Recommended practices and factors to consider when reviewing[1] and making allocation decisions

Background

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(c)(1)[2]. Information relevant for making allocation decisions can be found in the Magnuson-Stevens Fishery Conservation and Management Act (MSA)[3] as well as other guidance or policy documents written by NOAA or NMFS (see Appendix A). Allocation can be across jurisdictions (e.g., international, state, regional), across sectors (e.g., commercial, for-hire, private anglers, tribal, research), and within sectors (e.g., individual fishermen, gear types). Allocation of fishery resources is a complex issue facing fishery managers because of the history and tradition of access to fishery resources, the perceptions of equity that arise with allocation decisions, and differences in the economic and social values competing user groups place on those resources. In addition, fisheries management is not static and needs to be adaptable as environmental, ecological, social, and economic influences change. Therefore, allocation decisions need to be considered in the context of adaptive management.[4]

In 2011, NMFS issued a contract for an outside entity to interview stakeholders about allocation issues. The report (Lapointe, 2012)[5] is the first comprehensive compilation of fisheries allocation issues. NMFS commissioned the report to provide a framework that will facilitate a productive discussion about allocation decisions and socio-economic objectives for fisheries management. It summarizes input from discussions with a wide range of stakeholders and 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) periodically review allocation decisions, 4) compile a list of past allocation decisions, and 5) create a list factors to guide allocation decisions.

This document addresses the fifth recommendation by providing a summary of recommended practices and guidance on allocation factors that a Regional Fishery Management Council (Council) should consider when making allocation (initial or reallocation) decisions. The factors to consider can be tied directly to the MSA and other legal mandates and thus should already be considered in the fisheries

[1] For the purposes of this document "review" is the evaluation that leads to the decision of whether or not the development and analysis of alternative allocations is warranted, and is not, in and of itself, an implicit trigger to consider alternative allocation.

[2] www.nmfs.noaa.gov/sfa/laws_policies/national_standards/documents/national_standard_4_cfr.pdf

[3] www.nmfs.noaa.gov/sfa/laws_policies/msa/documents/msa_amended_2007.pdf

[4] We describe adaptive management as the on-going process of evaluating if management objectives have been met and adjusting management strategies in response. We do not include large scale scientific manipulations aimed at answering scientific questions.

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

management process. The recommended practices are ideas that could improve the allocation process by increasing transparency and minimizing conflict. The Council Coordinating Committee is creating a companion document that describes triggers that can be used to determine when to review allocation decisions, addressing the Lapointe report's third recommendation. For the other three recommendations, NMFS has published two technical memorandums that contain a list of past allocation decisions[6,7] and is continuing to work to increase stakeholder engagement and biological and social science research.

Recommended Practices When Reviewing and Making Allocation Decisions

Several recommended practices would improve the allocation process by increasing transparency and minimizing conflict. A list of recommended practices is below, although it should not be considered comprehensive and may not be applicable to all circumstances.

1. **Evaluate and Update Council and Fishery Management Plan (FMP) Objectives.**
   Council fishery management decisions often involve trade-offs (e.g., between management objectives within a fishery, or between two fisheries under the Council's jurisdiction). For example, maintaining employment may be in conflict with improving economic efficiency. Similarly, long-term goals related to rebuilding stocks may also be in conflict with short-term goals of protecting communities dependent on a fishery. Updated and measurable objectives help clarify decisions about these trade-offs within and between FMPs. If FMP objectives are not current, clear, or measurable, a Council should re-assess the FMP objectives prior to initiating the allocation discussion.[8] In addition, the Council should determine a transparent process for analyzing and determining trade-offs between FMP's.

2. **Identify User Needs**.
   The specific needs and interests of the different types of fishery participants or sectors within a fishery may vary. For example, recreational fishermen may be more interested in stable fishing opportunities than absolute numbers of fish retained. Therefore, articulating the needs of each type or sector should be completed near the beginning of the allocation process to facilitate identification of alternatives which may reduce conflict. Once user needs are identified

[6] Morrison, W.E., T.L. Scott. 2014. Review of Laws, Guidance, Technical Memorandums and Case Studies Related to Fisheries Allocation Decisions. U.S. Dept. of Commer. NOAA Technical Memorandum NMFS-F/SPO-148, 32 p.
www.nmfs.noaa.gov/sfa/laws_policies/national_standards/documents/morrison_scott_nmfs_f_spo_148.pdf

[7] 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.
http://www.nmfs.noaa.gov/sfa/laws_policies/national_standards/documents/plummer_allocationfishharvests_tm115_web_final.pdf

[8] See National Standard 1 Guidance. Proposed rule published January 20, 2015 (80 FR 2786).

through a public process, those needs should be communicated and publicly available.

3. **Minimize Speculative Behavior.**
In order to limit situations which may lead to speculative behavior or practices,[9] whenever allocations are being considered, the Council should consider announcing a control date, which is published by NMFS as an advance notice of proposed rulemaking. The control date puts participants on notice that any entrance or increased effort into a fishery beyond said date may not be used to determine allocations. Announcing a control date is common practice when creating limited access and catch share programs, but could also be used for allocation decisions between gear types, sectors, or groups.

4. **Plan for Future Conditions.**
Councils should consider pre-arranged management responses (such as if/then management decisions called "frameworks"[10]) where appropriate, and consistent with the MSA, Administrative Procedure Act, National Environmental Policy Act, and other applicable law, to plan for potential future conditions. Two if/then management decision examples follow. First, the Bering Sea and Aleutian Islands (BSAI) FMP includes pre-arranged allocations for yellowfin sole between two sectors depending on the total allowable catch (TAC). If the TAC for the two sectors is greater than 125,000 metric tons (mt), then the first sector is allocated 60 percent; if the TAC for the two sectors is less than 125,000 mt, then the first sector receives an increasing apportionment.[11] In a second example, Mid-Atlantic bluefish allocation is currently set as 83% recreational and 17% commercial. However, the FMP states that if the recreational sector is not projected to land its harvest limit for the upcoming year, the commercial catch limit may be increased for that year.

A pre-arranged management response may be one option for allocating catch of a species that is expected to rebuild or shift distribution due to climate change, for example. Identifying, upfront, specific conditions that may result in changes in allocations could decrease controversy. We note that not all circumstances may be amenable to pre-arranged responses. For example, if external factors change significantly, the original analysis of impacts may no longer be considered adequate because the analysis would not capture the complete range of potential impacts or outcomes.

[9] For example, if fishermen expect future allocations to be based on catch history, they may decide to increase catch in order to improve their catch history, etc.
[10] www.nmfs.noaa.gov/sfa/domes_fish/GUIDELINES.PDF, pages A67 –A69 "The Framework Concept".
[11] Northern Economics, Inc. *Five-Year Review of the Effects of Amendment 80 to the Bering Sea and Aleutian Islands Groundfish Fishery Management Plan.* Prepared for North Pacific Fishery Management Council. April 2014.

Factors to Consider When Reviewing and Making Allocation Decisions

Typically allocation decisions mirror historical use of the resource as the government is hesitant to limit historically established fishing rights and access.[12] While this response is appropriate in certain situations, other factors such as those factors described with respect to the definition of "optimum"[13] under the MSA should be considered when reviewing and making an allocation decision to ensure the greatest overall benefit to the nation.[14]

The list of factors is not all-inclusive, as other appropriate factors may need to be considered. Factors should be compared between groups for which an allocation decision is relevant. While these factors should be considered in making an allocation decision, the factors do not require any particular outcome with respect to allocations. Rather they are intended to provide a framework for the allocation analysis. The priority and weight afforded each factor will vary depending on the time horizon of the decision,[15] the objectives of the allocation decision, the objectives of the FMP, and the overarching Council goals. If a factor is determined not applicable or unimportant for the allocation decision in question, the Council should clearly document its rationale for the determination for the record. Such documentation is necessary to produce a strong record demonstrating that the factor has been considered.

1. Ecological Factors

Weakened or damaged marine ecosystems support a lower abundance and diversity of fish species, and may have a harder time adjusting to acute (e.g., hurricane) or long-term (e.g., climate change) impacts than healthy ecosystems. Because different fishing practices (locations fished, gears used, etc.) can have varied impacts on the marine ecosystem, decisions that determine the allocation between different sectors or groups should consider the potential ecological impacts of the allocation alternatives. Relevant ecological questions that could be considered include, but are not limited to:

a. What are the expected ecological impacts on other fisheries?[16] What are the bycatch rates of both non-target species and protected species as

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

[13] As defined in MSA 3(33) [16 U.S.C. § 1802(33)]: "the term 'optimum', with respect to the yield from a fishery, means the amount of fish which— (A) 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; (B) is prescribed as such on the basis of the maximum sustainable yield from the fishery, as reduced by any relevant economic, social, or ecological factor; and (C) in the case of an overfished fishery, provides for rebuilding to a level consistent with producing the maximum sustainable yield in such fishery".

[14] Mandated by National Standard 1: MSA 301(a)(1) [16 U.S.C. § 1851 (a)(1)].

[15] For example, factors may be weighed differently when considering in-season allocation changes versus longer term changes such as decisions that last years.

[16] Mandated by National Standard 9: MSA 301(a)(9) [16 U.S.C. § 1851 (a)(9)] and MSA 303(a)(7) and (9) [16 U.S.C. §§ 1853 (a)(7) and (9)].

well as their post-release mortality rate? What is the status of alternate target species?

Ecological impacts can overlap among fisheries. The main ways ecological interactions occur are through bycatch, habitat, predator-prey dynamics, etc. For example, target species in one fishery can be incidental catch or bycatch in another. In addition, if the allocation of one species decreases, fishermen may increasingly target another species. Managers should, therefore, assess the impacts of the current sectors or groups on other fisheries and how these might be adjusted if the allocation changes. For example, if reducing bycatch is a priority then lowering allocations to high bycatch sectors or gears could be considered. Undocumented sources of mortality (such as unreported catch or mortality due to oil spills or red tides) to target or bycatch stocks should also be considered.

b. What are the impacts on the marine ecosystem?[17] What are the impacts on habitat?

What are the impacts on the ecological community (e.g., relevant predator, prey, or competitive dynamics)?

Fishing can change an ecosystem through both direct and indirect effects. Direct effects include mortality of target and non-target species (which can change abundance, productivity and distribution of the species), interactions with marine mammals, and disturbance of marine habitat. Indirect impacts to the ecosystem include removal of predators, prey, competitors, or structure that could result in shifts in the ecological community. Allocation alternatives should consider these direct and indirect impacts to the ecosystem.

2. Economic Factors

Allocation of a fishery resource has economic consequences for affected user groups. Councils should be very specific in articulating what economic questions they want to consider when making allocation decisions. The following questions should be considered:

a. Can economic efficiency be improved?[18]

Councils should consider if the current or preferred allocation results in the most economically efficient use of resources. Cost-benefit analyses should be used to estimate how a proposed allocation would change consumer and producer

[17] Mandated by National Standard 9: MSA 301(a)(9) [16 U.S.C. § 1851 (a)(9)] and MSA 303(a)(7) [16 U.S.C. §1853 (a)(7)].

[18] Mandated by National Standard 5: MSA 301(a)(5) [16 U.S.C. § 1851 (a)(5)]; which states: "Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose." According to the National Standard 5 Guidelines, "[t]his standard prohibits only those measures that distribute fishery resources among fishermen on the basis of economic factors alone, and that have economic allocation as their only purpose." 50 C.F.R. § 600.330(e). However, these Guidelines also state: 1) "Given a set of objectives for the fishery, an FMP should contain management measures that result in as efficient a fishery as is practicable or desirable", 50 C.F.R. § 600.330(b)(1)- (2); "'conservation' constitutes wise use of all resources involved in the fishery, not just fish stocks", 50 C.F.R. § 600.330(b)(2)-(3); "[a]n FMP should demonstrate that management measures aimed at efficiency do not simply redistribute gains and burdens without an increase in efficiency." 50 C.F.R. § 600.330(b)(2)(i).

surplus (i.e., net economic benefits). Economic efficiency refers to how well resources are utilized in production and consumption[19]; economic efficiency is achieved when all resources are allocated to their most productive use, so that no additional mutually beneficial trades of goods and services are possible, and thus net economic benefits are maximized. Analyses that estimate the monetary value individuals or sectors place on the marginal value of their share of the harvest (i.e., "willingness to pay") can inform how allocation changes could improve economic efficiency. Methods for estimating the economic efficiency of an allocation decision are being continually improved[20].

b. What are the economic impacts (e.g., employment, income, etc.) of potential changes in allocation?[21]

Changes to sales, income and employment levels as measured by economic impact analyses (i.e., input-output models) should only be used to understand the short-term distributive effects of allocation decisions on the affected communities, states, or regions[19] (see social impacts below). Unlike economic efficiency, economic impacts are not measures of social well-being. In general, allocations that increase economic impacts will lead to decreased economic efficiency. An allocation that maximizes economic impacts would reward the highest spender or highest cost producer, and thereby promote inefficient practices and processes and reduce economic efficiency relative to alternative allocations. Additionally, because those affected by a change in allocation will likely adjust their behavior in response to a different allocation, for example, when recreational fishermen spend money on other recreational alternatives under a reduced allocation, it is difficult to determine whether the economic impacts of an alternative allocation on the regional economy will be positive or negative after those behavioral adjustments have occurred.

3. Social Factors

Allocation of a fishery resource can have social consequences on individuals and communities. For example, updating geographically fixed allocations (e.g., state by state allocations) could impact the surrounding community by changing the demand for processing facilities, boats, and supplies such as bait and ice. The following questions on social factors should be considered:

a. Is an allocation fair and equitable?[22]

Equity is an important issue in fisheries management. National Standard 4 requires that if an allocation is made "among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen…"[23] Methods exist to gather information on the impacts of an allocation alternative, though

[19] *Op. Cit.* Plummer et al. 2012.

[20] NMFS is developing technical guidance on best practices that will clarify emerging issues and the appropriate implementation and use of economic impact and economic efficiency analyses.

[21] Mandated by National Standard 8: MSA 301(a)(8) [16 U.S.C. § 1851 (a)(8] and MSA 303(a)(9) [16 U.S.C. § 1853 (a)(9)].

[22] Mandated by National Standard 4: MSA 301(a)(4) [16 U.S.C. § 1851 (a)(4)], and EO12866. www.archives.gov/federal-register/executive-orders/pdf/12866.pdf.

[23] National Standard 4: MSA 301(a)(4) [16 U.S.C. § 1851(a)(4)].

assigning labels of "fairness" will remain subjective and the perception of "fair and equitable" will vary among individuals and sectors.[24] Social impact analyses can point to potential disproportionate impacts of allocation decisions. Relevant sectors and sub-groups may include, among others, vessels of different size categories, target species, or gear; communities of different sizes and different levels of social vulnerability and fisheries dependence; large versus small businesses[25], or groups of fishermen from different states.

"Well-being" can also inform equity. Two broad principles of equity can be considered: vertical equity and horizontal equity. The former serves to assess the equity of those impacts on entities with different levels of "well-being" prior to a new regulation, while the latter helps evaluate the equity of those impacts across entities that have the same level of well-being prior to a new regulation. "Well-being" is difficult to measure quantitatively, and thus, income, wealth, and other factors are often used as proxies. For example, assume a new regulation requires that all vessel owners must purchase a vessel monitoring system (VMS) and the initial cost of the VMS is the same for all vessel owners. This regulation would be determined horizontally equitable because owners with the same income/wealth would pay the same cost and thus the relative impact would be the same. However, if some vessel owners have lower income/wealth than others, it would not be considered vertically equitable because the cost or impact on entities with lower income/wealth would be relatively greater than the impact on those with higher income/wealth.

b. Are there disproportionate adverse effects on low income and/or minority groups?[26]

Consistent with Executive Order 12898, Councils should continue to review proposals for actions that could have disproportionate and adverse effects on low-income and/or minority groups, including federally recognized tribes. Environmental justice assessments would include a review of impacts on individuals and entities that are only indirectly affected by regulatory decisions (e.g., minority processing workers whose jobs might change due to fisheries allocation decisions that impact the amount and/or timing of fish processing).

c. What is the importance of fishery resources to fishing communities? [27]

In 1996, the MSA added provisions that required Councils to take into account potential effects of actions on fishing communities. National Standard 8 stipulates "[c]onservation and management measures shall, consistent with the conservation requirements of this Act…, take into account the importance of fishery resources to fishing communities…".[28] It goes on to say that this factor

[24] *Op. cit.* Lapointe 2012.
[25] Mandated by Regulatory Flexibility Act [5 U.S.C. §§ 601 et seq.]: www.gpo.gov/fdsys/granule/USCODE-2011-title5/USCODE-2011-title5-partI-chap6-sec601 and Executive Order 13272: www.gpo.gov/fdsys/pkg/FR-2002-08-16/pdf/02-21056.pdf.
[26] Mandated by National Environmental Policy Act [42 U.S.C. §§ 4321 et seq]: www.gpo.gov/fdsys/pkg/USCODE-2010-title42/pdf/USCODE-2010-title42-chap55-sec4321.pdf and Executive Order 12898: www.gpo.gov/fdsys/pkg/WCPD-1994-02-14/pdf/WCPD-1994-02-14-Pg276.pdf
[27] Mandated by National Standard 8: MSA 301(a)(8) [16 U.S.C. § 1851 (a)(8].
[28] *Ibid*

should be taken into account in order to provide for the sustained participation of communities in fishing and to minimize adverse economic impacts, to the extent practicable. Questions that could be considered include but are not limited to:

i. What is the individual, local, and regional dependence and engagement in each sector[29,30]?

What is the current dependence and engagement and how are these expected to change in the future (both under the status quo and under the allocation alternatives being considered)? Fishing dependence and engagement analyses should include potential impacts to commercial, for-hire, private angler, and subsistence fishing, as well as shoreside support industries, and should consider impacts at various geographical levels (i.e., local/regional/national). For example, dependence and engagement may decrease locally based on decreased opportunities in a particular fishery, but increase on a regional level based on greater opportunities in a different fishery. In addition, the importance of a given species or fishing activity to a culture should be considered when making allocation decisions.

ii. What is the community's vulnerability and adaptive capacity?

Some communities may be more negatively impacted by changes to fishing production or fishery access than others. Social indicators have been developed that describe the vulnerability of a fishing community to "disruptive events" (Jepson and Colburn 2013)[31], such as a change to a group or sector's access to a fishing resource. For example, a community's current and historical dependence on a fishery can suggest a community's vulnerability and possible response to a change in commercial or recreational fishing access. [32] Similarly, understanding a community's ability to adapt to changes may be useful (e.g., the adaptive capacity metric developed by Mathis et al. 2014[33]).

iii. Are there other social impacts?

Changes to how fisheries are managed can have other social impacts. For example, reducing an allocation may decrease safety if access to a fishery is restricted to a limited number of days (e.g., shortened season) and fishermen must decide whether to fish despite unsafe conditions or miss the year's landings of that fishery (referred to as "derby" fishing).[34] Another example is potential impacts to non-consumptive uses of the

[29] Guidance for Social Impact Assessment: www.nmfs.noaa.gov/sfa/laws_policies/economic_social/index.html

[30] Sepez, J., K. Norman and R. Felthoven. 2007. A quantitative model for ranking and selecting communities most involved in commercial fisheries. *NAPA Bulletin* 28, 43-56. 160.

[31] Jepson, M., and L. L. Colburn 2013. Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions. U.S. Department of Commerce, NOAA Tech. Memo NMFS-F/SPO-129, 64p. see http://spo.nmfs.noaa.gov/tm/TM129.pdf

[32] *Op. Cit.* Guidance for Social Impact Assessment.

[33] Mathis, J. T., S. R. Cooley, N. Lucey, S. Colt, J. Ekstrom, T. Hurst, C. Hauri, W. Evans, J. N. Cross, R.A Feely. 2014. Ocean acidification risk assessment for Alaska's fishery sector. Progress in Oceanography.

[34] Mandated by National Standard 10: MSA 301(a)(10) [16 U.S.C. § 1851 (a)(10)].

resource, such as tourism or the intrinsic beauty of the ecosystem. Will other groups (e.g., beach goers, whale watchers, birders) be negatively impacted by a change in allocation?

4. Indicators of Performance and Change

Councils should assess the current conditions of a fishery and document changes to the fishery that may indicate the need for updated allocations. Here we include trends in landings, changes in distribution of the stocks, or updates to the status of the stocks, but other relevant changes should also be considered. Relevant to these consideration are the quality and availability of the data. The following questions on performance should be considered:

a. What are the trends in catch/landings[35]?

Historical and current catch and landings data can provide important information about demand, after accounting for changes in annual catch limits and quotas. Past overages or underages should not be used to penalize or reward a group or sector, however, short-term, in-season adjustments based on expected underages could be used to ensure full utilization of resources. Paybacks (reducing a catch limit in a subsequent year to account for an overage in the previous year) have been instituted as a mechanism to account for the biological impacts of overages; however, similar to in-season adjustments, they represent short-term fixes and not long-term changes to the allocations specified in fishery management plans. If there is a perpetual need for paybacks, this could indicate the need to reassess allocation, recognizing that there could also be monitoring or other management changes that need to be addressed. Caution should be exercised to avoid creating a perverse incentive system in the fishery and in its management. It is important to consider the reasons behind the overages or underages, such as lag time between catch and reporting, poor prediction of catch and ineffective effort controls, misreporting by fishermen, or intentional underages (e.g., for the purpose of maintaining higher catch rates).

b. What is the status of fishery resources[36]?

A Council should consider the status of a stock (e.g., stock is undergoing overfishing, not undergoing overfishing, rebuilding, rebuilt) when determining allocations. MSA clarifies that harvest restrictions and recovery benefits must be allocated "fairly and equitably among the commercial, recreational, and charter fishing sectors in the fishery"[37]; therefore, the costs and benefits to individuals and/or sectors should be considered when updates to stock status result in increases or decreases in allocations.

c. Has the distribution of the species changed?

[35] Mandated by MSA 303(a)(13) [16 U.S.C. § 1853 (a)(13)].
[36] Mandated by MSA 303(a)(10) [16 U.S.C. § 1853 (a)(10)].
[37] Mandated by MSA 303(a)(14) [16 U.S.C. § 1853 (a)(14)].

The distribution of species alter over time for reasons such as climate change (Nye et al. 2009)[38] or a higher or lower abundance (Bell et al. 2014)[39], among others. This may create jurisdictional disputes when the distribution crosses international or state boundaries. Where the spatial distribution of the species does not match the spatial distribution of the allocation or geographic location of the fishermen, the allocation may need to be updated. In such situations, continuation of the historical allocation can lead to large transportation costs and increased greenhouse gas emissions, among other impacts, if the fishermen follow the moving species. Alternatively, switching allocations may disadvantage fishermen historically dependent on the species.

d. What is the quality of information available for each sector or group?[40]

Councils should consider the quality and availability of data (i.e. collected by NMFS, states, sectors, or individuals) when making allocation decisions. This can include quality or quantity of information on catch/release/interactions (e.g. observer data), social and economic data, or biological samples (e.g. age, growth, reproduction). Higher quality and availability of data may reduce uncertainty and provide better information on the biological, social, or economic performance of the fishery and help determine if the fishery is meeting the goals and objectives of the FMP. For example, due to scientific uncertainty, data poor stocks are often managed at a lower catch limit than data rich stocks. Increasing an allocation to a group or sector that provides better biological information may allow for higher retainable catch (due to less of a buffer for uncertainty) in the future. Lack of detailed data should not be used to penalize a sector or a group; however, increased allocations could be considered as an incentive to improving data quality. Allocation decisions which incentivize cooperative research or accurate self-reported data could also be considered in data poor situations.

Summary

Allocation of fishery resources is a complex issue facing fishery managers. Since fisheries management, and the conditions surrounding fisheries are not static, allocation decisions need to be considered in the context of adaptive management. This document provides recommended practices and guidance on allocation factors that a regional fishery management council should consider when making allocation decisions. The Council Coordinating Committee created a companion document that describes triggers that can be used to determine when to review allocation decisions. NMFS is committed to working with the Councils to assist them in their allocation decisions.

[38] Nye, J. A., Link, J. S., Hare, J. A., and Overholtz, W. J. 2009. Changing spatial distribution of fish stocks in relation to climate and population size on the Northeast United States continental shelf. Marine Ecology Progress Series 393: 111-129.

[39] Bell, R.J, J.A. Hare, J.P. Manderson, and D. E. Richardson. 2014. Externally Driven Changes in the Abundance of Summer and Winter Flounder. ICES Journal of Marine Science. doi: 10.1093/icesjms/fsu069.

[40] Mandated by MSA 303(a)(5) [16 U.S.C. § 1853 (a)(5)].

Appendix A: Existing National Policy

1. Magnuson-Stevens Fishery Conservation and Management Act (MSA)[41]

Language relevant to allocation decisions is found throughout the MSA, most significantly in National Standards 1, 4, 5, 8, and 9 concerning optimum yield, allocation, economic efficiency, communities, and bycatch, respectively. MSA section 303A(c)(3) and (c)(5) specifies requirements for determining initial allocations and fishing community allocations for Limited Access Privilege Programs (LAPPs)[42]. MSA sections 303(a)(14), 303(b)(6), 303(b)(11), and 304(e)(4)(b) also detail considerations for allocation decision making.[43]

a. **National Standard 1[44]:** "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."
b. **National Standard 4[45]:** "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."
c. **National Standard 5[46]:** "Conservation and management measures shall, where practicable, *consider* efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose."
d. **National Standard 8[47]: "**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."
e. **National Standard 9[48]: "**Conservation and management measures shall, to the extent practicable,
   (A) minimize bycatch and
   (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch."
f. **LAPP: Authorization of allocations to fishing communities[49]: "**To be eligible to participate in a limited access privilege program to harvest fish, a fishing

[41] www.nmfs.noaa.gov/sfa/laws_policies/msa/documents/msa_amended_2007.pdf
[42] 16 U.S.C. §§ 1853a. Limited Access Privilege Programs are a subset of Catch Share Programs.
[43] 16 U.S.C. §§ 1853(a)(14), (b)(6), (b)(11); 16 U.S.C. § 1854(e)(4)(b).
[44] MSA 301(a)(1) [16 U.S.C. § 1851(a)(1)].
[45] MSA 301(a)(4) [16 U.S.C. § 1851(a)(4)].
[46] MSA 301(a)(5) [16 U.S.C. § 1851(a)(5)].
[47] MSA 301(a)(8) [16 U.S.C. § 1851(a)(8)].
[48] MSA 301(a)(9) [16 U.S.C. § 1851(a)(9)].
[49] MSA 303A(c)(3) [16 U.S.C. § 1853a(c)(3)].

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."

g. **Limited Access Privilege Programs (LAPP), Requirements for initial allocations[50]:** "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."

h. **LAPP: Authorization of the use of Auctions[51]:** "In establishing a limited access privilege program, a Council shall consider, and may provide, if

[50] MSA 303A(c)(5) [16 U.S.C. § 1853a(c)(5)].
[51] MSA 303A(d) [16 U.S.C. §§ 1853a(d) et seq.].

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 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."

i. Other Applicable Sections:

MSA 303(a)(9)[52] requires that "[c]onservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch."

MSA 303(a)(14)[53] 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."

MSA 303(b)(6)[54] 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.

MSA 303(b)(11)[55] authorizes setting aside a portion of the total quota "for use in scientific research."

MSA 304(e)(4)(B)[56] provides that rebuilding programs must allocate "overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery."

2. Relevant NMFS Documents. For additional documents, see Morrison and Scott 2014.[57]

a. National Standard Guidelines.[58]

NMFS provides official guidance on what the National Standards mean for fisheries management. Guidance for NS4, and NS5 were revised in 1998, NS8 and NS9 in 2008 and NS1 in 2009 and 2015.

b. NOAA Catch Share Policy.[59]

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[52] 16 U.S.C. §§ 1853(a)(9).
[53] 16 U.S.C. §§ 1853(a)(14).
[54] 16 U.S.C. §§ 1853(b)(6).
[55] 16 U.S.C. §§ 1853(b)(11).
[56] 16 U.S.C. §§ 1854(e)(4)(B).
[57] Morrison, W.E., T.L. Scott. 2014. Review of Laws, Guidance, Technical Memorandums and Case Studies Related to Fisheries Allocation Decisions. U.S. Dept. of Commer. NOAA Technical Memorandum NMFS-F/SPO-148, 32 p. www.nmfs.noaa.gov/sfa/laws_policies/national_standards/documents/morrison_scott_nmfs_f_spo_148.pdf.
[58] www.nmfs.noaa.gov/sfa/laws_policies/national_standards/index.html
[59] www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/noaa_cs_policy.pdf

The NOAA Catch Share Policy provides guidance on making initial allocation decisions for catch share[60] programs. In addition, the policy states that all allocation decisions should be revisited on a regular basis under a catch share program or other management approach.

c. NMFS Economic and Social Impact Assessment Guidance.[61]
NMFS has created guidance for completing economic and social impact analyses for fishery regulations. These documents provide guidance on completing these analyses for any fishery management decision, including allocation decisions.

d. NOAA National Saltwater Recreational Fisheries Policy.[62]
"The policy identifies goals and guiding principles to be integrated into NMFS' planning, budgeting, decision-making, and activities, and includes examples of implementation concepts and strategies supported by NMFS." Under the second principle, one example of an implementation strategy is the "recurring evaluation of fishery allocations to facilitate equitable distribution of fishing opportunities as fisheries develop and evolve."

[60] Catch Share is a general term for several fishery management strategies that allocate specific portions of a fishery's total allowable catch to individuals, cooperatives, communities, or other entities. Each recipient of a catch share is directly accountable to stop fishing when its exclusive allocation is reached. The term includes specific programs defined in law such as "limited access privilege" (LAP) and "individual fishing quota" (IFQ) programs, and other exclusive allocative measures such as Territorial Use Rights Fisheries (TURFs) that grant an exclusive privilege to fish in a geographically-designated fishing ground.

[61] www.nmfs.noaa.gov/sfa/laws_policies/economic_social/index.html

[62] www.nmfs.noaa.gov/sfa/management/recreational/documents/noaa_recfish_policy.pdf