment 16 (2010)	Gulf of Maine Cod	66.3%:33.7%	Y/SQ	Allocation was based catch from 2001-06. These years were selected because they maintain the (then) current catch ratios, and do not unduly burden either sector.
		Gulf of Maine Haddock	72.5%:27.5%		
NMFS Highly Migratory Species Management Division					
Atlantic Highly Migratory Species	1992 Atlantic Tunas Convention Act Rule	Bluefin Tuna	~82.5%:17.5% ⁵⁵ (changed later)	Y/NE	Quotas were established for various commercial and recreational categories based upon the historical share of catch during 1983-91.
	1997 Atlantic Bluefin Tuna Quota Specifications	Bluefin Tuna	~80%:20% ⁵²	N	Quotas were modified based on the gear's contribution to scientific monitoring needs. Both general category commercial and recreational angling were increased, but since other commercial gears were not increased, the overall commercial: recreational split was modified slightly in favor of recreational.
Pacific Fishery Management Council					
Pacific Coast Groundfish	Ongoing	Pacific Coast Groundfish	Varies between species and years	N	During the biennial specifications process, set-asides for the recreational fishery are determined prior to dividing the commercial harvest guideline between the non-trawl and trawl fisheries
West Coast Salmon	1984 framework adjustment	Chinook (N. of Cape Falcon)	Varies with TAC (changed later)	Y/B	Allocation was based on historic catch between 1971-75. This period was selected because it is the base period used for comparisons in the previous FMP analyses and it avoids the impacts of the change in the sport (1976) and troll (1977) Chinook size limits.
		Coho N. of Cape Falcon	Varies with TAC (changed later)	N	Adopted allocation was proposed by ocean fishermen and agreed to by both commercial and recreational fishermen.
		Coho S. of Cape Falcon	Varies with TAC (changed later)	Y/B	Allocation was based on historic catch between 1966-78 for TAC > 700,000 fish. Below 700,000 fish, allocations deviate from historical catch. This time period was chosen because it was prior to the period of increased regulation which altered historic patterns. It also encompasses the period of increased effort and significant contribution of hatchery fish to the catch.

⁵⁵ Consistent with Highly Migratory Species regulations, charter/headboat vessels may fish under either commercial or recreational regulations or quotas.

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category¹ /Note²	Basis for Allocation Decision
West Coast Salmon, continued	Amendment 7 (1986)	Coho/S. of Cape Falcon	Varies with TAC	N	Allocation was determined by a group composed of C&R fishermen--Change needed to "provide a more stable recreational season"
	Amendment 9 (1988)	Chinook/ N. of Cape Falcon	Varies with TAC	N	Working group from Council's SAS created the alternatives. Council's emphasis was on increasing the stability of the recreational fishery.
		Coho/N. of Cape Falcon	Varies with TAC		
South Atlantic Fishery Management Council					
Dolphin and Wahoo	FMP (2004)	Dolphin	13%:87% but non-binding. This allocation was later changed.	Y/SQ	Allocation was based on average catch 1994-97; which was the time period with the highest relative commercial catches. This non-binding cap on the commercial catch was set to determine when the Council may need to consider restrictive actions to minimize conflicts between the recreational and commercial sectors and meet the goals of the FMP.
	Comprehensive ACL Amendment (2012)	Dolphin	7.3%:92.7%	Y/L&R	The allocation followed a formula that balanced past and present participation: 50% on the longest time series available (1999-08) and 50% on recent catch (2006-08).
		Wahoo	4.3%:95.7%		
Snapper-Grouper Fishery of the South Atlantic Region	Amendment 13C (2006)	Black Sea Bass	43%:57%	Y/SQ	Allocations were provided as pounds and were based on a 35% reduction for both commercial and recreational catch (reduced as steps over 3 years). Later regulations refer to the percent allocations created from this rule.
	Amendment 15B (2009)	Red Porgy	50%:50%	Y/SQ	The alternative chosen was closest to status quo (1999-03 landings were 49%:51%). Council mentioned that the TAC may have to be adjusted if commercial were allocated >50% (due to higher discard mortality in commercial vs. recreational).
		Snowy Grouper	95%:5%	Y/L	Historical landings 1986-05 (longest time series available). Shorter time frames were not utilized because unrealistic spikes in recreational landings overly influenced the results.

Fisheries Management Plan	Regulation	Fishery	Allocation ratio (Commercial%: Recreational%)	Category¹ /Note²	Basis for Allocation Decision
Snapper-Grouper Fishery of the South Atlantic Region, continued	Amendment 16 (2009)	Gag Grouper	51%:49%	Y/SQ	Allocation was based on landings from 1999-03. This time period was chosen because it reflects recent catch. In addition, reductions were equal (35% and 37% for commercial and recreational, respectively).
		Vermillion Snapper	68%:32%	Y/L	Allocation was based on historical landings 1986-05 (longest time series available). Council noted that results did not change much if different time frames were analyzed.
	Amendment 17B (2010)	Combined Red, Black, Gag Grouper	50.5%:49.5%	N	Commercial and recreational catch limits were provided (in pounds), but no allocation was listed. Catch limits equate to allocation of 50.5%: 49.5%. The pounds were expected catch resulting from implementing Amendment 16.
		Golden Tilefish	97%:3%	Y/SQ	Allocation was based on formula Sector allocation = (.5 * average catch 1986-08) + (.5 * average catch 2006-08). Allocation would mirror historic harvest.
	Amendment 24 (2012)	Red Grouper	44%:56%	Y/L&R	Allocation was based 50% on the longest time series available (1986-08) and 50% on recent catch (2006-08).
	Comprehensive ACL Amendment (2012)	Wreckfish	95%:5%	N	Previous to this regulation, recreational fishermen discarded wreckfish, which resulted in discard mortalities (due to the depth fished). Providing a recreational allocation would help mitigate this bycatch mortality and allow recreational fishermen to retain these fish.
		Black Grouper	36.88%:63.12%	Y/L&R	The allocation followed a formula that balanced past and present participation: 50% on the longest time series available (1991-08) and 50% on recent catch (2006-08).
		45 Snapper Grouper Species	Varies	Y/L&R	The allocation followed a formula that balanced past and present participation: 50% on the longest time series available (1986-08) and 50% on recent catch (2006-08).

Appendix 1B. Initial Catch Share Allocations

Fishery Management Council	Catch Share Program	Initial Allocations	Based on Historical Catch?
Gulf of Mexico	Red Snapper Individual Fishing Quota (IFQ)	Class 1: Best 10 consecutive years 1990-2004 Class 1: Historic Captain Status: Catch from 1998-2004 Class 2: Best 5 years 1998-2004	Yes
	Grouper and Tilefish IFQ	3% of catch was set aside for solving disputes. Allocation was based on average landings from 1999-2004 minus worst year.	Yes
South Atlantic	Wreckfish Individual Transferable Quota (ITQ)	Half of the allocation was based on catch 1987-90; the other half is divided equally between all participants.	Partly
Mid-Atlantic	Surf Clam and Ocean Quahog ITQ	Surf clam: 80% of the allocation was based on historical catch 1979-88 where 1985-88 were counted twice, and you can drop the worst 2 years; 20% of the allocation was based on vessel size. Ocean quahog: Allocation was based on historical catch 1979-88 removing the worst year.	Mostly
	Mid-Atlantic Golden Tilefish IFQ	There were catch set asides: 3% for research, 5% for bycatch, 15% for appeals during the first year. Categories A-B: Allocation was based on average catch landings 2001-05. Category C: Allocation was based on equal division between all vessels.	Partly
New England	New England Multispecies Sectors	Allocation was based on catch history 1996-2006; Exception is for sectors established prior to Amendment 16 have Georges Bank Cod allocations based on catch from 1996-2001.	Yes
	Scallop General Category IFQ	Allocation was based on best year of landings times number years active: Mar. 2000-Nov. 04	Yes
Pacific	Pacific Coast Groundfish Trawl Rationalization	Target species: Allocation was based on catch history. Restricted species: Allocation was indirect and based on target species catch history and a proportional location specific bycatch rate.	Mostly
	Pacific Sablefish Permit Stacking	Catch limits were specified for 3 different "tiers" of permits which specify the maximum amount of sablefish that can be caught. Tier assignments were originally based on total catch 1984-94.	Yes

Fishery Management Council	Catch Share Program	Initial Allocations	Based on Historical Catch?
North Pacific	Alaska IFQ Halibut and Sablefish Program	Sablefish: best 5 years of catches 1985-90; Halibut: best 5 years of catches 1984-90	Yes
	Western AK CDQ Program	Established under MSA with limited opportunity for adjustments	Unknown
	Bering Sea and Aleutian Islands(BSAI) Non-Pollock Cooperatives	Target species: best 5 years 1998-2004. Note: qualified vessels that did not fish during those years can still get allocation.	Yes
	BSAI American AFA Pollock Inshore Catcher Cooperatives	Harvester coops are assigned harvest privileges based on the aggregate total amount of Pollock harvested by cooperative members 1995-97	Yes
	BSAI Crab (King and Tanner) Rationalization Program	Allocations are based on catch histories, but years (ranging from 1991-2000) vary among species.	Yes
	Central GOA Rockfish	Pilot Program (2007): best 5 years 1996-2002 Rockfish Program (2011): best 5 years 2000-06. Note: 2.5% of the initial allocation was set-aside for participants in the entry level trawl fishery 2007-09.	Yes

Appendix 2: Internet Information Sources

Fisheries Leadership and Sustainability Forum. 2010. Allocation Across the Regional Fishery Management Councils. 44 pgs.

http://www.fisheriesforum.org/sites/www.fisheriesforum.org/files/11420_FLSF_RegionalAllocationReport2010.pdf

Fisheries and Oceans Canada 2009. Groundfish Fishery Management Plan.

http://www.pac.dfo-mpo.gc.ca/fm-gp/commercial/ground-fond/form/2011/Temp_Reallocation_Halibut_Exp_Rec_Fishery.pdf

Fisheries Resource Allocation Policy. Queensland, Australia. 2003.

<http://www.deedi.qld.gov.au/documents/Corporate-Publications/Fisheries-Resource-Allocation-Policy.pdf>

Gulf of Mexico Fishery Management Council Allocation Policy.

Go to <http://www.gulfcouncil.org/> and search for “allocation policy”

Sharing the Fish Conference. 2006.

<http://www.fish.wa.gov.au/docs/events/ShareFish/index.html>