Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting

July 12, 2023

Terms of Reference

In May 2023, the NMFS released the draft Fisheries Climate Governance Policy. This policy is intended to provide guidance on Council authority for stocks that may extend across the geographic area of more than one Council, pursuant to §304(f) of the Magnuson Stevens Act (MSA). The Mid-Atlantic Council intends to submit comments to NMFS and has requested that the SSC review and comment on the draft policy. Upon review of the draft policy, the SSC will provide a written report that addresses the following:

1) *Comment on the overall proposed process to review the geographic scope and/or Council authority as described in the draft Fisheries Climate Governance Policy developed by the NMFS.*

   (Note: Given the overlap and interconnection between the draft policy and different Terms of Reference, similar comments/responses may be found under multiple Terms of Reference)

   - The SSC recognizes that stocks and fisheries are shifting as a result of climate change and other drivers and that this may result in an increasing disconnect between the location of fisheries and the Council(s) with primary jurisdiction. The draft Fisheries Climate Governance Policy is an attempt to proactively define an adaptive procedure to address the likely consequences of such shifts. The SSC broadly agrees with the need for transparency and forward thinking in addressing the challenges posed by shifting stocks.
   - The objectives of this policy should be more clearly and specifically defined. Councils have successfully managed stocks with overlapping boundaries and have taken numerous management actions to address the impacts of climate change without the need for changes to the current NMFS process or designating a new lead Council authority. What is the specific problem the draft policy is trying to address? What are the anticipated benefits and what are the expected costs associated with a change in lead Council designation? How would these costs and benefits be measured?
     - NOAA Directives do not have the force and effect of law and are not meant to bind the public. Given this discretion, what is the purpose/utility of such guidance if it is not binding?
     - Optimally, the specific objectives of a policy would be used to define the appropriate metrics by which the need for management intervention would be

identified. The lack of objectives in this proposed policy makes interpreting, and assessing the appropriateness of the proposed indicators and thresholds impossible.

- Major changes to management, like changing the primary Council, should be a last resort after other potential options have been deemed insufficient.
    - The implications of this policy are potentially large for many different stakeholders. A meaningful stakeholder comment process will be important. These stakeholders should include the interstate fisheries commissions (e.g., ASMFC). Changes in Council management could be more disruptive for jointly managed fisheries.
    - Range shifts are not monotonic - they shift in multiple directions over time. How will this policy address species that shift northward for a few years and then back to their earlier distribution? Will the management structure revert as well?
- Many components of the decision points are not operationally defined. Thus, they will not lead to predictable and scientifically defensible decisions. This limits the benefit of transparency that is one of the stated goals of this directive.
    - The policy does not provide clear operational definitions of the criteria used to evaluate potential fishery/jurisdiction changes. For example, apparent shifts in stock distribution differ depending on factors such as which survey(s) is used to define the distribution of fish and how boundary lines are drawn in federal (see Palacios-Abrantes et al. 2023, https://doi.org/10.1371/journal.pone.0279025). Thus, identifying a specific percentage of fish inside or outside the region is problematic.
    - Similarly, other aspects of the decision points are defined very specifically (e.g., a 15% threshold) with no evaluation presented to justify these choices or their implications. The descriptions about calculating averages over time are vague, with only examples that describe a 3-year moving average.
- Only four Councils have contiguous boundaries: New England, Mid-Atlantic, South Atlantic, and Gulf of Mexico. A national directive would then seem to apply only to the east coast.
- Many Fishery Management Plans (FMPs) include multiple species. The directive does not clarify how the process would apply to multiple species under a single FMP. It seems this would require even more work to possibly move a species while updating the remaining groups within the FMP.
- There is also no process specified for independent scientific peer review of these determinations/designations. This may lead to many transitory disturbances in the fishery. The absence of a well-defined scientific review process could lead to poorly justified and expensive changes to the status quo without compelling scientific evidence.
    - Processes other than climate change may cause the proposed metrics to change. For example, offshore wind could change available habitat or areas that can be fished. Management (e.g., changes to state or sector allocations, changes to closed areas) could cause metrics to change.

- How would this process interact with other NMFS guidance related to management under climate change, including National Standard 3 and the agency-wide EBFM policy and EBFM Road Map? This should be clarified. Are the procedures outlined here intended to help implement these policies? If so, how?

2) *Provide feedback on the application and potential implications of the proposed review criteria, metrics, and data sources described in Section III, Step 1 (Review Considerations), Step 2 (Geographic Scope of Fishery), and Step 3 (Council Designation). For Steps 1 to 3 consider appropriateness of the criteria and metrics, their feasibility of application, and the ability of current data streams to support decision making. Propose alternative criteria, metrics, and data sources where appropriate.*

- Some consideration should be given to the purported permanence of the change in these factors. Much of this document relies on the principle that such changes are irreversible and are caused by climate change instead of other factors like management.
- The bases (i.e., "criteria indicators") for change may not be the same ones that were used to establish jurisdictions originally. Scallops and monkfish might be good case studies. Blueline tilefish would be another.
- Documenting a change in a stock's distribution will not be easy to define. The variable definitions used in the literature will need to be tightened considerably before such changes can be used for decision making.
    - Methodologies will need to be sufficiently standardized to define relevant threshold criteria and the uncertainty should be estimated. The document does not prioritize data sources or indicators used in defining or documenting a shift in stock distribution. Some hierarchy or prioritization of data sources/indicators would improve operational use and reduce instances of conflicting interpretations of distributional change. Data sources and criteria used to make decisions may be prioritized based on data quality and to avoid potential social-economic consequences of the decision, but details are lacking.
    - What is the basis for a 15% shift as a trigger of interest? What constitutes a "documented" shift in stock distribution? What statistical criteria would apply? How will interannual shifts in distributions be separated from longer-term more permanent trends? This needs more technical specificity and is probably more suited for longer-term research.
    - A first step would be a review of historical changes in these metrics. Concepts from statistical control theory would be useful to distinguish signal from noise.
    - Criteria will often conflict (some indicating change, others no change or change in other directions). This can even be true within a single indicator (e.g., spring vs. fall trawl survey). How will divergent indicators be reconciled? (e.g., recreational fishery appears to be shifting whereas commercial does not)
    - The period for this shift (i.e., shift of greater than 15% in the proportion of a fishery's landings revenue) is not specified. For small or non-target fisheries, spikes in catches or revenue might be fairly common. Moreover, alternative

economic metrics should be considered - for example, net revenue might be more appropriate than net revenue? Identifying the appropriate metric will depend on exactly what is trying to be captured (e.g. economic impacts vs welfare, etc.)
    - Data sources have inherently different levels of quality and uncertainty. For example, defining such a metric from the MRIP data will be difficult (i.e., shift of greater than 15% in the proportion of a fishery's recreational fishing effort; does the 15% refer to the point estimate?) because the MRIP estimates are often highly uncertain at small spatial scales (e.g., states). Therefore, determining changes in stock distributions may require greater precision than MRIP is able to provide at the state level.
    - The problems in determining the fraction of catch in an area becomes especially critical as catches are restricted because it takes a smaller amount of fish or effort to make a big change percentage-wise.
- The SSC supports using multi-year information to mitigate against outliers; however, the ambiguity of geographic boundaries will impede any specific application of this recommendation.
    - Presumptive multi-year metrics - what happens to stocks with 25-40% landings revenue? The lower bound of the 40%-75% should correspond to the 75% upper threshold.
- The criteria currently seem to conflate footprint of the biological stock and footprint of the fishery. According to MSA (§3(13)) , the definition of a "fishery" has two components: "(13) The term "fishery" means— (A) one or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics; **and** [emphasis added] (B) any fishing for such stocks." Thus, is it accurate to assume that distribution of both components must change significantly?
- How would a significant change in stock distribution be determined? What is the time period over which that change is observed? Three years, as proposed, is likely too short to differentiate a range shift from interannual variability.
    - As well, any multi-year average should be longer than the timetable for evaluation and implementation of governance changes (12 months for Council feedback on geographic scope and designations and a 2 year transition evaluation, after which an updated three-year average could trigger reinitiation of the process). The latter includes a tradeoff between risk of frequently changing management authority (too short a time period) vs. risk of insensitivity to trends in changing distribution (too long a time period). These periods may also differ depending on individual stock and effort dynamics: distributions of some stocks and associated effort may be inherently more variable over time.
    - Changes may emerge through a suite of drivers: climate change, ocean acidification, wind energy areas (potentially affecting distribution of both stocks and effort). We currently do not have adequate infrastructure to monitor changes in stock distributions as wind energy areas expand.

- The draft policy ignores the data uncertainty in the Sources of Data section and therefore makes the proposed policy risk-prone, not risk-averse - i.e., how will uncertainty be evaluated and accounted for in the decision process?

3) *Comment on any social and economic implications and considerations the draft policy could have on Mid-Atlantic fisheries and communities.*

- The changes in management contemplated in this policy could be extremely disruptive for fishing because of different practices followed by each Council. These potential changes could introduce management uncertainty that influences capitalized values of quota, permits/licenses (and associated vessels) and/or long-term business planning. For example, the Councils use different approaches to set OFLs, ABCs, and ACLs. The potential to change which Council is in charge of management may create substantial uncertainty in future management.
- Six months to evaluate candidate changes in Council leads does not allow for multiple Council meetings, coordination with states and Interstate Commissions and full public participation, no less proper compliance with NEPA and other applicable laws. There appears to be no opportunity in the process to get input on the potential implications from stakeholders on the potential change in management.
- The draft policy has a blind spot in its underlying assumptions and subsequent policy analyses regarding social and economic behaviors, relying on currently inadequate data collection programs. Scientific approaches largely don't exist to monitor and predict changes in markets, entry and exit, changes in home port, profitability, scalability, and business and financial health and flexibility. So the consequences of changes in lead Council, and under whose jurisdiction a user would actually fall under, is uncertain based solely on readily available information like permit address.
- The draft policy may create perverse incentives, including: (1) a disincentive for collaboration among Councils; (2) a response in which a proliferation of defined stocks occurs, increasing management complexity and costs (i.e., multiple FMPs across Councils for the same species); (3) relatively minor changes in real or reported landing locations to cause/prevent a jurisdiction shift.
- The policy should recognize that there is a difference between a fishing business and a fishing vessel. A business could have vessels fishing from multiple ports, but a headquarters at a specific location. It seems that the current draft directive should anticipate and address this type of integrated business in its design.
- As defined under step 4, a freeze on modifications to allocation or permits during the phase-in period could have serious consequences for business planning.

4) *Comment on the potential science and stock assessment implications of this policy (including development and timing of scientific advice to inform the management process).*

- Data responsibilities and workload consideration across Science Centers will be particularly important to understand because changing a Council in charge of the FMP may change the Science Center that provides advice.
    - Who conducts the standardized analysis of distribution shifts is yet to be determined.

    - How will the distribution shift analyses be conducted? Will one or multiple independent committees conduct the distribution shift analyses to meet the needs of steps 1 and 2? If so, how will the committees be formed? The data and the likely used methods/approaches are likely the same, although the objectives of steps 1 and 2 are different.
    - How will data be shared across regions, Science Centers, Councils, and other agencies? Sometimes different data are collected in different regions.
    - Will a change in Council be associated with a change in the NMFS Science Center responsible for assessment and, if so, how will resources be shifted to accommodate this change?
    - Will data and sampling infrastructure be improved and standardized across regions? If resources can be made available for this, it would be highly beneficial to science and assessment across all regions.
- A transition to a new Council governance structure will likely require development of new data streams and/or integration of existing streams within and between NOAA Fisheries Regional Offices and Science Centers. This will require new resources, but the policy only advises mitigation "to the degree practicable."
    - Many current data collection programs are region-specific, so recognizing shifts is complicated by differences between collection programs.
    - Current assessment science teams and stock assessment peer review processes are region-specific and may require modification under new Council management.
    - Data collection protocols designed for larger scale assessments may not support smaller management areas separated across Councils.
    - Increasing spatial resolution in assessments may require additional resources for both development and review of assessments.
- Management Strategy Evaluation (MSE) is increasingly being used to guide development of ABCs. However, current MSEs don't consider potential changes in management procedures associated with changing the Council (e.g., changing the OFL to ABC policy). Thus, guidance derived from MSEs may no longer be relevant once jurisdiction changes.
- Transition would also erode the substantial institutional knowledge that resides within each Council and Science Center staff, which would be difficult to replicate in the transition period defined.

5) *Provide guidance and/or recommendations for Council consideration and possible inclusion in the Council's comments on the draft policy.*

- A Policy Directive that outlines the science and/or management issue should have been developed and approved before making a procedural directive (i.e., the Climate Governance Policy). Then a procedural directive follows that would outline the process to address the policy. The current draft policy contains no information on the foundation as to what this policy is based on and no science was presented to demonstrate issues. Particularly important is a review of how Councils have been responding to stocks shifting their distributions to date.
    - A policy directive should clarify what the primary concern regarding representation might be. In the current situation, all stakeholders have an

opportunity to comment irrespective of council jurisdiction. If the primary concern is the absence of a voting member on the Council, modification of council membership might be simpler than spawning multiple FMPs.
    - The policy directive should also include a review of previous Council efforts to manage stocks with shifting ranges. While challenges remain, these efforts appear to be effective without the need for many of the approaches described in the procedural directive.
    - It is unclear how this directive intersects with the East Coast Scenario Planning process and possible outcomes.
    - It would be helpful to have a list of species and associated Councils with management authority that might be driving the need for this directive.
- Fishery Designation options 1-3 - Some information on the current status of Designation of stocks in categories 2 and 3 would be helpful. Spiny dogfish and Monkfish fall in Designation 2. Golden and blueline tilefish are in Designation 3.
    - All of these Fishery Designation options imply either status quo or expansion of management council involvement. What about contraction of jointly managed stocks to only being managed by a single Council? For example, might scallops be transferred from New England to the Mid-Atlantic?
    - Designation 3 (multiple councils, multiple FMPs) will require stock assessments that would likely occur at smaller spatial scales than is currently done. In general, there hasn't been sufficient advancement in the science and importantly, the data to support such estimates.
        - Who supports the research to develop improved techniques and approaches to support this policy?
- The section of the policy that describes transitioning to revised council authority (step 4) specifies no permitting or allocation decisions by lead council should be taken. This implies a freeze on management actions, which could be problematic for species experiencing overfishing or other aspects of management.
- Perhaps an "ombudsman" seat on the Council could address specific concerns of a state without a seat at the table. For example, a RI ombudsman could be part of the Mid-Atlantic process for squid issues. This might be more efficient than completely changing management authority.
- The amount of change that would need to happen to trigger a change in management should be extremely large. Otherwise, there is the risk of the stock flickering back and forth over the threshold. Major changes to FMPs with changes in Councils would likely be very disruptive to stakeholders and management partners.
- NOAA should test these rules through different case studies on a wide range of species (e.g., life history, management history) to see how their rules might be applied and understand when a change in management is truly needed. These case studies should develop the entire process: define the problem and objectives, identify metrics to support objectives, and test any proposed approaches. The formation of a national working group, similar to those formed to review National Standard guidance, to provide technical advice on best practices should be considered to evaluate and determine significant changes in stock and fishing distribution, with worked examples when possible. Care should be taken in this process to avoid giving the impression to stakeholders that these case-study

tests represent policies that are likely to be implemented. Rather these should only be paper exercises to make sure potential rules appear to work as intended.

- The base period and the time period used for comparison should be considered based on the species' life history, the uncertainty of the population dynamics, and the specific ecosystems (warming trend versus oscillation).
- There is no consideration or discussion of costs (besides mentioning the word) associated with these changes in responsibilities. How will NMFS address the modification of Council budgets to reflect the additional burdens, in particular on science, management and administration?
- There is another set of issues that is left undescribed. The draft directive policy fails to acknowledge the close intersection and integration of MSFCMA management with state partnerships in science and management that need to be considered in evaluating lead Council changes. For example, if a lead Council shift occurs that moves responsibilities to a new Region and Science Center, existing Cooperative Agreements, Research Set Asides, etc., with states for state data collection, research and enforcement of FMPs and JEAs may have to be renegotiated under a potentially new management and administrative regime - is a 2-year transition sufficient and will the state partners be willing participants? It will be hard to say because the Policy is not being shared with them in advance for review, which is a major oversight and may strain relationships with key management and science partners. Greater public input on policy with a focus on other management partners (i.e., regional fisheries commissions) is recommended.

Attachment 1

MAFMC Scientific and Statistical Committee

July 12, 2023

Meeting Attendance via Webinar

Name	Affiliation
SSC members in attendance:	
Tom Miller	University of Maryland – CBL
Ed Houde	University of Maryland – CBL (emeritus)
John Boreman	NOAA Fisheries (retired)
Jorge Holzer	University of Maryland
Yan Jiao	Virginia Tech University
Sarah Gaichas	NOAA Fisheries NEFSC
Wendy Gabriel	NOAA Fisheries (retired)
Mike Wilberg (Vice-Chairman)	University of Maryland – CBL
Cynthia Jones	Old Dominion University
Gavin Fay	U. Massachusetts-Dartmouth
Alexei Sharov	Maryland Dept. of Natural Resources
Geret DePiper	NOAA Fisheries NEFSC
Andrew Scheld	Viginia Institute of Marine Sciences
Mark Holliday	NOAA Fisheries (retired)
Rob Latour	Virginia Institute of Marine Science
Olaf Jensen	University of Wisconsin-Madison

Others in attendance:

M. Sabo	K. Dancy
G. DiDomenico	C. Moore
H. Hart	J. Fletcher
M. Lapp	B. Muffley
J. Beaty	B. Brady
A. Bianchi	J. Hornstein
M. Seeley	M. Duval