



## Mid-Atlantic Fishery Management Council

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# MEMORANDUM

**Date:** May 26, 2022  
**To:** Council  
**From:** Brandon Muffley, Council staff  
**Subject:** Research Set-Aside Program Redevelopment – Background and Meeting Materials

On Wednesday, June 8, 2022, the Mid-Atlantic Fishery Management Council (Council) will consider the potential redevelopment of the Council's Research Set-Aside (RSA) program. The Council suspended the RSA program in 2014 due to a variety of concerns associated with the program that included administrative, enforcement and science issues. Initially included as part of the 2020 Implementation Plan, the Council supported the initiation of a workshop to review and consider the potential redevelopment of the RSA program. However, due to delays and planning considerations caused by the pandemic, the workshop was delayed until 2021. From July 2021 through February 2022, the Research Steering Committee (RSC) held a series of four exploration workshops<sup>1</sup> focusing on the key issues of RSA research, funding mechanisms, and enforcement, monitoring, and administration. In addition, the RSC held several meetings during this time to review the input from the workshops and develop a draft framework for a potentially revised RSA program that would seek to address the issues of the original RSA program. The workshops and RSC meetings were aided by input and guidance from the Scientific and Statistical Committee's (SSC) Economic Work Group who provided technical information and strategic advice regarding economic considerations and trade-offs associated with different components of a revised RSA program.

At the June meeting, staff will provide the Council with a presentation on a potential draft RSA framework, draft RSA program elements, and recommendations developed by the RSC for Council consideration. The SSC Economic Work Group will also present an overview of their final report regarding takeaways from their engagement in the process and economic considerations for a potential revised RSA program. The Council will then decide whether or not to continue the process of redeveloping the RSA program and further refine the framework and recommendations identified by the RSC. While the decision in June regarding the RSA program will be made by the Council, state partner engagement and support will be critical for any further RSA considerations given their significant role in the dockside administration and implementation of any RSA program. In addition, if/when appropriate, any potential management action considered by the Council through an omnibus framework or amendment

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<sup>1</sup> For more information about the RSA workshops including the final reports and workshop materials, please visit: <https://www.mafmc.org/workshop/rsa>.

would need to be developed cooperatively with the Atlantic States Marine Fisheries Commission for jointly managed species to ensure a consistent and compatible RSA program across fishery management plans.

Materials listed below are provided for Council consideration of this agenda item. Council members may also want to review the Workshop #4 summary report ([Workshop #4 Summary](#)) for additional background information on the RSA program alternatives identified in the decision tree tables that the RSC and workshop participants considered for further evaluation.

*Materials behind the tab:*

- April 27, 2022 Research Steering Committee meeting summary
- Comparisons between old and a potentially revised RSA program
- SSC Economic Work Group RSA final report and appendices

*The following supplemental document is available online:*

- [Staff Memo: "RSA Program Issues" dated July 30, 2014](#)



## Research Steering Committee

April 27, 2022  
Webinar Meeting Summary

The Mid-Atlantic Fishery Management Council's (Council) Research Steering Committee (RSC) met on Wednesday, April 27, 2022 from 8:45 a.m. to 3:45 p.m. The purpose of the meeting was to review all the input received from the four previous Research Set-Aside (RSA) exploration workshops and make recommendations regarding the potential redevelopment of the Council's RSA program. The Committee's recommendations will then be considered by the Council during their June 2022 meeting.

**Research Steering Committee Attendees:** M. Duval (Committee Chair), A. Nowalsky (Committee Vice-Chair), C. Batsavage, P. Risi, K. Wilke, P. Geer, B. Beal, M. Pentony

**Other Attendees:** A. Loftus, L. Anderson, M. Holliday, Y. Jiao, J. Holzer, G. DePiper, B. Muffley, P. Rago, E. Hasbrouck, J. Cimino, M. Davidson, S. Lenox, T. Smith, L. Deighan, D. McKiernan, K. Almeida, J. McNamee, E. Powell, J. Cassin, S. Sakowski, S. Pearson

Dr. Michelle Duval, RSC chair, started with a review of the agenda and planned approach and scope for the meeting. It was noted that much of the agenda is structured to provide open discussion and feedback on all topics by the RSC, invited state/ASMFC partners, and the Scientific and Statistical Committee (SSC) Economic Work Group, but that final recommendations and decisions will ultimately need to be made by the RSC.

Prior to working through the agenda items, the RSC identified any outstanding issues that needed additional clarity or discussion during the meeting in order to make a recommendation by the end of the meeting regarding redevelopment of the RSA program. In general, recognizing more details and decisions will need to be made in the future, RSC members felt the prior meetings and workshops had covered the issues and potential solutions well and they had the information they needed. Two areas for additional discussion raised by the RSC were for-hire participation, monitoring, and accountability and the need for the RSC to make some progress making recommendations regarding the research components of a revised RSA program.

### **Draft RSA Goals and Objectives:**

The draft goals and objectives help identify priority considerations and outline how a program might be structured to achieve the desired outcomes for the program. Staff gave a quick overview of the extensive process already undertaken by the RSC to develop, refine, and prioritize the draft goals and objectives being considered. The draft goals and objectives reviewed by the RSC included the recommendations made during the fourth RSA workshop which consisted of some language modifications to the goals and priority reordering of many objectives.

The RSC did not make any changes to the language or prioritization and recommended the draft goals and objectives as presented be considered by the Council. The recommended RSA program goals and objectives are as follows:

**Goal 1:** Produce quality, appropriately peer-reviewed research that maximizes benefits to the Council, management partners, and the public and enhances the Council’s understanding of its managed resources (Research)

**Objectives:**

1. Support more applied management-focused research activities
2. Higher priority on proposed RSA projects whose results would likely have timely application to species management
3. Discourage commitments to longer-term monitoring projects
4. Ensure all data collected (funding and research) through the RSA program is open access

**Goal 2:** Ensure effective monitoring, accountability, and enforcement of RSA quota (Enforcement and Administration)

**Objectives:**

1. Apply enhanced, adaptive, and consistent enforcement standards and controls
2. Ensure compliance with the reporting and use of the RSA quota
3. Increase state-federal science, enforcement, and administration collaboration and cooperation
4. Minimize law enforcement and administrative (agency and researcher) burdens
5. Provide support for administrative and law enforcement activities
6. Improve states’ ability to revoke RSA fishing privileges

**Goal 3:** Generate resources to fund research projects that align with the priorities of the Council (Funding)

**Objectives:**

1. Maximize revenues from RSA quota
2. Provide equitable opportunity to fund research across all Council-managed species
3. Increase scientific and industry partnerships
4. Evaluate fairness in fishing community access to RSA quota

**Goal 4:** Foster collaboration and trust between scientific and fishing communities and the general public

**Objectives:**

1. Ensure an open, accountable, and transparent process through all steps (funding and research) of the RSA program
2. Ensure all data collected (funding and research) through the RSA program is open access
3. Increase scientific and industry partnerships
4. Evaluate fairness in fishing community access to RSA quota

## **Review of the Program Elements in Comparison Tables:**

The RSC then reviewed all of the RSA program elements considered in the comparison tables<sup>1</sup> which outlines the differences/similarities between the old and potential new RSA program given draft RSC decisions made to date and identifies how a revised program may address prior concerns relative to administration/enforcement, funding, and research.

The discussion included below only focuses on those topics in which there was extensive discussion, and the RSC made a new and/or different recommendation regarding a revised program element. Those topics in which the RSC continued to support their prior decisions are not covered and can be found in the comparison tables and previous RSC meeting or workshop summaries<sup>2</sup>.

### *Administration and Enforcement*

#### Call-in/notification/reporting requirements

- **Pre-landing notification** – the RSC continues to support a pre-landing call-in notification and is a critical need for law enforcement; however, the RSC decided not to specify an associated call-in time requirement at this time. Given the diversity of Mid-Atlantic fisheries and associated activities (e.g., gear types, vessels, state regulation differences), a universal call-in time may not be practical and a range (1-6 hours for ex.) may be more appropriate. The RSC noted that whatever the time requirement is, we need to ensure the state and federal requirements/timeframe are not in conflict and help to minimize the burden on states, GARFO, and fishermen to call in.

#### Shore-side monitoring of RSA quota

- **Electronic monitoring of participating vessels** – having participating vessels be equipped with AIS or VMS could be an important tool to help enforcement monitor RSA trips and activities. However, the RSC noted that most vessels in the Mid-Atlantic do not have VMS requirements and this requirement would impact both state and federally permitted vessels that may participate in the program. Additional conversations with law enforcement about the details and utility of the different electronic monitoring options will be needed should the RSA program continue to be redeveloped.

#### Number of vessels participating

- **Phase-in of participants** – the RSC continues to support allowing states to consider the potential to phase-in different participants into the program given their own unique circumstances. These phase-in options could apply to the sectors (commercial, for-hire) and vessel permit type (state, federal) and combination of both.

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<sup>1</sup> The old versus revised draft RSA program comparison tables can be found in the June 2022 Council meeting briefing book at: <https://www.mafmc.org/council-events/2022/june-2022-council-meeting>.

<sup>2</sup> The January 18, 2022 Research Steering Committee meeting summary can be found at: [https://www.mafmc.org/s/Tab05\\_Committee-Reports\\_2022-02.pdf](https://www.mafmc.org/s/Tab05_Committee-Reports_2022-02.pdf). The February 16, 2022, RSA workshop #4 summary can be found at: <https://www.mafmc.org/s/RSA-workshop-4-summary-recommendations-report.pdf>.

- **Number of quota transfers** – the RSC supports limiting the number of RSA related quota transfers between vessels associated with both an RSA auction and bilateral agreements between the P.I. and collaborating vessels under limited circumstances (e.g., sale or damage to vessel). These quota transfers between vessels can make it difficult for enforcement to know what can/should be landed by a vessel operating under the RSA program. These transfers also increase the administrative burden to track which vessels are in/out of the program and state and federal exemption permits need to be modified each time. These vessel transfers (the amount of quota transferred) are not tracked by GARFO but transfers associated with the auction were tracked by the third-party and some states and the P.I. tracked transfers associated with bilateral agreements. Some allowance for quota transfers is needed, particularly under bilateral agreements, so that P.I.'s are not negatively impacted.

#### For-hire reporting and verification

- **Electronic reporting** – the RSC recommended standardized reporting and data collection elements for all for-hire RSA trips and harvest. In addition, the RSC supported the work necessary to implement/modify eVTR software programs to flag an RSA trip with the associated required data fields (the ACCSP eTRIPs software already has coding to flag an RSA trip). This would also apply to electronic dealer reporting, such as the ACCSP SAFIS software, to ensure there is consistency between the electronic two-ticket system of vessel and dealer. It was also noted that electronic reporting was not widely available and not mandatory during the old program, so opportunities should be utilized to take advantage of the eVTR software capabilities to fit the needs of a redeveloped RSA program.

#### Administrative burden and costs relative to benefit

- **Support to states (enforcement and monitoring)** – the group spent a lot of time discussing different ways support could be provided to the states, including funding opportunities. All agreed addressing this issue will be critical in order for a revised program to be successful. State representatives indicated that a number of the recommendations made by the RSC will have a significant impact on the enforcement and monitoring burden. Recommendations such as no mixing of trips, limits to the number of vessels, landing locations, call-in requirement etc. should all reduce the administrative burden.

The RSC also discussed options and/or opportunities to provide funding directly to the states to help cover some administrative costs. Areas to consider or investigate further include:

- Redirect federal funding line items to support RSA
- Potential to increase funding under the Joint Enforcement Agreement (JEA)
- Potential for the ASMFC to serve as the third party for auctions
- Require a percentage of revenue generated through the program be dedicated to state administration
  - NOAA General Counsel has provided some initial feedback regarding this option
- The use of contracts versus grants

It was noted, however, that it's unclear what the administrative costs might be to support the RSA program and how those costs compare to the total funds raised by the program.

The RSC supported those program elements that help alleviate the administrative burden outside of actual funding opportunities, including the development of best practices and standards across states. The RSC also recommended the need to continue to pursue avenues, including discussions with NOAA General Counsel, to find or dedicate funds to provide to states. In addition, the RSC supported collecting additional information and conducting a cost analysis to see what the overall administrative costs (enforcement, monitoring, auction) compared to the funds raised and costs of the research to understand the needs and potential availability of resources. This information could also support a broader, more comprehensive costs-benefit analysis of the program.

## *Funding*

### Portion of ABC set-aside

- **Set-aside amounts** – a fixed percentage of the ABC would be set-aside and could be different for each fishery. The RSC recommended this fixed percentage would serve as a set-aside cap where the Council could choose something up to the cap and allocate less than the cap in any given year to ensure the amount set-aside aligns with need.

### RSA quota allocation

- **Separate allocation by sector** – of the fixed percentage of the RSA set-aside, the RSC continues to support the Council's ability to separate the RSA set-aside by sector. The decision to separate the set-aside by sector could consider the type of project seeking funding. For example, if the project results and information will benefit the management of both sectors, the RSA set-aside would not need to be allocated by sector. The ability to allocate the set-aside by sector also allows for flexibility as to where in the process (e.g., ABC, sector ACL, quota or RHL) the allocation occurs. It was noted by the SSC Economic Work Group that running separate auctions by sector may lose some of the competitive advantages and understanding the value of each sector compared to a single auction approach.

### Third-party auction process

- **Best practices** – while the Council and NMFS do not have the authority to run an auction, the RSC recommended developing best practices and guidelines that a third-party should consider implementing or possibly lose the ability to serve as a third-party in future auctions. It was noted that vessels participating in any auction process should know their respective state requirements (e.g., permits, regulations, reporting) to participate in the RSA program and would need to sign-off that they agree to comply. The RSC also recommends continued dialogue with NOAA General Counsel to get clarity as to what is feasible or not with an auction process.

## *Research*

### Lack of project proposals/P.I. disinterest

- **Long-term/monitoring projects** – the RSC recommended that funds generated through the RSA program could support some long-term/monitoring type projects (e.g., pilot or proof of concept) but would not support these or other types of projects long-term and no more than 1-2 years. This is consistent with objective #3 under Goal 1 to discourage commitments to longer-term monitoring projects. The RSC noted the value in potentially supporting these types of projects to help get research started and gives the Council flexibility on the range and scope of projects to consider funding.

#### Conflict of interest (COI)

- COI determination will primarily be dictated by Department of Commerce federal grant regulations; however, the RSC also recommended developing internal Council COI guidelines related to the RSA program. For example, outlining potential COI for Council members that might be involved in the management review of project proposals. Identifying and making publicly available clear and consistent COI guidelines will set expectations and help build public trust in the RSA process.

#### Quality research/peer review

- While it is anticipated that a number of details and decisions regarding the proposal, research, and review process would need to be made at a later date should the RSA program be redeveloped, the RSC did provide a number of recommendations that should be considered and included in these processes. These recommendations include: pre and full proposal submission, a critical post-research review, consideration of prior Principal Investigator research outcomes, a greater use of the SSC and broader expert pool in the review process, and outreach/communication requirements for results dissemination.

#### Data availability/open access

- Ensuring all data collected as part of the RSA program (funding and research) is made open access and available to interested parties is an RSA program objective associated with both Goal 1 (Research) and Goal 4 (Collaboration and Trust) recommended by the RSC. Some data collected through the RSA program will be confidential and would be protected by any applicable confidentiality laws. The RSC recommended all data, to the extent practicable, is made publicly available and if confidential data is collected it should be compiled in such a way that results can still be presented publicly. In addition, the RSC recommends all RSA project proposals include a data sharing plan that will be a metric used as part of proposal review score/ranking.

#### Use in science and management

- The RSC made a number of recommendations in an effort to improve the overall utility and direct application of research results into the science and management decision making process, the primary goal of the RSA program. For example, the RSC recommended the SSC, species-specific APs, and the RSC all contribute to the research priority setting process. In addition, project proposals would need to identify how the research outcomes would address a timely management issue and reduce scientific or management uncertainty. Lastly,



the RSC recommended greater emphasis on a communication and outreach plan to disseminate research results and potentially setting aside time at a Council meeting for P.I's to present their findings.

**Process for ASMFC/State Engagement:**

Close and continued engagement and cooperation between the Council, ASMFC, and state partners will be a critical requirement to be successful should the Council move forward with redeveloping the RSA program. States have a significant role in the shore-side monitoring and administration of the RSA program and a number of RSC recommendations for a potential new program defer specific decisions on some program elements to the states to help implement a program that is most effective and to the unique needs of each state. In addition, given the joint management responsibilities with the ASMFC for several species, there may be a need for joint action with the ASMFC to implement a revised program. Seeking input and working with the ASMFC's Law Enforcement Committee will also be important to help develop best practices and guidelines for participating states to follow.

The ASMFC's Policy Board will receive an update on the Council's progress and timeline regarding the RSA program to get some initial feedback on the level of engagement at this point. Depending on the Council's decision in June, a potential plan on how to move forward can be developed and an initial conversation could potentially be held at the August meeting.

**RSC Recommendations Regarding RSA Program Redevelopment:**

After considering the discussion and feedback during the course of the day, and all of the input over the last year through the workshops and Committee meetings, the RSC focused their discussion regarding a recommendation to redevelop the RSA program on the following two questions:

1. Given the general vision identified by the Committee, is there a viable path forward to redevelop the RSA program to appropriately address concerns of the prior program?
2. What would be the value of moving forward with a redeveloped RSA program vs. maintaining status quo?

After extensive discussion, there was **consensus by the RSC to conditionally recommended the Council consider redeveloping the RSA program**. Given the decisions made to date and all of the program components the RSC has considered and identified potential solutions and avenues to explore, the RSC felt there was a viable path forward to continue work on redeveloping the RSA program. The RSC felt there is value in the program and the opportunity to raise funds to produce quality research to benefit the science and management process is worth pursuing. However, the RSC recognized there is a lot of work remaining, details to be addressed, and additional questions still to be answered. Specifically, the RSC expressed concerns about addressing the state law enforcement and administrative burden and the overall cost-benefit of the program. Should those details or answers insufficiently address the issues raised, the Council is not committed to continued redevelopment or implementation of the program.



## Potential Redevelopment of the Mid-Atlantic Council’s Research Set-Aside (RSA) Program

*Comparisons between previous and revised draft RSA programs*

May 2022

The revised draft RSA program goals, objectives, and program elements provided here reflect the final decisions made by the Mid-Atlantic Council’s Research Steering Committee at their April 27, 2022 meeting<sup>1</sup>.

### Goals and Objectives

#### **Previous RSA program:**

As specified in Framework Adjustment 1 in 2002

**Goal:** The purpose of the RSA program is to support research and the collection of additional data that would otherwise be unavailable. The Mid-Atlantic Council wishes to encourage collaborative efforts between the public, research institutions, and government in broadening the scientific base upon which management decisions are made. Reserving a small portion of the annual harvest of a species to subsidize the research costs of vessel operations and scientific expertise is considered an important investment in the future of the nation’s fisheries.

#### **Objectives:**

1. Facilitate the collection of data that the Council and public deem important for fishery management purposes.
2. Create a mechanism whereby the data collected can be reviewed and certified acceptable for use by NMFS scientists and those individuals involved in the fishery management process.

In 2011, the Council considered a revised RSA program goal and identified five core principles ([https://www.mafmc.org/s/2011a\\_2011-02\\_RSA-Committee.pdf](https://www.mafmc.org/s/2011a_2011-02_RSA-Committee.pdf), see page 2). Not clear if ever approved and implemented.

#### **Revised draft RSA program:**

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<sup>1</sup> The April 27, 2022 Research Steering Committee meeting summary can be found on the June 2022 Council meeting webpage at: <https://www.mafmc.org/council-events/2022/june-2022-council-meeting>.

The goals and the associated objectives are in priority order.

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**Objectives:**

1. Support more applied management-focused research activities.
2. Higher priority on proposed RSA projects whose results would likely have timely application to species management.
3. Discourage commitments to longer-term monitoring projects.
4. Ensure all data collected (funding and research) through the RSA program is open access.

**Goal 2:** Ensure effective monitoring, accountability, and enforcement of RSA quota (Enforcement and Administration)

**Objectives:**

1. Apply enhanced, adaptive, and consistent enforcement standards and controls.
2. Ensure compliance with the reporting and use of the RSA quota.
3. Increase state-federal science, enforcement, and administration collaboration and cooperation.
4. Minimize law enforcement and administrative (agency and researcher) burdens.
5. Provide support for administrative and law enforcement activities.
6. Improve states' ability to revoke RSA fishing privileges.

**Goal 3:** Generate resources to fund research projects that align with the priorities of the Council (Funding)

**Objectives:**

1. Maximize revenues from RSA quota.
2. Provide equitable opportunity to fund research across all Council-managed species.
3. Increase scientific and industry partnerships.
4. Evaluate fairness in fishing community access to RSA quota.

**Goal 4:** Foster collaboration and trust between scientific and fishing communities and the general public

**Objectives:**

1. Ensure an open, accountable, and transparent process through all steps (funding and research) of the RSA program.
2. Ensure all data collected (funding and research) through the RSA program is open access.
3. Increase scientific and industry partnerships.
4. Evaluate fairness in fishing community access to RSA quota.

## Program Elements

*Green italicized text* indicates RSC has considered but not made a recommendation; *Purple italicized text* indicates Committee recommendations for state(s) consideration.

Program element/Area of concern	Old program	Revised draft program
<i>Administration and enforcement</i>		
Call-in/notification/reporting requirements	<ul style="list-style-type: none"> <li>• Pre-trip notification to IVR system (implemented in 2014)</li> <li>• 6-hour, if less – immediately upon leaving fishing grounds, pre-landing notification with pounds harvested, VTR serial number and port of landing (implemented in 2014)</li> <li>• Was to be “real time” notification to law enforcement of all planned RSA activities (unclear if happened)</li> <li>• Federal vessels landings through IVR, paper VTR, and dealer reports</li> <li>• Encouraged state vessels to submit electronically to ACCSP</li> </ul>	<ul style="list-style-type: none"> <li>• Require a 24-hour pre-trip notification to declare what species, port of landing and anticipated time of landing</li> <li>• Implement standardized reporting for <u>all</u> participating vessels with use of an electronic platform (e.g., VMS, eVTR, eTRIPs for state vessels)</li> <li>• Require a pre-landing requirement that is consistent between federal/state requirements and provide RSA harvest and completed eVTR prior to entering port (timing of notification TBD)</li> <li>• Federal vessels landings through pre-landing notification (if recommended), electronic trip submission, dealer report</li> </ul>
Shore-side monitoring of RSA quota	<ul style="list-style-type: none"> <li>• Enforcement checks but dispersed and diffuse given nature of fishery and landing locations</li> <li>• EFP/state exemption permits to allow vessels harvesting RSA quota to land above trip/possession limits and/or during closed seasons</li> </ul>	<ul style="list-style-type: none"> <li>• Require RSA harvest of specific species to occur on separate trips from non-RSA harvest of that same species (i.e., no mixed trips for specific species, all landings for species applied as RSA). Applies to both commercial and for-hire RSA trips.</li> <li>• Require all RSA quota to be offloaded at same port as specified in pre-trip notification</li> <li>• Require all vessels to be equipped with AIS or VMS</li> <li>• <i>Recommend states consider limiting offloads to specific hours</i></li> <li>• EFP/state exemption permits to allow for vessels harvesting RSA quota to land above trip/possession limit and/or closed season</li> </ul>
Number of landing locations	<ul style="list-style-type: none"> <li>• No limits on locations/ports or dealers to offload RSA harvest</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Recommend states decide if there would be limits on locations/ports or dealers to offload RSA harvest</i></li> </ul>
Number of vessels participating	<ul style="list-style-type: none"> <li>• NMFS cap of 50 participating vessels per project</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Recommend states decide if there would be vessel participation caps (total/by sector) beyond NMFS project cap</i></li> </ul>

	<ul style="list-style-type: none"> <li>• Both commercial and for-hire vessel participation</li> <li>• Participation of both federal and state permitted vessels</li> </ul>	<ul style="list-style-type: none"> <li>• Both commercial and for-hire vessel participation (no private recreational) (<i>Committee also supports states considering a possible phase-in of sector participation</i>)</li> <li>• Participation of both federal and state permitted vessels (<i>Committee also supports states considering a possible phase-in of state vessel participation</i>)</li> <li>• Limit the number of RSA quota transfers between vessels – both within the auction process and with bilateral agreements – to specific conditions (e.g., sale or damage to vessel)</li> </ul>
Verification of for-hire harvest	<ul style="list-style-type: none"> <li>• Reporting and monitoring differed by state but no verification</li> </ul>	<ul style="list-style-type: none"> <li>• Standardized reporting for all for-hire harvest with work to implement/modify eVTRs to flag as an RSA trip with associated required fields (ACCSP eTrips already has coding)</li> <li>• Committee has also discussed different for-hire reporting requirements (e.g., dated receipts for each passenger)</li> </ul>
Administrative burden and costs relative to benefit	<ul style="list-style-type: none"> <li>• Funds raised through auction used to support a full-time technician to work at NYDEC office</li> </ul>	<ul style="list-style-type: none"> <li>• Allow states to opt-in/out of shore-side participation in RSA program (e.g., providing state exempted permits)</li> <li>• Options under other categories – limit offload hours, vessel limits, no mixing of trips etc. would all help minimize burden</li> <li>• <i>Committee has discussed other options to minimize costs and how to provide admin/law support (e.g., the potential to use RSA funds to support activities, develop consistent guidance across states etc.) but need to continue to pursue options and avenues to find or dedicate funds to provide to states.</i></li> </ul>

Program element/Area of concern	Old program	Revised draft program
<i>Funding</i>		
Species/FMP potential RSA allocation was available	<ul style="list-style-type: none"> <li>• All Council species/FMPs except for Surfclam and Ocean Quahog (only ITQ fisheries at the time)</li> </ul>	<ul style="list-style-type: none"> <li>• All Council species/FMPs</li> </ul>

Portion of Acceptable Biological Catch (ABC) set aside	<ul style="list-style-type: none"> <li>0% - 3% of total allowable landings (TAL) portion of the ABC</li> <li>% set aside in any given year then converted into pounds</li> <li>Any unused quota is returned back to the overall fishery for available to harvest by the sectors</li> </ul>	<ul style="list-style-type: none"> <li>Fixed percentage of ABC for each fishery (i.e., different percentages for each fishery). The percentage would serve as a cap and set-aside could be lower if needs are less.</li> </ul>
Funding mechanisms	<ul style="list-style-type: none"> <li>Compensation fishing (bilateral agreements between grant recipients/PI and vessels to share proceeds from harvesting RSA) or through third party auctions to bid off quota lots by species</li> </ul>	<ul style="list-style-type: none"> <li>Ability to use both bilateral agreements and third-party auctions</li> <li>Additional dialogue with NOAA G.C. to get clarity as to what is feasible or not (e.g., ability for ASMFC to administer auction)</li> </ul>
RSA quota allocation	<ul style="list-style-type: none"> <li>RSA quota available for use was not allocated by sector</li> </ul>	<ul style="list-style-type: none"> <li>Of the fixed percentage of RSA quota allocated, separate allocation of quota across sectors (e.g., x% of RSA quota allocated to commercial and x% to for-hire)</li> </ul>
Lack of trust in third-party quota process	<ul style="list-style-type: none"> <li>Requirement to join and pay fee (\$2,000-\$250 per vessel) to third-party in order to participate in auction</li> <li>Overhead fee to run and administer auction</li> <li>Some data elements collected through auction not available for scientific use</li> <li>Periodic program reviews conducted</li> </ul>	<ul style="list-style-type: none"> <li>Conduct periodic review of funding mechanism(s) to determine approach supports or undermines project or program objectives</li> <li>The Council and NMFS do not have the authority to run an auction. The Committee supports developing guidelines/best practices to be followed by any third-party conducting an auction</li> </ul>
Less compensation fishing through greater use of the auction lead to greater disconnect and less collaboration between researcher and industry	<ul style="list-style-type: none"> <li>Use of a third-party auction became primary way to fund research and generated most revenue</li> </ul>	<ul style="list-style-type: none"> <li>Where feasible, compensation harvest is coupled with research activity</li> <li>Use of compensation fishing and third-party auction can be used to generate funds</li> </ul>

Program element/Area of concern	Old program	Revised draft program
<i>Research</i>		
Lack of project proposals/Principal Investigator (P.I.) disinterest	<ul style="list-style-type: none"> <li>Supported long-term projects (and costly compared to funds raised), limited the number of funded projects</li> </ul>	<ul style="list-style-type: none"> <li>Limited support for long-term/monitoring projects (e.g., proof of concept) with funding provided for only 1-2 years.</li> </ul>
Perceived conflicts of interest (COI)	<ul style="list-style-type: none"> <li>Individuals participating in priority setting process could also apply/receive RSA funds</li> <li>Management review process</li> <li>Inequities and access to RSA auction</li> </ul>	<ul style="list-style-type: none"> <li>Develop internal COI policies for entities engaged in RSA prioritization process</li> <li>Increase awareness and publication of Dept. of Commerce COI policies</li> </ul>

	<ul style="list-style-type: none"> <li>• COI dictated by federal grant regulation</li> </ul>	
Quality research/peer review	<ul style="list-style-type: none"> <li>• Technical review on specific criteria by three subject matter experts, did include SSC members by end of old program</li> <li>• Management review by RSC and recommendations to NMFS who has final decision</li> <li>• PI submit interim and final reports – some review by SSC</li> </ul>	<ul style="list-style-type: none"> <li>• Additional decisions and factors will be needed in the future, but the Committee recommends considering: <ul style="list-style-type: none"> <li>- Pre and full proposals</li> <li>- Comprehensive post-project review to determine value and utility</li> <li>- Outreach and dissemination of results</li> <li>- Greater use of SSC and broader pool of experts for review</li> <li>- Past performance of P.I.</li> </ul> </li> </ul>
Funding for species research	<ul style="list-style-type: none"> <li>• Research to target species set aside, up to 25% of funds could be used for other species</li> </ul>	<ul style="list-style-type: none"> <li>• Allow specific percentage of projected revenue from species quota sale to be used for research on any other managed species (e.g., MAFMC, NEFMC, ASMFC)</li> </ul>
Data availability/open access	<ul style="list-style-type: none"> <li>• Dictated by federal grant regulation – data sharing, COI, and review</li> </ul>	<ul style="list-style-type: none"> <li>• Subject to applicable confidentiality laws, all data collected (funding and research) through the RSA program is open access, made readily available and results able to be presented</li> <li>• Inclusion of a data sharing plan in proposal and conflict of interest statement</li> </ul>
Projects not used in science and management	<ul style="list-style-type: none"> <li>• SSC identifies research needs through 5-yr research priorities document</li> <li>• RSC set top 10 research and management priorities</li> <li>• Solicitation to address these priorities</li> </ul>	<ul style="list-style-type: none"> <li>• Changes to research priority development process to allow for greater SSC, AP, and RSC input</li> <li>• Proposal requirements that would need to include: addressing timely management issue, reducing scientific and/or management uncertainty, include a data sharing plan etc.</li> <li>• Council outreach/communication with public regarding project results and utility (e.g., dedicated time at a Council meeting)</li> </ul>

# ***Potential Redevelopment of the Research Set Aside Program Final Report to the MAFMC***

*SSC Economic Working Group*

May 26, 2022

## **Background**

In December of 2020 the Mid-Atlantic Fishery Management Council (Council) agreed to conduct a collaborative case study led by an Economic Working Group created under its Scientific and Statistical Committee (SSC). The subject, jointly agreed upon after prior consultation, was an economic evaluation of the policy deliberation already underway by the Council's Research Steering Committee (Committee) to consider whether to recommend the Council renew a Research Set Aside (RSA) program. This is the final report of that Economic Working Group on the RSA case study.

The RSA program has been suspended in the Mid-Atlantic region since 2014 due to the purposeful misreporting and overutilization of quota by a number of fishermen engaged in the program.<sup>1</sup> The Council is considering redevelopment of the RSA program, due to the potential to fund priority research on species managed by the Council. There are many economic considerations that would underpin a successful RSA redevelopment and the case study was intended to highlight them for the Council.

## **Methods**

The RSA redevelopment case study was a highly collaborative endeavor between the Economic Work Group, Council staff, and Council Members. In particular, the Economic Work Group focused on providing information, analyses, white papers and support for four stakeholder workshops organized by the Committee on the following topics: Research, Funding, Enforcement, and Final Recommendations. In addition to the four workshops, the Economic Work Group participated in three Research Steering Committee meetings to help inform economic considerations germane to their deliberations.

The initial Economic Working Group plan of providing scientific advice was predicated on the availability and access to economic data to conduct appropriate economic analyses of the prior RSA program and model possible future changes if a program were to be reestablished. Early on it became apparent that economic data that would be needed to assess the benefits and costs of the past program were not routinely collected by federal agencies. What data were collected were held and deemed proprietary by industry, and negotiations to make them

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<sup>1</sup> [http://www.mafmc.org/s/Tab-06\\_RSA.pdf](http://www.mafmc.org/s/Tab-06_RSA.pdf)



available to SSC economists for this case study were unsuccessful, beyond summary statistics. Thus, simulations and qualitative impacts have been substituted in lieu of empirical analyses from the prior RSA program. This missing data has a profound impact on the utility of the Economic Work Group's output for RSA redesign, and any future topic lacking such data will similarly be impacted. This represents a data gap we recommend the Council should give highest priority to closing.

For example, bids for federally managed public resources such as timber sales<sup>2</sup>, oil gas and offshore wind leases<sup>3</sup> are part of the public record, which helps ensure transparency and informs management decision-making. Controls that balance data access for resource management needs with business protections work successfully in many other federally managed natural resources. Any data concerning sales of fishing quota should be viewed as in the public interest and is key to understanding program performance. Bidding data information has the potential to provide ancillary benefits such as understanding relative value across sectors and informing multispecies management, as outlined in the Workshop 2 (Funding) white paper presented in Appendix 1.2. The Economic Work Group suggests that this type of information should be routinely collected when possible, as a relatively direct way of building capacity towards true benefit cost analysis. Benefit-cost analysis is the standard by which the value of alternative policies should be assessed within the economics discipline, and is required by law for any federal rule making.<sup>4</sup>

## **Results**

All the background material developed by the Economic Work Group for these workshops and Committee meetings can be found in the Appendix. In Section 302(g), the Magnuson Stevens Act describes the role of the Scientific and Statistical Committee to provide its Council ongoing scientific advice for fishery management decisions. This final report summarizes the RSA redevelopment case study within the following four subordinate SSC areas of engagement: I) Review; II) Scientific Specifications; III) Focused Analyses; and IV) Scientific Advice for Decision Making.

### **I. Review**

Review is one of the SSC's primary functions as a scientific body, with a recent example being peer review of the Recreational Models in support of the Recreational Harvest Control Rule Framework/Addendum. Beyond peer review, the SSC engages in less formal review of processes and scientific products as a normal component of their meetings, such as the annual review of the State of the Ecosystem report. Although not focused on a specific scientific product, much of the work of the Economic Work Group can be viewed through this Review function. For example, the six one-page white papers developed in support of Workshop 1

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<sup>2</sup><https://www.fs.usda.gov/resourcedetail/bdnf/landmanagement/resourcemanagement/?cid=FSEPRD977995>

<sup>3</sup> <https://www.boem.gov/renewable-energy/state-activities/new-york-bight-results-round-round>

<sup>4</sup> <https://www.archives.gov/federal-register/executive-orders/pdf/12866.pdf>

(Research), found in Appendix 1.1, present a critical review of the historic RSA program, with a focus on addressing perceived performance deficiencies through program design. Nine take away points were identified and are discussed in the section below.

- 1. Peer review and PI communications: before, during, and after completion of RSA projects.**
- 2. Approved statistical design integrity and risk/adaptability**

Contrary to popular belief, all but two of the 44 projects in the historic RSA programs have final reports that were accepted under peer review by NOAA Fisheries. However, a revised RSA program presents an opportunity to rethink how proposals are evaluated to ensure that they meet the standard of "best scientific information available". The following issues in particular should be addressed explicitly in any redesigned program:

- A. What is the structure of the proposal selection process? Is there a pre-proposal stage? How is reviewing structured? What are the review criteria and are these criteria well-matched to reviewer expertise?
- B. How are requests by Principal Investigators (PI) for changes to proposed research evaluated?
- C. How are project outputs (e.g., final and perhaps interim reports) assessed for their scientific validity and use to guide management? Leave it to the journal peer-review process? Ask the SSC or a subgroup of SSC members to review results? Is there an iterative process of peer-review and response by the PI?

### **3. Financial integrity: No conflicts of interest**

The historic RSA program undermined the public's perception of the science/management nexus, working directly against a major objective of the program itself. Full and transparent accountability should be viewed as a non-negotiable pillar of any RSA redesign to ensure the program leads to credible outcomes. Best practices would suggest extending the Conflict of Interest policy to all aspects of the RSA program, if redeveloped. This would include the preliminary ranking of RSA research priorities, engagement of the SSC as an additional pool of peer review expertise, sale of quota, and other decision points in which less than full transparency could reduce public trust in the RSA program. To a great extent, this extension merely entails codifying practices already used by the MAFMC and other bodies related to RSA administration.

However, it could be important to have a formal process by which the conflict of interests are publicly identified and addressed for transparency. The extent to which third parties such as clearing houses, auctioneers, or other entities facilitating the buying and selling of quota could be held to a conflict of interest policy depends on the exact manner in which that entity is engaged. Nevertheless, it would be important that any entity engaged in such a manner understand that public perception is a key metric by which the success of the RSA program will ultimately be judged, and that public conflict of interest policies, or lack thereof, could play a key role in public perception.

#### **4. Consistency with stated Council plans/objectives & linkages to management goals**

The Research Steering Committee already has stated certain kinds of research it wants the new RSA to focus on (e.g., more applied; management focused; short term outcomes). In addition, the Council has endorsed the content and process described in its new 5-year Research Plan in October 2020 relative to their seven strategic research themes, including species-specific priorities. The topic areas of assessment priorities have also been linked to the Research Track Assessments, so there is ample raw material to form a consensus of research criteria to sit alongside the stated management goals (State and federal) for each managed stock that ultimately the Council process would endorse for a new RSA program. These are all reasonable objectives. Whatever final process chosen needs to be open, transparent, inclusive, well documented, and managed for performance over time (via accountability/performance measures).

#### **5. Universal data access and transparency**

The previous RSA program was a federal financial grant assistance program. Since 2013, a data sharing and management plan is required for all the federal funded projects (OSTP 2013; OMB 2013; NOAA 2013, 2016; EPA 2016). Historically, data access was not a requirement of RSA-funded projects, and data stewardship plans were not weighed in the peer review and evaluation process.

Data sharing is clearly important for ensuring replicability of results, transparency and trust. It is also value-added to the economic investment made, as the data may be useful in research being conducted by other researchers for both Council and non-Council purposes.

#### **6. Application of Benefit/Cost principles in proposal evaluation**

Economists look to the value of a research project to point us in the right direction using benefit-cost analyses, and this is where the past RSA program critics conflated "quality" with "usefulness" of the science. Some of the RSA research may have been statistically well designed and analytically correct in their analysis but did not address a relevant scientific question to resolve an assessment dilemma or management impediment, i.e., it lacked value/benefit or relevance. The lesson learned is to ensure a strong linkage/collaboration/partnership between the RSA researcher and the intended consumer of the research results to make sure the research product will be relevant, useful and at a minimum considered in a direct scientific or management application. Future proposals lacking such linkages would be down-rated.

While making the linkages between conducting research and subsequent management consequences is always difficult, with limited research funds it is key to understanding where the Council should invest their RSA funds. The sort of performance metric that research proposals should be asked to submit are those related to their proposed impacts relative to

reductions in model uncertainty, potential impacts on ABC, relaxation of gear and other fishing restrictions, etc. Tools and analyses, such as MSEs, that could be useful to measure such changes should be incorporated where feasible into the projects such that the Council can evaluate its investments adequately.

## **7. Social equity implications of RSA awards**

There is a proposal on the record of the Research Steering Committee to have funds from a species auction only used for research on that species. This resolves the issue of one fishery subsidizing another. However, fisheries with low ex-vessel values that have critical research needs may never be able to generate sufficient funds to support an RSA on their own. Without further changes, RSA could only be supported in "wealthy" fisheries and "poorer" fisheries would have to find other sources of research funds. This could have a differential negative impact on fishing communities reliant on low margin bait and forage fisheries where research is already scant on these species, scientific uncertainty high, and management approach usually ultra conservative as a result. These smaller scale fisheries and their communities receive less political attention than major fishing ports.

In such a case the Council may need to consider a broader discussion of Council standards/priorities of when to use RSA funds in the larger context of other sources of research funds, i.e. Council programmatic/appropriated funds, State funds, other NOAA/ federal grant funds, etc., to ensure that its complete range of FMP research needs get covered. This could include rotating RSAs across different high-valued fisheries and years, or focus on multispecies/ecosystem research rather than single species research to pool resources and take advantage of economies of scale that benefits the entire Mid-Atlantic.

## **8. Coordination, Integration with State, other Researchers**

It is important that potential researchers are aware of related ongoing or planned research in order to avoid duplication and to foster possible collaboration. A relatively straightforward manner to ensure broad communication of ongoing work is utilizing existing Council groups and coordinating bodies to assess duplication and the possibility of collaborative efforts. These groups include Advisory Panels, Fishery Management Action Teams, and the SSC species leads, among others.

## **9. Decoupling Allowances and Forage and Ecosystem Species**

Decoupling the research data collection from the harvest of the RSA quota has important benefits. It allows for allocation of the RSA quota through a market such as an auction, which maximizes revenues available to fund research, and if efficient allocates quota to individuals who value it most. A market mechanism can provide data on quota value across sectors, which can inform allocation discussions. The auction data would also provide information on the economic value harvesters attached to the regulatory waivers associated with the RSA quota, which can be used to assess the cost restrictions imposed on unexempted vessels. There are auction designs that could help generate funds for forage species. This could be done, for

example, by bundling the quota of forage species with the quota for high value species. The bundle would then be auctioned off as a single unit.

Decoupling the research data collection from the use of the RSA quota could also have (serious) drawbacks, especially if the auction market is poorly designed and implemented. All the benefits associated with a competitive market (i.e., auction) rely on a transparent process for allocating that quota. Without participants' trust in the process (e.g., due to collusion, unclear rules for awarding winners, etc.) the auctions will not be competitive and will not maximize revenue. Likewise, all the information associated with the bidding for the quota that could be used for management is only valuable if it is accurate and readily available to the Council. The market for RSA quota should be run by a third party following clear guidelines specified by the Council. Decoupling the data collection from the harvesting of the RSA quota makes enforcement of quota reporting requirements significantly harder due to an increase in the number of participating vessels/ports and increased monitoring/enforcement complexity. Decoupling the data collection from the harvesting of the RSA quota may also prevent researchers from developing long-term relationships with industry counterparts.

## **II. Scientific Specifications**

The SSC provides the Council Scientific Specifications through tasks such as informing research Terms of Reference, and bounding specific analyses to ensure that the science used in management adequately assesses uncertainty (e.g., model structure, parameterization) through robust statistical and mathematical approaches.

In the RSA redevelopment assessment, the Economic Work Group provided a similar function by highlighting the need to set specific goals and objectives for the RSA program as a key first step to the process. The reason being is that the program should be designed to meet specific goals and objectives to maximize probability of success. Without the goals and objectives in hand, there is no way in which to understand how different program design choices would be expected to impact program performance. The Economic Work Group worked collaboratively with Committee leadership and Council Staff to draft and organize alternative goals and objectives, which were drawn predominantly from documentation of the historical RSA program and discussions during Workshops 1 - 3 and Committee meetings. This work ultimately led to the Committee's development, ranking, and adoption of the goals and objectives, as presented in the Committee's April 27, 2022 meeting report.

Additionally, the Economic Work Group framed the choices of program design within the context of trade-offs across the proposed goals and objectives by developing a decision tree around three main design characteristics: 1) Who is involved in the RSA program, 2) How would you allocate/divide RSA quota, 3) What does an RSA trip look like?<sup>5</sup> The Economic Work Group illustrated how program design decisions affect the ability to achieve differing goals and objectives. The decision tree was used to frame discussions during Workshop 4 (Final

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<sup>5</sup> [https://www.mafmc.org/s/6\\_Ddecision-Tree-Tables\\_01\\_2022.pdf](https://www.mafmc.org/s/6_Ddecision-Tree-Tables_01_2022.pdf)

Recommendations), in order to focus the conversation on the components of the program design which engendered the most concern and/or disagreement.

### III. Focused Analyses

Relatively frequently, SSC members help to develop novel analyses to inform Council decision-making, often directly in response to a Council request for information. One example is the work currently underway by the SSC's Ecosystem Working Group and collaborators to understand the potential impact of climate on the performance of alternate control rules.

The Economic Working Group developed an analysis in support of Workshop 2 (Funding), presented in Appendix 1.2. Ultimately, the lack of individual bid data from the original RSA quota auctions precluded the development of specific guidance on how much revenue would be expected to be generated from different market designs for quota, and the Economic Work Group strongly suggests that this information be collected within any redesigned program due to the wealth of information on management performance that it provides, as detailed under Topic 9 of the Review section of this document. Nevertheless, the Economic Work Group was able to access summary statistics by which relative trade-offs across market designs could be demonstrated through simulations.

Importantly, the simulated scenarios provided were **hypothetical** and only intended to illustrate relative performance on revenue generation rather than to estimate dollar amounts raised under each approach. The simulations only explore a few plausible scenarios and do not represent an exhaustive list. Each scenario is replicated 1,000 times. The simulations assessed the performance of sequential English auctions for 40 summer flounder lots of 10,000 lbs of quota against bilateral agreements for the same lots. The auction scenario assumed 150 bidders with a seller reserve price of \$1.50/lb. A total of six scenarios were developed for the workshop. The baseline case represents an auction entry fee of \$100/vessel and 4% of sales to administrative costs with recreational and commercial fishermen allowed to bid on all lots and no collusion in bidding strategy. The Separate Com. & Rec RSA Auctions scenario allows commercial fishermen only to bid against other commercial fishermen and recreational fishermen only to bid against recreational fishermen. The Auction with high Admin/Entry costs changes the fees to \$500 and administration costs of 12.5% of sales. The auction with collusion allows groups of bidders to work together by all bidding the lowest value of the group. The Separate Com. & Rec. RSA Auctions with High Admin/Entry costs scenario separates commercial and recreational lots and imposes the \$500 entry fee and 12.5% administrative fee structure. Results of the simulation are presented in Table 1. The results indicate that, relative to bilateral agreements, the performance of an auction depends critically on its design.

**Table 1. Comparison of additional revenue generated from an auction relative to bilateral agreements, under alternate assumptions on market structure.**

<b>Scenario</b>	<b>Comparison (Excess Revenue in the Auction)</b>
Baseline Case	28%
Separate Com. & Rec. RSA Auctions	15%
Auction with high Admin/Entry costs	17%
Auction with Collusion	20%
Separate Com. & Rec. RSA Auctions with High Admin/Entry costs	5%

#### **IV. Scientific Advice for Decision Making**

Recent work by an ad hoc sub-committee of the SSC on elucidating impacts of alternatives being considered under the Recreational Harvest Control Rule Addendum/Framework presents an example of how the SSC provides Scientific Advice for Decision Making. The Council asked the SSC to answer very specific questions around the relative risk of alternate harvest control rule specifications.

To some extent, the Economic Work group functioned in that capacity in support of RSA Workshop 3 (Monitoring and Enforcement). In the material for that workshop<sup>6</sup>, the Economic Work Group highlighted the incentives underlying the mislabeling that ultimately doomed the original RSA program.

The goal of the Workshop 3 was to identify potential program modifications that could prevent recurrence of previous enforcement issues. The Economic Work Group was asked to outline what role economics could play in identifying effective program modifications. Economic theory can provide guidance through theoretical models of mislabeling. Fishermen will mislabel if the expected loss (probability of being caught, indicted, and convicted multiplied by the penalty once convicted, which could include not only fines but also subjective costs of jail time or loss of social status) is less than the expected benefit from mislabeling (probability of not getting caught multiplied by the profits generated from the additional fish sold). This suggests two main levers by which mislabeling can be curtailed: 1) increasing the probability of being caught, indicted and convicted, 2) Size of the penalty. Neither of these variables are directly under control of the Council or Office of Law Enforcement, which means that in reality only increased monitoring & enforcement effort is an option, limited by budgets as it is.

However, it should be noted that numerous proposals coming out of Workshop 3 would be expected to decrease the cost of program monitoring and enforcement. Although not without

<sup>6</sup> <https://www.mafmc.org/s/RSA-workshop-3-enforcement-summary-report-Final.pdf>

tradeoffs in program performance, as highlighted in an Economic Work Group Memo to the Committee<sup>7</sup>, changes in program administration which decrease monitoring and enforcement costs are likely warranted given the serious issues exposed by the previous RSA program enforcement actions.

## **Conclusion**

The Economic Work Group's engagement in the Research Set Aside program illustrated how the SSC's expertise can be utilized by the Council to inform management decision-making. The roles of Review, Scientific Specifications, Focused Analyses, and Scientific Advice for Decision Making are traditional for the SSC and should be extended more readily to the economic discipline. The work outlined in this report is not exhaustive of the work undertaken by the Economic Work Group. For example, the Economic Work Group illustrated trade-offs across RSA program goals based on different design decisions heading into Workshop 4 (Final Recommendations)<sup>8</sup> in something akin to a role as Scientific Advisor. The roles themselves can also be blurred, as most typologies ultimately fail. However, the report highlights major contributions of the Economic Work Group to the RSA redevelopment discussion as an illustrative case study of how economic expertise can be further utilized in the future.

As with any science, the quality of the analyses, recommendations, and ultimate advice that the Economic Work Group provides the Council will depend on the data available. It is important for the Council to begin collecting economic data to further inform management decisions. The SSC has previously submitted recommendations and priorities to the Council for economic data collection, and if the Council decides to act on those recommendations, we would welcome the opportunity to collaborate on a plan of action.

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<sup>7</sup> [https://www.mafmc.org/s/5\\_Memo\\_to\\_RSC\\_RSA-Decision\\_tree\\_01\\_11\\_22.pdf](https://www.mafmc.org/s/5_Memo_to_RSC_RSA-Decision_tree_01_11_22.pdf)

<sup>8</sup> [https://www.mafmc.org/s/Memo\\_SSC\\_Econ\\_WG\\_Workshop\\_4\\_Feb\\_16\\_2022.pdf](https://www.mafmc.org/s/Memo_SSC_Econ_WG_Workshop_4_Feb_16_2022.pdf)



## Appendix 1.1

### Research Set Aside Workshop - July 15, 2021 SSC Economic WorkGroup One-Pager Briefing on:

#### **Topic 4. Consistency with Stated Council Plans/Objectives & Linkages to Management Goals;**

#### **Topic 6. Application of Benefit/Cost Principles in Proposal Evaluation**

The purpose of this one-pager is to highlight the major challenges faced by the previous RSA program in the selection of fisheries/prioritization of research projects with regard to consistency with stated Council plans/objectives, especially linkages to management goals. The SSC Economic Workgroup's primary recommendation is the broader application of benefit/cost principles in future RSA program implementation.

##### 1) The issue:

The Council's long-term role is to obtain the greatest benefits to the nation from the living marine resources under its legal stewardship. In some cases, these management goals and objectives are compromised by uncertainty in the science and subsequent application of policy. Research is paid for and conducted by many entities to fill knowledge gaps with the intent to improve management outcomes. Getting the most "bang-for-that-buck" is critically important.

The Council historically created Research Set-Asides taking a 3-percent share of annual quota to generate revenue to support research. Acting rationally, the Council implicitly assumed that the value of the resultant research met or exceeded what the quota would have been valued at by the fishermen in the subsequent sale of quota. No economic data exist to support this conclusion. Because the species value varies widely across fishery management plans, the absolute amount of funding for research projects by species differed widely, affecting the quantity and type of research projects solicited. This had a direct impact on the return on investment of the proposed research on the Council's management objectives.

##### 2) Past RSA experience:

The objectives of the Council's original RSA program were not purposely aligned with economic performance, efficiency, or revenue outcomes. Rather, as the initial Environmental Assessment stated, the RSA Program was originally established to regain the public trust:

"One of the original objectives of the RSA Program was to foster collaboration between the scientific community (from both government and academia), the fishing community, and the general public. "

The Council was not trying to maximize the amount of research for a given dollar; its objective was to engage fishermen directly in the conduct of research because many had no faith in the science being conducted by NOAA or the states, and this lack of confidence was creating management and enforcement issues. This was, and could still be, a legitimate Council goal.

Notwithstanding the efficiency intention, however, what was the relationship of RSA research to improving management outcomes? A large number of past RSA research priorities focused on stock assessment improvements. The SSC Economic Working Group found frequent references in the public record criticizing the "quality" of the resulting science, but in fact all but two of the 44 projects passed NOAA scientific peer review. However, there was little basis available to evaluate the marginal improvements in a stock assessment relative to the research funding being spent. The problem was the absence of specific performance metrics: how the research specifically tied into or affected the current assessment or management program. Without performance metrics it has been difficult to compare the relative impacts of past projects.

3) Pros and cons of options the Council could consider:

What fisheries should be given priority in implementing research projects? The Research Steering Committee (RSC) already has stated certain kinds of research it wants the new RSA to focus on (e.g., more applied; management focused; short term outcomes). In addition, the Council has endorsed a new 5-year Research Plan in October 2020 relative to seven strategic research themes, including species-specific priorities. The topic of assessment priorities has also recently been linked to the Research Track Assessments, so there is ample raw material to form a consensus of research criteria to sit alongside the stated management goals (State and federal) for each managed stock. Ultimately a new Council process would endorse such a consensus of criteria for a new RSA program. These are all reasonable objectives.

But how should factors such as uncertainty in stock assessment models (i.e., larger OFL CVs) and the likelihood of a constraining ABC help to identify fisheries where the biggest economic gains from investment in science are expected?

Economists look to the value of a research project to point us in the right direction using benefit-cost analyses, and this is where the past RSA program critics conflated "quality" with "usefulness" of the science. Some of the RSA research may have been statistically well-designed and analytically correct, but did not address a relevant scientific question or timely resolve an assessment dilemma or management impediment, i.e., it lacked value/benefit or relevance. The lesson learned is to ensure a strong linkage/collaboration/partnership between the RSA researcher and the intended consumer of the research results to make sure the research product will be relevant, useful, and, at a minimum, applied directly to fishery science or management, at the right time. For example, at the proposal stage does a research proposal identify a specific client or entity by name and when they will be using or applying the research results? Future proposals lacking such linkages would be down-rated.

Despite the challenges of linking research outcomes with their consequences for management, measures of performance are essential for the Council's investment of RSA funds. RSA funds are a financial asset, and like any financial asset invested by a bank, credit union or mortgage broker, the investor (i.e., the Council for RSAs) has a responsibility to collect sufficient economic and financial data to measure the return on its investment. RSA economic and financial data were not routinely collected in the past so performance and return on this research investment could not be monitored. For example, the Council cannot answer whether the fishery would have been better off leaving the 3-percent quota set aside with the original TAL. The SSC Economic WorkGroup

recommends a suite of economic and financial data be collected in association with every RSA project.

The allied performance metrics that research proposals should be asked to address are those related to the impacts of the research products relative to proposed reductions in model uncertainty, potential impacts on ABC, relaxation of gear and other fishing restrictions, etc. Tools and analyses, such as Management Strategy Evaluations, that could be useful to measure such changes, should be incorporated where feasible into the projects such that the Council can begin to adequately evaluate the consequences of its investments.

## **TOPIC 1. Peer Review and Principal Investigator (PI) Communications: Before, During, and After Completion of RSA projects.**

### ***The Issue and Past RSA Experience***

There has been much discussion over time about the scientific validity of the research conducted under the RSA Program. Peer review - of proposals and of research results - while not without its problems, is the accepted method for establishing scientific validity. The historical RSA program widely solicited proposals in a competitive process, with each proposal initially reviewed by an internal NOAA subject matter expert, an external subject matter expert, and an industry subject matter expert. These were subject to further technical, administrative and legal analyses and review by NOAA and the Council, before a final selection of grantees was made by NOAA. Progress reports and a final completion report were required of each grant recipient (or Principal Investigator, PI). The final report was certified and approved by NOAA science staff after review and necessary revisions. This was similar in many ways to a peer review of the RSA projects, although unlike most peer-reviews, the PIs of RSA projects were, at least in some cases, unaware that a review was taking place. Contrary to popular belief about projects failing scientific peer review standards in the historic RSA program, all but two of the 44 projects have final reports that were accepted following some level of review by NOAA Fisheries.

However, a revised RSA program presents an opportunity to rethink how proposals are evaluated, how changes to funded proposals are considered, and how project results are reviewed to ensure that they meet the standard of "best scientific information available" (BSIA).

### ***Pros and Cons of Options the Council Should Consider***

The selection process for proposals is likely to function best when it is transparent (to PIs), gives appropriate weight to scientific merit and Council programmatic priorities, and engages the broader scientific community in a rigorous peer-review process.

- 1) What is the structure of the proposal selection process?
  - a. Is there a pre-proposal stage? Pre-proposals allow PIs to suggest one or more potential proposal ideas in a shorter format and to receive feedback on whether they are likely to be competitive for funding under the RSA program. Sea Grant (SG) and some National Science Foundation (NSF) programs are among the larger granting organizations that utilize pre-proposals. For the RSA program managers, they can reduce the review burden by limiting the number of full proposals that must be fully evaluated by reviewers to only those ideas that are a good fit for the RSA program. For PIs, pre-proposals are a means to float an idea without committing to writing a full proposal for an idea that might have little chance of success. However, pre-proposals add another step to the selection process, potentially extending an already lengthy process.
  - b. How is reviewing structured? Are pre-proposals (if any) reviewed internally, perhaps just to confirm fit to RSA priorities, or externally to evaluate potential scientific merit (may be difficult from the short pre-proposal format)? Are there separate written and panel review stages? Both SG and NSF have this structure where 2-3 external written reviews are solicited for each proposal and then a panel is convened to discuss the

proposals (and their reviews) and potentially rank them. Discussion of proposals at a panel provides a measure of consistency and helps reduce the influence of outliers (unusually positive or negative reviews) in the selection process.

- c. What are the review criteria and are these criteria well-matched to reviewer expertise? RSA proposals should be evaluated against at least two broad criteria: their scientific merit and their value to stock assessment, management, or other Council priorities. External scientific review (e.g., by academic fisheries scientists, oceanographers, economists, etc.) can help engage the broader scientific community and extends the base of expertise beyond that available within the community of Council staff and NOAA scientists. However, external reviewers may not be in a position to evaluate this second category. Instead, FMAT and Council Species Committees or NEFSC stock assessment leads may be better positioned to evaluate relevance of proposed research with respect to priorities.
    - i. Past performance in grant management and completion, including but not limited to past RSA grants, is used in numerous other granting agencies such as NOAA Sea Grant as a valuable review criterion.
- 2) How are requests by PIs for changes to proposed research evaluated?
- a. It's not uncommon for field research projects (and, to a lesser extent, lab research) to encounter unanticipated challenges that require changes to the study design. However, some changes may end up invalidating the original design or at least complicating the statistical analysis. Who is empowered to approve or disapprove changes requested by PIs? What criteria should they use when making these decisions? To what extent should they rely on additional outside evaluation of such requests (external review may add rigor but can also slow decision-making)?
  - b. Some RFPs include an explicit requirement that the proposal identify *anticipated* challenges and how they will be addressed. If implemented in the RSA program, such a requirement could allow for faster decision-making for such challenges since they are already described in the funded proposal. That is, no additional approval may be necessary if the proposal already specifies changes that will be made to protocols in the event of certain challenges arising.
- 3) How are project outputs (e.g., final and perhaps interim reports) assessed for their scientific validity and use to guide management?
- a. Leave it to the journal peer-review process? This is typical for SG and NSF and is generally considered the "gold standard," but often quite slow (2-3 years between completion of field/lab work and publication in a journal is not uncommon; <1 yr is rare) and the rigor of the process is beyond the Council's control and generally hard to determine since reviews and reviewer names are rarely published.
  - b. Ask the SSC or a subgroup of SSC members to review results? SSC members represent a scientifically well-qualified group that has a great deal of experience with scientific peer-review and is well aware of Council science needs. SSC review would ensure that at least some SSC members were aware of all RSA results, likely increasing uptake of these results in SSC decision-making.

- c. Is there an iterative process of peer-review and response by the PI? Is this in-person or written or some combination? Such a process could help hone the quality of the research outputs and provides a mechanism to resolve simple misunderstandings. However, it is potentially time-consuming and would need to be communicated to PIs in advance since it's not a standard part of most granting programs. Nevertheless, this could be a key component of a scientific process in which the end-result is expected to be utilized in a management context.
- 4) What is the role of the SSC in reviewing (pre)proposals and RSA project reports?
- a. The SSC members represent a community of scientists already engaged with the Council and (collectively) experienced in all aspects of grant writing, grant reviewing, and scientific peer-review. The SSC is also familiar with research priorities for Council-managed species as the SSC helps develop these research priorities.
  - b. Many SSC members will also be PIs or Co-PIs on RSA proposals and colleagues from their home institutions will submit proposals. This represents a conflict of interest (COI) that will need to be managed. While this presents no insurmountable obstacle to SSC involvement in RSA review, it may limit the number of SSC members without COIs available to participate.

**RESEARCH STEERING COMMITTEE WORKSHOP 1**  
**SSC Economics Workgroup Assessment**  
June 28, 2021

**TOPIC 3. RSA Program Transparency and Conflicts of Interest**

1) THE ISSUE

The historic RSA program was a federal financial assistance program in the form of a grant, not a contract, governed by a large body of rules and regulations that acknowledged past performance in the proposal's evaluation and ensured future accountability via "best effort." One of the main objectives of the historical RSA program was to regain public trust in the science and management of fisheries. The RSA review made clear that the historical program eroded, instead of bolstered, the trust for a multitude of reasons (Seagraves 2014).

Avoiding conflicts of interest throughout the process, from proposal ranking to quota sales through the scientific review of the final report, is a key component of regaining public trust in the RSA program. This transparency is key to ensure the Council, NOAA, and, by extension, all entities involved in the RSA program are viewed as "honest brokers;" i.e., trusted by the public to facilitate the program with the aim of maximizing the benefits to society and not any one individual or party.

For example, transparency in peer review is paramount if the SSC is to become more engaged in the RSA review process, as several members have been recipients of historic RSA awards.

2) PAST RSA EXPERIENCE WITH THE ISSUE

1. As part of the federal grant process, potential conflicts of interest are avoided by disqualifying technical reviewers with existing relationships to proposal teams.
2. Persistent concerns about the "veracity of research" (Seagraves 2014) funded under the RSA program highlights the need for additional safeguards and transparency, including public conflict of interest policies. A recent NEFMC RSA review highlighted stakeholder concerns as follows: "There is potential for conflict of interest to enter in the process of priority setting at various levels (i.e. PDT members, advisory panel members, etc.) since some participants are also applicants and/or recipients of RSA grants." (Research Set-Aside Review Panel 2019)
3. Conflict of interest in the Management Review Panels utilized by the NEFMC are also a continuing concern for some stakeholders (Research Set-Aside Review Panel 2019).
4. There were perceived inequities regarding the auctions used to sell RSA quota, with the perception that "...the program is only available to a select few..." fishermen (Northeast Fisheries Science Center 2009).

3) DIFFERENT OPTIONS THE COUNCIL COULD CONSIDER FOR THE ISSUE

## DISCUSSION DRAFT

It is clear that concerns about the financial integrity of the historic RSA program undermined the public's perception of the science/management nexus, working directly against a major objective of the program itself. Full and transparent accountability should be viewed as a non-negotiable pillar of any RSA redesign to ensure that the program leads to credible outcomes. Best practices would suggest extending the Conflict of Interest policy to all aspects of the RSA program, if redeveloped. This would include: (1) the preliminary ranking of RSA research priorities, (2) engagement of the SSC as an additional pool of peer review expertise, and (3) full disclosure in sale of quota, and other decision points in which less than full transparency could reduce public trust in the RSA program.

To a great extent, this extension merely entails codifying practices already used by the MAFMC and other bodies related to RSA administration. For example, both Council members and SSC members routinely recuse themselves from deliberations and decisions in which there is potential for a perceived conflict of interest (see, e.g. May 2021 SSC report [https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/60bfc1b8dc98c54b33d1aa63/1623179705235/MAFMC+SSC+Report+May+2021+meeting\\_final.pdf](https://static1.squarespace.com/static/511cdc7fe4b00307a2628ac6/t/60bfc1b8dc98c54b33d1aa63/1623179705235/MAFMC+SSC+Report+May+2021+meeting_final.pdf) ). However, it would be important to have a formal process by which the conflicts of interest are publically identified and addressed for purposes of transparency.

The extent to which third parties such as clearing houses, auctioneers, or other entities facilitating the buying and selling of quota would be held to a conflict of interest policy depends on the exact manner in which that entity is engaged. Nevertheless, it would be important that any entity engaged in such a manner understand that public perception is a key metric by which the success of the RSA program will ultimately be judged. Public conflict of interest policies, or lack thereof, could play a key role in public perception. Compliance costs should be minimal on this front, given that the mitigation of conflicts of interest are considered best practice across all industries.

### Recommendations:

1. Publicize existing Conflict of Interest Policies such as Department of Commerce Form CD-571 for RSA program reviewers.
2. Develop public Conflict of Interest policies for the SSC, MAFMC, APs, and others engaged in RSA program prioritization, technical review, and funding to ensure transparency and increase trust.

Seagraves, Rich. Mid-Atlantic Fishery Management Council, "RSA Program Issues", Dover, DE, July 30, 2014.

Northeast Fisheries Science Center. 2009. *Northeast Research Set-Aside Programmatic Review Report*: Woods Hole, MA June 12, 2009.

Research Set-Aside Review Panel. 2019. Program Review of New England Research Set-Aside Programs: Final Report: New England Fishery Management Council: Newburyport, MA: April 2019.



## **TOPIC 5. Universal data access and transparency (new # IV)**

### **The purpose of this topic is to**

- Identify the major problems of data sharing and transparency for RSA-funded projects,
- Define or redefine the data sharing policy and data management process for all the projects funded by RSA, and
- Create transparent policies and processes.

The topic suggests seeking a policy for RSA that “all data from funded research projects should be made freely available without restriction or prior permission on a public data repository”.

### **The issue**

The previous RSA program was a federal financial grant assistance program. Since 2013, a data sharing and management plan is required for all the federal funded projects (OSTP 2013; OMB 2013; NOAA 2013, 2016; EPA 2016). Historically, data access was not a requirement of RSA-funded projects, and data stewardship plans were not weighed in the peer review and evaluation process. Some of the historically funded projects had constraints on data sharing for research and management purposes.

Data sharing and transparency are important for reaching the goals of RSA. The RSA program historically favored projects based heavily on those that would “acquire data for management that fills a data need”, and the transparency of the data and repeatability of the research results are important for regaining public trust in the science and management of fisheries. Also, without a good data sharing and management policy, waste of resources can be a problem for the value of the investment.

### **Past RSA Experience with the Issue**

Historically, the RSA program did not have a mandatory data sharing and management policy for all the RSA-funded projects. The RSA projects fell into the following categories of data sharing: fully shared, partially shared, shared with restriction, not shared. Currently, there is no unique data management system (such as sharing with a council or in a public data repository) and the data requests require contacting Principal Investigators (PIs) individually. Such data requisition can be a long and frustrating process when it involves contacting different PIs, for example with the project done many years ago or lack of responses to data inquiries, etc.

### **Pros and Cons of Options the Council Could Consider**

It would be beneficial to 1) identify reasons and types of projects of restricted sharing and not sharing; 2) discuss rationale and potential adaptations for such projects; 3) discuss the potential to have a mandatory data sharing and management policy for all projects; 4) include data sharing policy in the peer-review and evaluation process.

Data sharing is clearly important for ensuring replicability of results, transparency and trust. It is value-added to the economic investment made also, as the data may be useful in research being conducted by other researchers for both Council and non-Council purposes. According to

Whitehouse “*Publicly accessible weather and climate data from the National Oceanic and Atmospheric Administration (NOAA) underlie forecasts that are valued at more than \$32 billion per year.*”.

The SSC recognizes that not all projects will be able to provide full data access due to potential confidentiality concerns or other issues. For example, information on commercial fishery effort or social-economic data that reveal proprietary business information may be bounded by some other “sharing” limits by “confidentiality” policies governed by statute or regulation. The progress of data sharing has been impeded because of multiple reasons such as: 1) Confidentiality or privacy about business operations, 2) Likelihood of misusing the data (e.g., not considering the survey design), and 3) Professional advancement or publication/dissertation concerns by PIs. It might be worth comparing with the federal requirements for data acquired by agencies such as NOAA to create a data sharing and management policy for RSA project (See Appendix B of Text to be included in NOAA Announcements and Awards).

These issues of data sharing require coordination with the Grants office, Regional attorneys and NOAA staff and most importantly collaborative partnerships with industry participants, the hallmark of the RSA program, to protect their interests while allowing research to proceed that will support more effective stewardship of the living marine resources under the Mid-Atlantic Council's stewardship.

Nevertheless, these caveats should be presented as part of the evaluation of the benefits of research under topic I, and should be assessed through the peer review process. Further, quota sale prices are key to understanding the benefits and costs of any research undertaken, and have proven important in the management of the Northeast Large Mesh Multispecies Fishery Management Plan (see, e.g. FW58 Section 7.4.1.2 of NEFMC 2019). At the same time, the deficiencies in economic data and capacities are widespread and have been identified by SSC many times, the latest in its report to the council meeting in 2019. Therefore, it is important to look into strategies to deal with more effective data sharing of RSA-funded projects for the value of these investments.

At a minimum, a clear council coordination process, ideally linked to a publicly available data server or public data repository requirement would be much more efficient for public access and create added value to the research undertaken. Some of these options may involve the cost of staff time, but should benefit for the long run and the best use of the RSA funding expended to collect the data.

## **References:**

- EPA. 2016. Plan to increase access to results of EPA-funded scientific research.
- NEFMC. 2019. Framework Adjustment 58 To the Northeast Multispecies Fishery Management Plan.
- NOAA. 2013. NOAA Plan for Increasing Public Access to Research Results.
- NOAA. 2016. Data and Publication Sharing Directive for NOAA Grants, Cooperative Agreements, and Contracts.
- Office of Management and Budget (OMB). 2013. Open Data Policy-Managing Information as an Asset.
- Office of Science and Technology Policy (OSTP). 2013. Increasing Access to the Results of Federally Funded Scientific Research.

***Appendix B: Text to be included in Announcements and Awards (cited from NOAA 2016)***

The following text is for inclusion in FFO Announcements and Contract Solicitations (Appendix B.1, B.2) and Notices of Award and Contracts (Appendix B.3).

**B.1. Text to be included in FFO Announcements and Contract Solicitations for projects that may generate environmental data (including Broad Agency Announcements)**

1. Environmental data and information collected or created under NOAA grants or cooperative agreements must be made discoverable by and accessible to the general public, in a timely fashion (typically within two years), free of charge or at no more than the cost of reproduction, unless an exemption is granted by the NOAA Program. Data should be available in at least one machine-readable format, preferably a widely-used or open-standard format, and should also be accompanied by machine-readable documentation (metadata), preferably based on widely-used or international standards.
2. Proposals submitted in response to this Announcement must include a Data Management Plan of up to two pages describing how these requirements will be satisfied. The Data Management Plan should be aligned with the Data Management Guidance provided by NOAA in the Announcement. The contents of the Data Management Plan (or absence thereof), and past performance regarding such plans, will be considered as part of proposal review. A typical plan should include descriptions of the types of environmental data and information expected to be created during the course of the project; the tentative date by which data will be shared; the standards to be used for data/metadata format and content; methods for providing data access; approximate total volume of data to be collected; and prior experience in making such data accessible. The costs of data preparation, accessibility, or archiving may be included in the proposal budget unless otherwise stated in the Guidance. Accepted submission of data to the NOAA National Centers for Environmental Information (NCEI) is one way to satisfy data sharing requirements; however, NCEI is not obligated to accept all submissions and may charge a fee, particularly for large or unusual datasets.
3. NOAA may, at its own discretion, make publicly visible the Data Management Plan from funded proposals, or use information from the Data Management Plan to produce a formal metadata record and include that metadata in a Catalog to indicate the pending availability of new data.
4. Proposal submitters are hereby advised that the final pre-publication manuscripts of scholarly articles produced entirely or primarily with NOAA funding will be required to be submitted to NOAA Institutional Repository after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available by NOAA one year after publication by the journal.

## **DECOUPLING ALLOWANCES AND FORAGE AND ECOSYSTEM SPECIES**

### 1) The Issue

In designing a future RSA program there is a fundamental design decision of whether to require the recipients of RSA quota to also conduct the scientific research, or to "decouple" that decision and allow some fishermen to catch the RSA quota, and allow different fishermen to help conduct the scientific research.

What are the implications of having RSA quota directly tied to the research conducted? This could help in enforcement of the quota, as the fishermen/scientists have an incentive to make sure catch accounting is accurate for their own research. This is how the current scallop RSA program in New England works. However, this would also have an impact on the auction process by changing the types and number of vessels that are likely to bid for the quota, and thereby restricting the types of research that is likely to be conducted.

Moreover, the species under management by the MAFMC are not all high value commercial or recreational species. Thus, there is a need to carefully consider the implications of using landings value for RSA Research prioritization choices. High-valued fisheries may get their projects elevated in priority above lower valued fisheries and forage species fisheries, important for their ecosystem services, would rarely get priority for their research needs because they cannot raise a critical mass of funding. This could also potentially lead to biases in stewardship that create social inequity and environmental injustice for some fishing constituencies and fishing communities. Sustainable fisheries management requires an understanding of the role of forage species in the ecosystem and some of these lower valued species can have large impacts on the sustainability of local fishing communities, regardless of their direct revenue contribution to the total industry.

### 2) Past RSA Experience with the Issue

The former RSA program decoupled the harvest of the RSA quota from the research and relied on the auctions implemented by the National Fisheries Institute (NFI) to generate revenue. Most of the revenue came from a handful of high value species (e.g., summer flounder, black sea bass, scup). Only up to 25% of the revenue from a given species quota could be used to fund research for a different species.

### 3) Pros and Cons of Options the Council Could Consider

Decoupling the research data collection from the harvest of the RSA quota has important benefits:

- (1) It allows for allocation of the RSA quota through a market mechanism (e.g., an auction), which in turn allows for price discovery (how much is the quota worth?) and maximization of revenues (i.e., competition pushes the prices up).<sup>1</sup> In contrast, requiring that the same boats are engaged in the data collection as in the scallop program (i.e., where research and harvesting of the RSA quota are tied) would not maximize program revenues. The principal investigators (PIs) search for interested parties and the ensuing bargaining process are likely to be inefficient.

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<sup>1</sup> See, for example, "Auction Theory" by V. Krishna or "Auctions: Theory and Practice" by P. Klemperer.

- (ii) Allocation through a market mechanism, assuming the information is available to the Council, would provide data on willingness to pay for quota from the recreational and commercial sectors. In turn, this information could later be used for decisions on intersectoral quota reallocation.
- (iii) The auction data would also provide information on the economic value harvesters attached to the regulatory waivers associated to the RSA quota. This information would give the MAFMC a sense of the cost for the industry of the restrictions imposed to regular vessels.
- (iv) Leasing of the RSA quota allocated through the auction facilitates full use of the RSA quota. Indeed, harvesters that realize later in the season that they will not be able to harvest all their RSA quota can easily transfer it to other vessels.
- (v) Auctioning off quota for forage species (i.e., low value commercial species) is unlikely to generate enough revenue to fund the research associated with those species. While this issue was not addressed in the former RSA program, there are alternative auction designs that could help generate funds for forage species. This could be done, for example, by bundling the quota of forage species with the quota for high value species. The bundle would then be auctioned off as a single unit.
- (vi) Additionally, a properly designed market would allocate the quota efficiently, which means that the RSA quota would end up in the hands of the harvesters that can make the most profit from it. This would not be achieved by an RSA program modeled after the New England scallop RSA.

Decoupling the research data collection from the use of the RSA quota could also have (serious) drawbacks:

- (i) All the benefits associated with a competitive market (i.e., auction) rely critically on a transparent process for allocating that quota. Without participants' trust in the process (e.g., due to collusion, unclear rules for awarding winners, etc.) the auctions will not be competitive and will lose their appeal in terms of revenue generation. Likewise, all the information associated with the bidding for the quota that could be used for management is only valuable if it is accurate and readily available to the MAFMC. The market for RSA quota should be run by a third party following clear guidelines specified by the MAFMC.
- (ii) Decoupling the data collection from the harvesting of the RSA quota makes enforcement of quota reporting requirements significantly harder. This is so because (a) the number of vessels landing RSA quota is likely to increase (with the concomitant increase in the number of landing ports), and (b) leasing makes keeping track of that quota throughout the season challenging.
- (iii) Decoupling the data collection from the harvesting of the RSA quota may prevent researchers from developing long-term relationships with industry counterparts. This is the case because the quota is unlikely to be allocated to same vessels every year. In turn, this may undermine the goal of fostering collaboration between the scientific community and the fishing community.

Research Set Aside Workshop - July 15, 2021  
SSC Economic WorkGroup One-Pager Briefing on:

**Topic 7. Social equity implications of RSA awards**

The purpose of this one-pager is to identify the challenges faced by the previous RSA program in the selection of fisheries and prioritization of research projects with regard to social and economic equity implications of RSA awards.

1. Define the topic:

The Department of Commerce Policy on Environmental Justice states that the National Oceanic and Atmospheric Administration (NOAA) manages the Nation's fisheries and coastal habitats and species ensuring future equal access to these environmental resources for all Americans. Thus, policy decisions associated with future implementation of a RSA program must be mindful of the social and economic consequences of any allocation impacts of RSA quota distributions

2) Briefly summarizes what the past RSA experience with the topic has been.

Previously most of the RSA revenue came from high value species that under past policy could be redistributed up to 25 percent to fund research on different species. In effect, fishermen for high valued species such as summer flounder, black sea bass, and scup were "subsidizing" the research on lower valued species, which on their own could not generate comparable levels of funding to support vigorous research programs.

In addition, access to the benefits of RSA quota in the prior program was not necessarily based on "equal access" via the auction process as those entities with an ability to bid a higher price had preferential access to quota shares. This provided a competitive advantage to holders of RSA quota when quota closures for the non-RSA quota were imposed.

3) Seek to identify the pros, cons, ideas of different options the Council could consider for that issue, with particular emphasis on any economic implications of the different choices.

There is a proposal on the record of the Research Steering Committee to have funds from a species auction only used for research on that species. This resolves the issue of one fishery subsidizing another. However, fisheries with low ex vessel values that have critical research needs may never be able to generate sufficient funds to support an RSA on their own. Without further changes, RSA could only be supported in "wealthy" fisheries and "poorer" fisheries would have to find other

sources of research funds. This could have a differential negative impact on fishing communities reliant on low margin bait and forage fisheries where research is already scant on these species, scientific uncertainty high, and management approach usually ultra conservative as a result. These smaller scale fisheries and their communities receive less political attention than the more major fishing ports.

In such a case the Council may need to consider a broader discussion of Council standards/priorities of when to use RSA funds in the larger context of other sources of research funds, i.e., Council programmatic/appropriated funds, State funds, other NOAA/ federal grant funds, etc. to ensure that its complete range of FMP research needs get covered. This could include rotating RSAs across different high-valued fisheries and years, or focus on multispecies/ecosystem research rather than single species research to pool resources and take advantage of economies of scale that benefits the entire Mid-Atlantic.

## Appendix 1.2

### RSA WORKSHOP #2: FUNDING

#### 1. INTRODUCTION

The primary objective of the Research Set Aside (RSA) program is to generate resources to fund research projects that align with the priorities of the Mid-Atlantic Fishery Management Council so that the findings can be incorporated into the Council's management programs. Under this program the grant recipients are awarded set aside quota rather than money. That RSA quota must then be monetized to pay for the research. The RSA quota value is mainly driven by the financial incentives of industry participants to pay for additional fishing opportunities. Aside from this main objective, there are important secondary and competing objectives that must be met to ensure the success and continuity of the program:

- i. Maximize revenues from RSA quota
- ii. Ensure fairness in access to RSA quota
- iii. Foster collaboration between scientific and fishing communities
- iv. Ensure compliance with the reporting and use of the RSA quota

#### Maximize revenues from RSA quota

The Council's goal under the Magnuson Act's National Standard 1 is to provide the greatest overall benefits to the Nation from the living marine resources under its legal stewardship. In some cases, its management goals and objectives are compromised by uncertainty in the science and subsequent application of policy. RSA research is one way to fill knowledge gaps with the intent to improve management outcomes.

The starting reference point for a well-designed RSA program is to maximize revenues received in the conversion of quota pounds into dollars, thereby conducting the greatest amount of research possible. Attributes of a well-designed program will utilize mechanisms that encourage fishermen to pay the fair-market values for the quota poundage (e.g., no insider or special deals). This is oftentimes achievable through open competitive markets.

Having appropriate data to manage a fishery is one of the underlying findings of Section 2 the Magnuson Act:

"(8) The collection of reliable data is essential to the effective conservation, management, and scientific understanding of the fishery resources of the United States."

Thus, it is imperative that the Council adopts a data collection program that will allow the computation of revenues and willingness to pay for RSA quota. This is the basis for the Council's



investment in RSA research, and from which it will measure the return on that investment over time, gauging whether the value of the quota set aside for research produced meaningful results for management of the stocks and the fishermen who seek them. Also, any deviation from the maximum revenue objective to pursue other goals can then be objectively evaluated by conducting a trade-off analysis of what is proposed to be gained for what is proposed to be given up.

#### Ensure fairness in access to RSA quota

In re-establishing an RSA program, the Council may find its design unintentionally impacts access to the program by different segments or sectors of a fishery. Not all sectors may be economically able to compete on equal terms to obtain RSA quota. Moreover, the Council could also choose to use access to the RSA program as a deliberate policy choice. For example, it could design its RSA program to give preference to a particular gear, sector, or geographic area, such as allowing discounted/subsidized RSA quota shares to black sea bass pot fishermen economically affected by wholesale gear replacement regulations because of entanglement rules.

Magnuson Act National Standards 4 and 5 are relevant here, as the allocation or assignment of shares shall be fair and equitable and shall consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose. NOAA legal counsel will need to provide advice on what is the legal versus policy constraint of "equitable" versus "equal" treatment of different sectors in access to RSA quota.

What is known is that any trade-off in the maximum competitive RSA value, intentional or not, will result in a diminution in the total revenue. It is important for the Council to collect data to evaluate whether what they achieve in return for that diminution is worth it.

#### Foster collaboration between scientific and fishing communities

The objectives of the Council's original RSA program were not aligned with economic performance, efficiency, or revenue outcomes. Rather, the RSA program was originally established to regain public trust. The Environmental Assessment for the original RSA program states:

*"Commercial fishermen seek to maximize the revenue from their harvests and will operate their vessels and deploy their gear in such a way as to best accomplish this end. Scientists, conversely, are bound by the "scientific method," and seek to gain information and verify its accuracy through rigorous experimental procedures. Management programs based on this information may then be questioned by the public and lack credibility in their eyes. The Mid-Atlantic Council has developed the research set-aside program to address these concerns. Without the active cooperation of the fishing public, most management programs are destined to fail, as it is chiefly*

*through the actions of commercial and recreational user groups that humans interact with and affect fisheries resources."*

The Council was not trying to maximize the amount of research for a given dollar; its objective was to engage fishermen directly in the conduct of research because many had no faith in the science being conducted by NOAA or the states, and this lack of confidence was creating management and enforcement issues. In reviewing the past RSA program, the key element of collaboration was communication; it appeared to be the cause of most success stories (a lot of) and almost all failures (a lack thereof).

Thus, identifying fisheries and/or research priorities based on greatest economic value may run counter to other social, cultural and/or geo-political criteria. From a public policy viewpoint, these other criteria offer valid perspectives. There are also varying degrees of research collaboration possible, starting with NOAA's "white boats" to decoupled commercial RSA vessels, etc. What is critical is being able to evaluate/quantify the benefits and costs of adopting any of these alternative objectives and decisions. Not only does it appear to be a good Council practice for reaching a consensus on RSA direction, but it will also be required by applicable law and regulation for the Magnuson Act and federal rulemaking procedures.

#### Ensure compliance with the reporting and use of the RSA quota

In addition to maximizing revenues, a well-designed RSA program would also minimize inefficiencies and transaction costs in the sale of quota that would eat into the revenue. This could include minimizing the costs of tracking quota possession/use over time and the overall execution/administration of the RSA program itself to help the Council maximize the net revenue and benefits from its RSA research investment.

There have been significant advances in electronic reporting systems since the original RSA program ended, and the adoption and use of technologies that eliminate duplicative and ineffective reporting systems can hopefully be avoided in any re-designed system. Some of the software used in cooperative research and various catch share systems may be models for consideration to avoid reinvention and duplication of effort that would only decrease net benefits of a new RSA program.

Historically catch reporting and enforcement in NOAA have been handled separately, and while progress continues, there may be opportunities in future for breakthroughs with VMS/satellite GPS/RADAR and next generation communication technology solutions that could benefit RSA perhaps through public private partnerships. In the interim, close collaboration with enforcement at the state and federal level and General Counsel on design and execution can improve compliance rates relative to the original RSA.

## 2. PROGRAM DESIGN

The two main alternative approaches for implementing the RSA program given the identified objectives above are: (i) bilateral arrangements between research principal investigators (PIs) and industry members (e.g., scallop program); and (ii) competitive markets in the form of different auction formats. Auctions are mechanisms for selling (or buying) items by offering them up for bid and selling the items to the highest bidders. In this case, the item for sale is RSA quota. Auctions foster competition among bidders to increase seller's revenues and allow for price discovery when the value of the items is unknown. There are many alternative types of auction markets, with different settings calling for different designs. Bilateral arrangements, on the other hand, are agreements between PIs and vessel owners whereby grant recipients and industry partners share the proceeds generated from harvesting the RSA quota.

The two approaches mentioned above are not equally equipped to address the secondary objectives (i) -(iv) listed above. Auctions, if properly designed and implemented, will maximize RSA quota revenue through thick markets and competition.

However, if fairness is understood as equal access to the quota, competitive markets will not achieve that objective. On the other hand, if fairness is conceptualized as access to the quota according to willingness-to-pay, then auctions will meet the objective. (ii) In the case of the bilateral arrangements, it is entirely up to the recipients of RSA grant awards to decide who they partner with to use compensation fishing opportunities. To the extent that revenue is not their unique consideration when selecting industry partners, bilateral agreements may offer access to quota to harvesters that would not be awarded RSA quota at the auctions. Alternatively, if PI or fishermen's transaction costs are high, a much smaller group of fishermen might ultimately have an opportunity to access the quota when compared to auctions. Regarding objective (iii), markets for quota are not guaranteed to ensure collaboration between the scientific and fishing communities since auctions decouple the research from the harvest of the RSA quota. In contrast, in programs such as the scallop RSA, researchers often work with a relatively small group of vessels with whom they are familiar due to geographic proximity or some other reason. This type of interaction is more conducive to continued collaboration between industry and PIs. Finally, (iv) allocating the quota to many vessels and then allowing leasing, as the auctions do, makes enforcement more challenging and presumably more expensive. For example, it increases the number of landing ports for the RSA quota. Oversight entails substantial investment from NMFS across several line offices, including the Sustainable Fisheries Division, Analysis and Program Support Division, and Office of Law Enforcement. Table 1 below summarizes these points.

**Table 1: Comparison in Ability to Achieve Secondary Objectives**

(COMPETING) OBJECTIVES	BILATERAL AGREEMENTS	MARKETS (AUCTIONS)
REVENUE MAXIMIZATION		✓
FAIRNESS OF ACCESS (IF UNDERSTOOD AS EQUAL ACCESS TO QUOTA)	✓	
LONG-TERM COOPERATION BETWEEN RESEARCHERS & INDUSTRY	✓	
ENFORCEMENT & COMPLIANCE	✓	

### 3. SCENARIO ANALYSIS

The SSC Economic Workgroup (WG) has conducted a scenario analysis to compare revenue generation between competitive markets (auctions) and bilateral agreements, the two main approaches for implementing the RSA Program.

There was no granular data (i.e., data on individual bids) made available on the auctions from the former RSA Program. Without information on the individual bids, it was not possible to estimate the distribution of harvester’s willingness to pay for RSA quota. Unfortunately, the distribution of willingness-to-pay for quota is critical for studying the revenue advantage of the auctions, one of the initial planned analyses for the project. Barring these detailed data, the Economic WG relied on the summary data that was provided by the National Fisheries Institute (NFI) who oversaw the Mid-Atlantic auction program. The summary data utilized included the average winning bid per year and species, coupled with average number of participants per year and species. Specifically, the simulations that support the scenario analysis use a calibrated model based on summary statistics on bids and # of bidders for summer flounder quota. The distribution of willingness to pay used in the simulations is assumed and not estimated from data. Importantly, the simulated scenarios are hypothetical and only intended to illustrate relative performance on revenue generation rather than to estimate dollar amounts raised under each approach. The simulations only explore a few plausible scenarios and do not represent an exhaustive list. Each scenario is replicated 1,000 times.

Table 2 below summarizes the findings of the simulations. The right column shows how much higher the revenue from the auctions is compared to the revenue from the bilateral agreements. For example, the baseline case generates (on average) 28% higher revenue than the bilateral arrangements. This baseline scenario assumes supply of 400,000 lbs. of summer flounder RSA

quota in lots of 10,000 lbs. each, sequential English auctions (species-lot level) in which recreational and commercial bidders can participate, 150 bidders, a minimum (reserve) price of \$1.50/lb., \$100 per vessel in entry costs and 4% of proceeds in administrative costs.

The revenue advantage observed in the baseline case, however, decreases in the other scenarios. When separate auctions are conducted for recreational and commercial vessels, as opposed to auctions in which anybody can bid regardless of sector, the auctions generate 15% more revenue than the bilateral agreements. Likewise, high entry costs and administrative fees of the scale observed in the former RSA program would reduce the revenue advantage of the auctions to 17% of the revenue from bilateral arrangements. The possibility of collusion by a small number of bidders has a smaller impact but also reduces the revenue advantage of the auctions (to 20%). Lastly, separate auctions combined with high entry and administration costs, would significantly reduce the advantage of competitive markets over bilateral agreements in generating revenue (5%). Note that these results do not account for the additional enforcement costs that may be needed to monitor the RSA quota under the auctions.

The main conclusion from these simulations is that the performance of the preferred mechanism will critically depend on the design and implementation. Moreover, transparency and bidders' trust in the rules of the auctions will be critical in determining the success of these markets in raising revenue.

**Table 2: Summary of Revenue Comparison between Auctions and Bilateral Agreements**

SCENARIO	COMPARISON (EXCESS REVENUE IN THE AUCTION)
BASELINE CASE	28%
SEPARATE COM. & REC. RSA AUCTIONS	15%
AUCTION WITH HIGH ADMIN. AND ENTRY COSTS	17%
AUCTION WITH COLLUSION	20%
SEPARATE COM. & REC. AUCTIONS WITH HIGH ADMIN. AND ENTRY COSTS	5%

#### 4. ANCILLARY BENEFITS

Beyond their ability to foster competition to generate revenue for the program, auction markets for RSA quota may generate ancillary benefits and information valuable for management, as indicated in Table 3.

Information on the bids submitted by recreational and commercial vessels would provide data on willingness-to-pay for RSA quota from each sector. In turn, this granular information, if available to the Council, could inform future intersectoral quota reallocation decisions.

Additionally, bidding behavior regarding RSA quota for different species may also provide information on technical complementarities (i.e., jointness) in the harvest of different species. Since the RSA quota is only valuable to harvesters to the extent it provides them with fishing opportunities they would not otherwise have (e.g., fishing after the season has ended, increasing bag limits for charter boat anglers, etc.), bidding in the auctions provides information on the value that industry attaches to relaxing some of the regulations. A competitive market also ensures the RSA quota is allocated according to willingness-to-pay, increasing allocative efficiency, and makes it easier for vessels that mid-season find themselves unable to fish their quota to transfer that quota to other boats.

**Table 3: Ancillary Benefits of Auctions**

<b>ANCILLARY BENEFITS (AUCTIONS)</b>
INFORMATION ON QUOTA DEMAND FROM REC. AND COMMERCIAL SECTOR
INFORMATION ON SPECIES' HARVEST COMPLEMENTARITIES
WILLINGNESS TO PAY FOR ALTERNATIVE REGULATORY WAIVERS
HIGHER LIKELIHOOD RSA QUOTA GETS USED EACH SEASON
INCREASED EFFICIENCY