Department of Commerce * National Oceanic & Atmospheric Administration * National Marine Fisheries Service

NATIONAL MARINE FISHERIES SERVICE PROCEDURAL DIRECTIVE 01-119-02
July 27, 2016

Fisheries Management
Fisheries Allocation Review Policy

RECOMMENDED PRACTICES AND FACTORS TO CONSIDER WHEN REVIEWING AND MAKING ALLOCATIONDECISIONS

NOTICE: This publication is available at: http://www.nmfs.noaa.gov/op/pds/index.html

OPR: F/SF (W. Morrison)
Type of Issuance: Initial

Certified by: F/SF (A. Risenhoover)

SUMMARY OF REVISIONS:

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

Background

An allocation (or assignment) of fishing privileges 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]. The Magnuson-Stevens Fishery Conservation and Management Act (MSA)[3] as well as other guidance or policy documents written by NOAA or NMFS include provisions, guidance, or information relevant to allocation decisions (see Appendix A for details). The guidance provided here does not modify or supersede any guidance associated with the National Standards, other provisions of the MSA or other applicable laws; rather, it is intended to help the Councils and NOAA review and update allocations under the MSA. Allocation can be across jurisdictions (e.g., 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

[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

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 should 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 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 of 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)[6] should consider when making allocation (initial or reallocation) decisions. The factors are drawn from, or are relevant to, MSA provisions and other legal mandates and thus should already be considered in the fisheries management process. The recommended practices are ideas that could improve the allocation process by increasing transparency and minimizing conflict. The Council Coordinating Committee created a companion document[7] 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[8, 9] and is continuing to work to increase stakeholder engagement and biological and social science research.

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[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). Available: www.nmfs.noaa.gov/stories/2013/01/docs/lapointe_allocation_report_final.pdf

[6] Throughout this document, guidance for Fishery Management Councils also pertains to Atlantic High Migratory Species Secretarial actions.

[7] NMFS Procedural Directive 01-119-01, Criteria for Initiating Fisheries Allocation Reviews, Council Coordinating Committee Allocation Working Group Document. http://www.nmfs.noaa.gov/op/pds/documents/01/119/01-119-01.pdf

[8] 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 Commerce. 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

[9] 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. www.nmfs.noaa.gov/sfa/laws_policies/national_standards/documents/plummer_allocationfishharvests_tm115_web_final.pdf

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.

a. **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 minimizing impacts on fishery-dependent communities. 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 or concurrent to initiating the allocation discussion.[10] In addition, the Council should use a transparent process for analyzing and determining trade-offs between FMP objectives and/or FMPs.

b. **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 discussion to facilitate identification of alternatives, which may reduce conflict. Once user needs are identified through a public process, those needs should be communicated and publicly available.

c. **Minimize Speculative Behavior.**
To limit situations which may lead to speculative behavior or practices[11] whenever allocations are being considered, the Council should consider announcing a control date for a given fishery, by sector as appropriate, which is published by NMFS as an advance notice of proposed rulemaking. The control date provides notice that, if an allocation decision is made in an FMP or FMP amendment, there is no assurance that any entrance or increased effort into a fishery beyond said date will 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.

d. **Plan for Future Conditions.**
To plan for future conditions, Councils may consider adopting in an FMP or FMP amendment mechanisms for implementing actions in an expedited manner, where

[10] For general information on FMP objectives in the National Standard Guidelines, *see* 50 C.F.R. § 600.305(b): http://www.fisheries.noaa.gov/sfa/laws_policies/national_standards/documents/national_standards_general_cfr.pdf.
[11] 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.

appropriate and as consistent with the MSA, Administrative Procedure Act, National Environmental Policy Act, Executive Order 13653, and other applicable law. [12] For example, the Bering Sea and Aleutian Islands FMP includes pre-arranged "if/then" 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.[13] The Mid-Atlantic bluefish FMP provides an example of a mechanism that incorporates more discretion than the example provided above. The Mid-Atlantic bluefish allocation is currently set as 83% recreational and 17% commercial.[14] However, the FMP states that if the recreational sector is not projected to land its harvest limit for the upcoming year, then the commercial catch limit may be increased for that year as long as the combination of the projected recreational landings and the commercial quota does not exceed the total allowable landings.

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.

[12] Some of these types of mechanisms are referred to by regions as "frameworks". *See* Appendix 3 of the NMFS Operational Guidelines at p. 3 at http://www.fisheries.noaa.gov/sfa/management/councils/operational_guidelines/og_append.pdf. As the Guidelines explain, frameworking is not intended to circumvent standard FMP/amendment and rulemaking procedures, and must be done consistent with the MSA and other applicable law. To the extent that MSA and other statutory requirements can be addressed up front when establishing such a mechanism, this may result in less analysis and process being needed when individual actions are executed under that mechanism. What analysis and process (including public comment) is required for each individual action will depend on the specific facts and circumstances of that action. *Id.*

[13] 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.

[14] Amendment 1 to the FMP for the Atlantic Bluefish Fishery, 65 FR 45844 (January 26, 2000).

Factors to Consider When Reviewing and Making Allocation Decisions

Typically allocation decisions are closely aligned with historical use of the resource because the government[15] is hesitant to limit historically established privileges and access (Rolph, 1983).[16] While historical use may (or in some instances, shall) be taken into consideration when reviewing and making an allocation decision,[17] the MSA requires achieving on a continuing basis the optimum yield (OY) from each fishery, which encompasses a broader range of considerations.[18] Recognizing this, below is a list of different factors to consider when reviewing and making an allocation decision.

The list of factors is not all-inclusive, as there may be other appropriate factors to consider. The factors do not prescribe any particular outcome with respect to allocations, but rather, are intended to provide a framework for the allocation analysis. Factors should be compared between groups for which an allocation decision is relevant. The priority and weight afforded each factor will vary depending on the time horizon of the decision,[19] the objectives of the allocation decision, the objectives of the FMP, and the overarching Council[20] 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. Analysis of an allocation decision under these factors is not a substitute for documenting compliance with MSA mandates, although there may be overlap between certain factors and MSA mandates. Of particular note, National Standard 4, discussed under Social Factors below, has explicit requirements pertaining to allocations of fishing privileges.

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[21]) impacts than healthy ecosystems. Because different fishing practices

[15] Rolph includes a wide range of resources in his analysis (forests, air waves, etc.). However, in most marine fisheries, Councils and Commissions in coordination with federal and state governments make the allocation decisions.

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

[17] For example, for limited access privilege programs, historical harvests and historical participation of fishing communities are among the required considerations for establishing procedures for allocations. 16 U.S.C. § 1853a(c)(5)(A).

[18] 16 U.S.C. § 1851(a)(1) (National Standard 1). "'[O]ptimum', 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". 16 U.S.C. § 1802(33).

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

[20] Whenever Fishery Management Councils are mentioned, this guidance also pertains to Atlantic High Migratory Species Secretarial actions.

[21] Climate change impacts could be positive or negative for individual species or systems.

(locations fished, gear types used, etc.) can have varied impacts on the marine ecosystem, decisions that determine the allocation between different sectors or groups should take into consideration the potential ecological impacts of allocation alternatives. When making allocation decisions, relevant ecological questions could include, but are not limited to:

a. What are expected ecological impacts on target species?

Sectors can differ in their impacts on the target species. For example, sectors may target different stocks, sizes, or age classes, which could impact the productivity, distribution, yield, and/or recovery potential of the species.

b. What are the expected ecological impacts on other fisheries? What is the status of non-target species[22]? What are the expected impacts on bycatch and bycatch mortality of both non-target species and protected species?

Ecological impacts can overlap among fisheries.[23] Some 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 assess the potential ecological impacts of a change in allocation to other fisheries when making allocation decisions. For example, if reducing bycatch is a priority then lowering allocations to sectors or gear types that have high bycatch could be considered.

c. What are the impacts on the marine ecosystem?[24] 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 stocks, interactions with marine mammals or other protected species, 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. Managers should consider the direct and indirect impacts of different allocation alternatives to the ecosystem when making allocation decisions. For example, decreasing allocations to gears that have high impacts on biotic hard-bottom habitats could be considered.

2. Economic Factors

Allocation of a fishery resource has economic consequences for affected user groups that should be considered. Councils should be very specific in articulating what economic questions they want to consider when making allocation decisions. When making allocation decisions, relevant economic questions could include, but are not limited to:

a. Can economic efficiency be improved?

Councils should consider if the current or preferred allocation results in the most economically efficient[25] use of resources. Cost-benefit analyses should be used to

[22] For the purpose of this document, non-target species are the species that were retained but were not the primary target species.

[23] *See* 16 U.S.C. §§ 1853(a)(7) (requiring that FMP measures minimize, to the extent practicable, adverse effects on essential fish habitat caused by fishing) and (9) (requiring fishery impact statement) and 1851(a)(9) (requiring under National Standard 9 that FMP measures minimize to the extent practicable bycatch and bycatch mortality).

[24] *See supra* note 22.

estimate how a proposed allocation would change consumer and producer surplus (i.e., net economic benefits). From an economic analysis perspective, economic efficiency refers to how well resources are utilized in production and consumption[26]; economic efficiency is achieved when all resources are allocated to their most productive use.[27] 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. However, if use within each sector is not allocated according to those who value the resource most, then information about access to the resource in each sector may also be necessary to determine the efficient allocation among sectors (Holzer and McConnell, 2014)[28]. Methods for estimating the economic efficiency of an allocation decision are being continually improved.[29]

b. What are the economic impacts of potential changes in allocation?

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 potential short-term distributive effects of allocation decisions on the affected communities[30], states, or regions (see social impacts below). Analyses should be completed at the finest scale possible, given available data and models. Unlike economic efficiency, economic impact – from an economic analysis perspective – does not measure social welfare. An allocation that maximizes economic impacts could reward the highest spender or highest cost producer, and thereby promote inefficient practices and processes and reduce economic efficiency relative to alternative allocations. Additionally, 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 economy will be positive or negative after those behavioral adjustments have occurred.

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[25] *See* 16 U.S.C. § 1851 (a)(5) (requiring under National Standard 5 that FMP 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). "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).

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

[27] The National Standard 5 Guidelines explain: "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." 50 C.F.R. § 600.330(b)(2). The Guidelines further explain that "[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).

[28] Holzer, Jorge, and Kenneth McConnell. 2014. "Harvest Allocation without Property Rights." *Journal of the Association of Environmental and Resource Economists* 1: 209-232

[29] 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.

[30] *See* 16 U.S.C. §§ 1851(a)(8) (requiring under National Standard 8 that FMP measures take into account the importance of fishery resources to fishing communities and, to the extent practicable, minimize adverse economic impacts on such communities) and 1853 (a)(9) (requiring fishery impact statement).

3. Social Factors

Allocation of a fishery resource can have social consequences on individuals and communities. For example, updating geographically-based allocations could impact the surrounding community by changing the demand for processing facilities, boats, and supplies such as bait and ice. When making allocation decisions, relevant questions on social factors could include, but are not limited to:

a. Is an allocation fair and equitable?

Equity is an important issue in fisheries management. National Standard 4 requires, in relevant part, that if an allocation is made "among various United States fishermen, such allocation shall be…fair and equitable to all such fishermen…"[31] Methods exist to gather information on the impacts of an allocation alternative, though assigning labels of "fairness" will remain subjective and the perception of "fair and equitable" will vary among individuals and sectors.[32] 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[33]; or groups of fishermen from different states.

"Well-being" can also inform equity. Two broad principles of equity may be considered: vertical equity and horizontal equity. The former refers to different treatment of entities that are not alike while the latter refers to equal treatment among equal entities. Horizontal equity means that the distribution of well-being before and after a change in allocation is preserved. This might be the case for allocations that are primarily based on historical landings records. Vertical equity means that the distribution of well-being before and after a change in allocation has changed. Creating set-asides for entities that may have been disadvantaged by history-based allocations is an example of a measure that would affect vertical equity. In this case, vertical equity would become more even as a result of the set-aside.

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

Consistent with Executive Order 12898 and guidance from the Council on Environmental Quality[34], NEPA analyses should continue to assess proposed actions for disproportionate and adverse effects on low-income and/or minority groups, including federally recognized tribes. Environmental justice assessments should include a review

[31] 16 U.S.C. § 1851(a)(4). *See* National Standard 4 Guidelines, 50 C.F.R. § 600.325(c) (addressing analysis of allocations and factors to be used in making allocations, including fairness and equity).
[32] *Op. cit.* Lapointe 2012.
[33] *See* 5 U.S.C. §§ 601 et seq. (requiring agency to review impacts of proposed regulations on small businesses and entities) and Executive Order 13272 (setting forth requirements for agencies when considering impacts on small businesses and entities).
[34] *See* Council on Environmental Quality, Environmental Justice Guidance Under the NEPA (Dec. 10, 1997): http://www.energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-EJGuidance.pdf (providing guidance to Federal agencies on considering environmental justice in the NEPA process).

of impacts on both directly and indirectly affected entities[35] (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?

National Standard 8 requires that "[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…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".[36] When making allocation decisions, relevant fishing community questions could include, but are not limited to:

i. What is the individual, local, and regional dependence and engagement in each sector[37, 38]?

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 the local level (and could expand to regional/national level) if data are available. 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)[39], 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.[40] 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[41]).

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[35] *Op.cit.* Council on Environmental Quality, Environmental Justice Guidance Under the NEPA, page 8; *see also* 40 C.F.R. § 1508.8 (defining "effects" under NEPA to include direct and indirect effects).

[36] 16 U.S.C. § 1851(a)(8). *See also id.* § 1802(17) (defining "fishing community") and 50 C.F.R. § 600.345 (setting forth requirements for analyses under National Standard 8 Guidelines).

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

[38] 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.

[39] 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, available at spo.nmfs.noaa.gov/tm/TM129.pdf.

[40] *Ibid*.

[41] 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.

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).[42] Another example is potential impacts to non-consumptive uses of the 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. When making allocation decisions, questions on performance and change could include, but are not limited to:

a. What are the trends in catch/landings?

Historical and current catch and landings data[43] 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 and change 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, 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?

A Council should consider the status of a stock (e.g., stock is undergoing overfishing, not undergoing overfishing, overfished, approaching an overfished condition, rebuilding, or rebuilt)[44] when determining allocations. The 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"[45]; therefore, the costs and benefits

[42] *See* 16 U.S.C. § 1851(a)(10) (requiring under National Standard 10 that FMP measures shall, to the extent practicable, promote the safety of human life at sea) and 50 C.F.R. § 600.355 (National Standard 10 Guidelines).
[43] *See* 16 U.S.C. § 1853 (a)(13) (requiring that FMP describe sectors which participate in the fishery and, to the extent practicable, quantify trends in landings of the managed fishery).
[44] *See* 16 U.S.C. § 1853 (a)(10) (requiring that FMP specify objective and measurable criteria for identifying when fishery is overfished) and 50 C.F.R. § 600.310(e)(2) (providing under National Standard 1 Guidelines for specification of criteria for determining overfishing and overfished status of stock or stock complex).
[45] 16 U.S.C. § 1853 (a)(14).

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?

The distributions of species alter over time for reasons such as climate change (Nye et al., 2009)[46] or natural fluctuations in abundance (Bell et al., 2014)[47], among others. This may create jurisdictional disputes when the distribution crosses international, state, or council 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, recognizing that there could also be other management changes that need to be addressed.[48] If a stock moves and it is financially viable for fishermen to follow the stock/species, then there can be conflict because fishermen in an area who are historically dependent on the stock will catch fish as well as fishermen new to the area, creating potential for overfishing and reducing the sustainability of the stock. Conversely, if a stock moves and it is not financially viable to follow the stock, there may be less potential for conflict if allocations can be updated to match the new distribution. For stocks expected to change geographic distribution, determining pre-arranged management responses is recommended (see above, "Recommended Practices When Reviewing and Making Allocation Decisions," Section d – Planning for Future Conditions).

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

In order to properly manage a fishery, scientists need information on stock specific catch rates, abundance, and biology (age, growth, mortality, etc.), as well as data on social and economic aspects of the fishery[49]. Information can be compiled through fishery-dependent and fishery-independent data sources. Fishery dependent data may be collected through use of dockside monitors, at-sea observers, logbooks, electronic monitoring and reporting systems, telephone surveys, and vessel-monitoring surveys. Fishery-dependent data collected varies between sectors. Improvements in the data collected through a fishery can result in a better understanding of the species and the appropriate management actions.[50]

Councils should consider the quality and availability of fishery dependent data collected through each sector when making allocation decisions. Lack of detailed data should not be used to penalize a sector or a group; however, increased allocations could be

[46] 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.

[47] 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.

[48] Changes in stock distribution implicate other MSA mandates, such as National Standards 1 (preventing overfishing and achieving optimum yield) and 3 (management of stocks as a unit, to extent practicable). For example, reference points and catch targets may need to be updated if stock productivity changes with the shifting distribution.

[49] *See* 16 U.S.C. § 1853(a)(5) (requiring that FMP specify pertinent data to be submitted to agency with respect to commercial, recreational, charter fishing, and fishing processing in the fishery).

[50] For example, due to scientific uncertainty, data poor stocks are often managed more conservatively 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.

considered as an incentive to improving data quality. Where appropriate, allocation decisions which incentivize cooperative research or improvements in self-reported data could also be considered in data poor situations, consistent with relevant MSA requirements.

Summary

Allocation of fishery resources is a complex issue facing fishery managers. Because 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.

Appendix A: Existing National Policy

1. Magnuson-Stevens Fishery Conservation and Management Act (MSA)[51]

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 sections 303A(c)(3) and (c)(5) specify requirements for determining initial allocations and fishing community allocations for Limited Access Privilege Programs (LAPPs)[52]. MSA sections 303(a)(14), 303(b)(6), 303(b)(11), and 304(e)(4)(b) also detail considerations for allocation decision making.[53]

- **a. National Standard 1[54]:** "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[55]:** "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[56]:** "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[57]: "**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 by utilizing economic and social data that meet the requirements of [National Standard 2], 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[58]: "**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: Eligibility of fishing communities to participate in a LAPP[59]: "**To be eligible to participate in a limited access privilege program to harvest fish, a fishing community shall—

[51] www.nmfs.noaa.gov/sfa/laws_policies/msa/documents/msa_amended_2007.pdf
[52] 16 U.S.C. § 1853a. Limited Access Privilege Programs are a subset of Catch Share Programs.
[53] 16 U.S.C. §§ 1853(a)(14), (b)(6), (b)(11); 16 U.S.C. § 1854(e)(4)(b).
[54] MSA 301(a)(1) [16 U.S.C. § 1851(a)(1)].
[55] MSA 301(a)(4) [16 U.S.C. § 1851(a)(4)].
[56] MSA 301(a)(5) [16 U.S.C. § 1851(a)(5)].
[57] MSA 301(a)(8) [16 U.S.C. § 1851(a)(8)].
[58] MSA 301(a)(9) [16 U.S.C. § 1851(a)(9)].

(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. LAPP: Requirements for allocation[60]: "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[61]: "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—

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[59] MSA 303A(c)(3)(A)(i) [16 U.S.C. § 1853a(c)(3)(A)(i)].
[60] MSA 303A(c)(5) [16 U.S.C. § 1853a(c)(5)]; for programs established after the 2007 MSA reauthorization.
[61] MSA 303A(d) [16 U.S.C. § 1853a(d)].

(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)(14)[62] 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)[63] 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, the fair and equitable distribution of access privileges, and any other relevant considerations.

MSA 303(b)(11)[64] authorizes setting aside a portion of the total quota "for use in scientific research."

MSA 304(e)(4)(B)[65] provides that rebuilding programs must allocate "overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery."

2. Select Relevant NMFS Documents. For additional documents, see Morrison and Scott (2014).[66]

a. National Standard Guidelines.[67]

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 were revised in 2008, and NS1 were revised in 2009 and proposed to be revised again in 2015.

b. NOAA Catch Share Policy.[68]

The NOAA Catch Share Policy provides guidance on making initial allocation decisions for catch share[69] 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.

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[62] 16 U.S.C. § 1853(a)(14).
[63] 16 U.S.C. § 1853(b)(6).
[64] 16 U.S.C. § 1853(b)(11).
[65] 16 U.S.C. § 1854(e)(4)(B).
[66] 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 Commerce. 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.
[67] www.nmfs.noaa.gov/sfa/laws_policies/national_standards/index.html
[68] www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/noaa_cs_policy.pdf
[69] "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.

c. NMFS Economic and Social Impact Assessment Guidance.[70]
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 Fisheries National Saltwater Recreational Fisheries Policy.[71]
As explained in the policy, "this 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." The policy establishes six guiding principles, and 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."

e. NOAA Fisheries Climate Science Strategy.[72]
The strategy is part of a proactive approach to increase the production, delivery, and use of climate-related information in fulfilling NMFS mandates. The Strategy identifies seven objectives which will provide decision-makers with the information they need to reduce impacts and increase resilience in a changing climate. It is designed to be customized and implemented through Regional Action Plans that focus on building regional capacity, partners, products and services to address the seven objectives.

[70] www.nmfs.noaa.gov/sfa/laws_policies/economic_social/index.html
[71] www.nmfs.noaa.gov/sfa/management/recreational/documents/noaa_recfish_policy.pdf
[72] www.st.nmfs.noaa.gov/Assets/ecosystems/climate/documents/NCSS_Final.pdf