

Response to Program Review Recommendations

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Introduction

The external peer review of the NOAA RESTORE Science Program portfolio represents an important step in ascertaining quality, performance, and relevance of the body of work. The review was held virtually from November 16-18, 2021. The agenda, presentations, summary document, and more are available here. The Science Program appreciates the time and effort that review panel members devoted in advance of, during, and after the review, and for conducting such a thorough evaluation of the Program. The recommendations are well-founded and thoughtful and will be a key factor in developing priorities and future activities.

Program Evaluation Criteria

NOAA, through an Administrative Order (NAO 216-115A, dated October 3, 2016, and its previous editions, handbook), has adopted Quality, Relevance and Performance as core evaluation criteria. The NAO also calls for a periodic evaluation of research, development and transition activities as well as outreach efforts and stakeholder engagement.

In the context of this review, these criteria may be described in the following terms:

Quality: This refers to the merit of research and development within the scientific and resource management community. Assessing the quality of scientific and technical work done involves the time honored tradition of peer review. Bibliometric data on peer-reviewed publications and citations, as well as awards and other professional recognitions, are critical to understanding the research quality of individuals and organizations, particularly for benchmarking against other organizations of similar size and scope. Quality is measured by the novelty, soundness, accuracy, and reproducibility of a specific body of research, as represented by the outputs (i.e., findings and products) delivered by the project or program. This evaluation criterion establishes the relative merit and repeatability of the research or program relative to that of contemporaries in the community of practice, whether the scientific methodologies were appropriate, adhered to, and thoroughly documented.

Relevance: This refers to the value of research and development to users beyond the scientific community. Relevance includes not only hypothetical value, but actual impact. Assessing a project or program's relevance involves measuring the broader benefits of the work. It answers the question, "What would not have happened if research and development did not exist, and how much would society have missed?" The impact of research and development can be realized through the application of scientific knowledge to policy decisions, through the improvement of operational capabilities, or by patenting and licensing of inventions for commercial use. Relevance is measured by how well a specific body of research supports NOAA's mission and the needs of users and the broader society. At a minimum, this evaluation criterion establishes how the research aligns with a program's priorities, as demonstrated by links to validated requirements, key legislative mandates, and societal benefits. Relevance is more reliably established by evidence of actual impact and retrospective (or concurrent) analysis of how research and development causes measurable improvements in operational performance and social and economic value.

Performance: Assessing performance involves evaluating the effectiveness and efficiency with which tasks are executed, as well as the adequacy of the leadership, workforce, and infrastructure needed to achieve the designated goals. This evaluation criterion considers how research activities are progressing relative to milestones and benchmarks. Performance evaluation also includes all aspects of how research is conducted, including all components that feed into creating a high quality research enterprise (e.g., leadership, innovation, planning, monitoring, efficiency and effectiveness of processes, resource utilization, reporting).

Review Questions

Quality

Scientifically Sound Findings and Products
1 - How would you characterize the scientific quality of the findings and products generated by projects supported by the Science Program?

Comprehensive Understanding
2 - How and to what extent is research supported by the Science Program increasing our comprehensive understanding of the Gulf of Mexico ecosystem?

Relevance

Legislative Mandate
3 - How and to what extent are the Science Program's activities aligned with its legislative mandate and priorities? What actions would improve this alignment?

Use of Outputs to Inform Decisions
4 - To what extent do those beyond the scientific community, including resource managers, use findings and products generated by Science Program funded projects to inform decision-making? How can the utility of findings and products be improved at the scale of individual projects and within the larger Gulf of Mexico community?

Portfolio Changes
5 - Should the Science Program's funded projects portfolio change in the future? If so, why, how, and with what tradeoffs?

Performance

Design and Execution of FFOs

6 - How well does the Science Program identify and articulate clear priorities for research and its application in its funding competitions? To what extent does the funded research match those priorities?

Project Management

7 - How would you describe the quality and caliber of the Science Program's administration of its funded projects? What value has been added by the Program's active approach to management and tracking the progress of projects?

Coordination and Collaboration

8 - How successfully did coordination and collaboration efforts with other entities generate returns for the Science Program and increase overall return on investment or strengthen the impacts or reach of activities supported by the Science Program?

Prior to the review, the reviewers were able to suggest additional criteria, and at the review, each reviewer was free to ask additional questions as appropriate. Given the scope of planned presentations as well as anticipated use of the panel's recommendations, the "Relevance" criterion was the most important one.

Program Response to Panel Recommendations

On November 16-18, 2021, the NOAA RESTORE Science Program conducted its first 5-year program review. Six independent reviewers assessed the Program on its quality, relevance, and performance. The reviewers provided their individual findings and recommendations in response to eight questions. The Program has reviewed the reports from the reviewers and summarized them into 58 distinct findings and 58 distinct recommendations. The Program has responded to each of the recommendations (concur - 49 ; partially concur - 4; will explore - 2; acknowledge, but disagree - 3).

Topic	Findings	Recommendations
1. Scientifically Sound Findings and Products	5	0
2. Comprehensive Understanding	7	4
3. Legislative Mandate	6	5
4. Use of Outputs to Inform Decisions	4	9
5. Portfolio Changes	11	12
6. Design and Execution of Federal Funding Opportunities (FFOs)	13	11
7. Project Management	4	7
8. Coordination and Collaboration	8	10
Total	58	58

Table 1. Summary of findings and recommendations.

Quality

Scientifically Sound Findings and Products

1. How would you characterize the scientific quality of the findings and products generated by projects supported by the Science Program?

FINDINGS

- 1.1. Projects are scientifically rigorous and findings are of the highest quality. [Reviewer 1 - Finding 1, Reviewer 1 - Finding - 2, Reviewer 3 - Finding 5, Reviewer 5 - Finding 1]
- 1.2. Program relationships with researchers helps ensure high quality and usefulness. [Reviewer 1 - Finding 3]
- 1.3. Review of proposals is thorough, which helps ensure project goals are achievable. [Reviewer 5 - Finding 1]

1.4. The independent perspective of technical monitors helps with quality [Reviewer 5 - Finding 1]
1.5. The growing number of peer-reviewed publications indicates the science is sound. [Reviewer 5 - Finding 1]

NO RECOMMENDATIONS

Comprehensive Understanding

2. How and to what extent is research supported by the Science Program increasing our comprehensive understanding of the Gulf of Mexico ecosystem?

FINDINGS

2.1. The Program is improving our comprehensive understanding of the Gulf of Mexico ecosystem and investment in additional research and synthesis activities will continue to do so. [Reviewer 1 - Finding 4, Reviewer 1 - Finding 6, Reviewer 4 - Finding 9]
2.2. The funded research is expansive and covers a wide range of important and interesting topics and is a mosaic of the Gulf ecosystem. [Reviewer 4 - Finding 4, Reviewer 2 - Finding 12]
2.3. Assessment of the ecosystem damages and planning for restoration following DWH has been hampered by a lack of baseline knowledge. [Reviewer 5 - Finding 2]
2.4. The level of funding for the Program is not sufficient to achieve the overarching vision and goal of the program as articulated in the Science Plan. [Reviewer 5 - Finding 2]
2.5. The comprehensive [understanding] aspect of a sustainable Gulf ecosystem is very critical to the success of the program. [Reviewer 2 - Finding 6]
2.6. It is likely that the program has *not* achieved as much progress toward its short term goals [baseline knowledge and integrative work] as would otherwise have been possible through issuing requests for very specific activities and conducting those through contractual agreements. [Reviewer 3 - Finding 7]
2.7. The Program's synthesis initiative is a way to integrate findings from multiple projects in the Gulf. [Reviewer 1 - Finding 10]

RECOMMENDATION 1 - Long-term Ecological Research - The Program should consider large, synoptic studies if it truly aims to understand the Gulf as a single Large Marine Ecosystem. By 2040, our understanding of the Gulf should be directly related to a very large and ambitious Program funded study. In addition, this Program could function as a 'meta-LTER' leveraging the work of others. [Reviewer 2 - Recommendation 3]

RESPONSE: The Program CONCURS that a large, synoptic study of the Gulf of Mexico would be valuable. If the Program were to be the sole supporter of such a study, it would substantially limit the other types of work the Program could support and the number of separate project teams it could support. Such an endeavor by the Program will require partners. Over the next year, the Program will engage with the National Science Foundation, the National Academies' Gulf Research Program and other funders to explore whether the resources and commitment exists to establish and sustain such a study.

RECOMMENDATION 2 - Vision and Goal - The Program should consider refining its vision and goal to allow for a greater depth of understanding of a smaller suite of issues in ways that truly move the needle on management and restoration for those issues.

- The mission and goal of GOMRI may be instructive; they provided both a large arena of science to explore and specific focus to guide investments. [Reviewer 5 - Recommendation 1]

***RESPONSE*:** The Program CONCURS and will incorporate a new vision and goal in developing its new guiding document.

RECOMMENDATION 3 - Use of Synthesis - The Program should use current and future synthesis efforts to integrate understanding related to program-funded activities and identify opportunities for future investment, which could provide some continuity of investments throughout the life of the program and enhance the depth of understanding of select critical issues. [Reviewer 5 - Recommendation 3]

***RESPONSE*:** The Program CONCURS with this recommendation and will use the outcomes of the synthesis initiative to identify opportunities for new investment. The Program has historically considered the outcomes from past competitions when designing the next opportunity and will continue this practice with the synthesis initiative.

RECOMMENDATION 4 - Use of Contracts to Fill Gaps - The Program should consider soliciting contracts to fill key gaps in the short term goals to ensure that the Gulf of Mexico community has the baseline knowledge necessary to support long-term, integrative work that meets the identified outcomes for the Program. [Reviewer 3 - Recommendation 4]

***RESPONSE*:** The Program ACKNOWLEDGES, BUT DISAGREES with this recommendation. We considered using federal contracts in the past, but have found them to be a poor fit for supporting research projects given the emphasis on known deliverables and limited flexibility to explore new findings. If the Program decides to make additional investment in monitoring where clear deliverables can be identified, then the Program may use a federal contract to obtain this service.

Relevance

Legislative Mandate

3. How and to what extent are the Science Program's activities aligned with its legislative mandate and priorities? What actions would improve this alignment?

FINDINGS

3.1. The Program has provided funding for research that is largely aligned but not totally aligned with its legislative mandate. [Reviewer 1 - Finding 8, Reviewer 5 - Finding 3]

3.2. Funding for non-fisheries projects is not central to the Program's mission or legislative mandate; however, these projects will contribute to a more comprehensive understanding of the Gulf. [Reviewer 1 - Finding 8]

3.3. The Program lacks a long-term strategic focus and gives the impression of potentially straying from its mission. [Reviewer 6 - Finding 5]

3.4. The Program's process for establishing funding priorities is unclear. [Reviewer 4 - Finding 14, Reviewer 6 - Finding 4]
3.5. The Program has a clear and shared understanding of its mission. [Reviewer 3 - Finding 2]
3.6. The Program's requirement to include a resource manager in project teams to move toward the co-production of knowledge is an important step in meeting the requirement of addressing "current or anticipated marine ecosystem, fishery, or wildlife management information needs." [Reviewer 3 - Finding 8]

RECOMMENDATION 5 - Legislative Mandate to Conduct Fisheries Research - The Program should narrow the scope of the work it funds to better align with its statutory mandate, in particular as it relates to coastal fisheries. [Reviewer 1 - Recommendation 2]

***RESPONSE*:** The Program PARTIALLY CONCURS with this recommendation. The Program agrees that there may be value in narrowing the scope of its work and will consider options for doing so. One option could be to conduct funding competitions that focus on a broad topic (*e.g.* living coastal and marine resources), but that also invites projects in a specific area within that topic (*e.g.*, fisheries). Such an approach would attract applications from a number of project teams while at the same time opening the possibility of a concentrated investment and subsequent impact in the specific area. However, the motivation for doing so should be to produce more impact in a specific area rather than alignment with the statutory mandate.

With regards to the mandate, the Program agrees that fish and fisheries research are a key component of its mission and its activities but within the context of the ecosystem. In establishing the Program, the RESTORE Act authorized NOAA "to carry out research, observation, and monitoring to support, to the maximum extent practicable, the long-term sustainability of the ecosystem, fish stocks, fish habitat, and the recreational, commercial, and charter fishing industry in the Gulf of Mexico." To date $24.8M of the $41.1M (60%) expended on projects and 21 of 47 project awards (45%) have been for fish or fisheries research. The Program will continue to assess whether its funded projects are meaningfully contributing to our understanding and the sustainability of fish and fisheries in the Gulf of Mexico. Because of the explicit emphasis on the 'long-term sustainability of the ecosystem' in the authorizing legislation, the Program has sought to make investments that increase our comprehensive understanding of all of the components of the ecosystem, including fish and fisheries. In consultation with the Gulf community and its Executive Oversight Board, the Program has determined that supporting research that lays the foundation for ecosystem-based fisheries management, as well as informing current single-species and area management, offers the greatest chance at accomplishing the Program's mission.

RECOMMENDATION 6 - Legislative Mandate Reflected in Funding Competitions - Funding opportunities should clearly state the importance of the legislative mandate (focus on fish and fisheries) in the evaluation process, program staff should evaluate proposals at all stages for alignment with this directive, and a positive determination that the concept is in line with the legislative mandate should be a prerequisite for funding. [Reviewer 5 - Recommendation 5, Reviewer 4 - Recommendation 9]

- *RESPONSE*: The Program CONCURS with this recommendation. The Program agrees that fidelity to the legislative mandate is a requirement for all of its funding competitions and subsequent awards. Each funding competition issued by the Program references its legislative authority and explicitly states the Program's mission, which is taken directly from the legislative

authority. In turn, the priorities for individual competitions are derived from the Program's mission. The authority for the Program is broad and, rather than link evaluation criteria directly to the legislative mandate, the Program links evaluation criteria to the priorities for a given competition to allow for a more fine-scale evaluation of the proposed projects. The Program will reassess the criteria it uses in competitions and the instructions provided to reviewers to determine if the linkages back to the legislative mandate are strong enough or should be more explicit.

RECOMMENDATION 7 - Strategic Plan - The Program should significantly update the Science Plan to account for lessons learned from prior funding rounds, the state of available science, and to enhance focus on a small number of fish and fisheries-related topics. [Reviewer 1 - Recommendation 3, Reviewer 5 - Recommendation 4]

RECOMMENDATION 8 - Strategic Plan - The Program should develop a strategic plan and a "living" communications plan that caters to a broad suite of stakeholders in the Gulf of Mexico. [Reviewer 6 - Recommendation 4]

RECOMMENDATION 9 - Strategic Plan - The Program should explicitly and specifically communicate science, observation, and monitoring priorities, including how those priorities are established. [Reviewer 6 - Recommendation 5]

***RESPONSE*:** The Program CONCURS with the recommendations to develop a strategic plan/update the current science plan and develop a communications plan. By October 2023, the Program will develop a new guiding document that will function like a strategic plan and replace the current science plan, which was released in May 2015. This guiding document will explicitly state the Program's priorities and describe how these priorities were selected. The guiding document will take into account lessons learned from the Program's prior funding competitions, workshops, and other activities. While the state of science in the Gulf of Mexico will be recognized, a comprehensive review of the various fields of natural and social science that informs our understanding of the Gulf of Mexico is beyond the scope of the Program to conduct. Instead, the Program will rely on and reference the work of others. With regards to focusing the new guiding document on a small number of fish and fisheries-related topics, as described in the response to a related recommendation, the Program will continue to focus on fish and fisheries research, but within the context of an ecosystem-based approach to fisheries management. The Program began developing a communications plan in January of 2022 and will have it completed by October 2023 as well. The Program's communications and strategic plans will be linked, with shared goals and priorities.

Use of Outputs to Inform Decisions

4. To what extent do those beyond the scientific community, including resource managers, use findings and products generated by Science Program funded projects to inform decision-making? How can the utility of findings and products be improved at the scale of individual projects and within the larger Gulf of Mexico community?

FINDINGS

4.1. The Program ensures that research findings are applied to management decisions. [Reviewer 1 - Finding 5, Reviewer 1 - Finding 9]
4.2. The Program conducts meaningful outreach to ensure their activities align with management needs in the Gulf of Mexico. [Reviewer 1 - Finding 5, Reviewer 1 - Finding 7, Reviewer 1- Finding 9]
4.3. Integrating end users and Technical Monitors into project teams has greatly improved the use of funded research. [Reviewer 5 - Finding 4]
4.4. The Program does not have an obvious strategy to track the flow of research to end users. [Reviewer 4 - Finding 13]

RECOMMENDATION 10 - Require Proposals to Detail Approach to Co-production - It would be beneficial for the program to require the project team to specifically and clearly describe the processes they will undertake to iterate with their management partners to ensure their projects are as responsive in real-time as possible. This should be an evaluation criterion when projects are selected for support. [Reviewer 3 - Recommendation 5]

***RESPONSE*:** The Program CONCURS with this recommendation to require project teams to describe the process they will use to iterate with resource managers to ensure their findings and products are responsive. The Program is requiring this description in its next funding competition, which will support actionable science and be released in summer 2022.

RECOMMENDATION 11 - Incorporate Managers into Synthesis Initiative - The Program should incorporate questions from managers to inform its synthesis initiative and should work to remove any barriers that may prevent managers from participating in this activity. [Reviewer 1 - Recommendation 4]

***RESPONSE*:** The Program CONCURS with this recommendation. We consulted with resource managers in designing the synthesis initiative and will be actively soliciting their participation on the working groups proposing to conduct synthesis projects. If we find participation by managers is low in the first competition to select project teams, we will assess why and seek to remove barriers that are identified.

RECOMMENDATION 12 - Understanding Management Entities - The Program should learn how management entities operate, including barriers to participation, from those agencies and other funding organizations to better support project teams. [Reviewer 3 - Recommendation 7, Reviewer 3 - Recommendation 8]

***RESPONSE*:** The Program CONCURS with this recommendation and will continue to reach out to resource management entities to understand how they operate in order to more effectively design competitions and support project teams. Accordingly, the Program has partnered with a social scientist who specializes in exploring how science is integrated into decision making to conduct case studies of several of our funded projects to learn more about how the findings or products from a given project have been used to inform decisions.

RECOMMENDATION 13 - Building a Network of Co-production Experts - The Program should connect with individuals who understand the nuances of co-production when shaping the structure of

funding competitions, approaches to project management, and other activities. [Reviewer 3 - Recommendation 9]

***RESPONSE*:** The Program CONCURS with this recommendation and will continue to grow its network of individuals who understand the nuances of co-production. In the past, the Program has relied on these individuals to review funding competitions, serve on proposal review panels, and participate in conference sessions and panel discussions. In the future, the Program will also look for ways to engage these individuals in project management.

RECOMMENDATION 14 - Incorporating Technical Monitors Earlier - Technical monitors could be included earlier in the competition process, such as during proposal development. [Reviewer 5 - Recommendation 6]

***RESPONSE*:** The Program PARTIALLY CONCURS with this recommendation. Given the number of proposals the Program receives, it is not possible for prospective technical monitors to be assigned to each proposal during proposal development. The Program currently seeks to identify a technical monitor for a project once negotiations with the project team are complete and the project has been tentatively selected for funding. The technical monitor then begins actively working with a project once the project award has been officially made. The Program will explore options for identifying and assigning technical monitors earlier.

RECOMMENDATION 15 - Engagement to Improve Transfer - Communications and engagement activities should continue to meet the needs of management communities and be made accessible to end users, including webinar series and newsletter emails that explain project findings. [Reviewer 5 - Recommendation 7, Reviewer 5 - Recommendation 8]

RECOMMENDATION 16 - Engagement to Improve Transfer - The Program should consider hosting information transfer workshops to promote a wider dissemination and use of products and tools as well as to inform future FFOs. [Reviewer 5 - Recommendation 9, Reviewer 3 - Recommendation 10]

***RESPONSE*:** The Program CONCURS with the recommendation that communications and engagement activities need to continue to reach and meet the needs of resource managers and other end users. The Program has committed to such a focus on communications and engagement with the recent contracting of a full-time employee to support these activities. The Program will continue to publicize findings and products from its funded projects through webinars, website announcements, and newsletters and encourage interested resource managers to connect directly with project teams. Funded project teams from the Program's recent competitions have had to identify specific resource management entities or individuals who will use the findings and products generated by their project. The Program is interested in wider dissemination and use of findings and products from its funded projects beyond these identified resource managers when there is a clear resource management need for doing so. In the future, the Program will conduct information transfer workshops when such a need is identified.

RECOMMENDATION 17 - Fisheries - The Program meets the three core evaluation criteria, however relevance specific to the immediate needs of fishery management decisions could be improved. [Reviewer 4 - Recommendation 1]

RECOMMENDATION 18 - Fisheries - The Program should consider requiring in funding competitions that fishery managers be an important and active part of the research team. [Reviewer 4 - Recommendation 3]

***RESPONSE*:** The Program CONCURS that the relevance of our funded projects to the immediate needs of fisheries managers could be improved and that requiring managers to be an important and active part of the project team would help. Over time, the Program has seen increased use by fisheries managers of the findings and products from projects supported by the Program, and the Program will continue to explore ways to strengthen researcher and resource manager partnerships and increase this use. For example, the Program's current *Planning for Actionable Science* and soon-to-be-released *Actionable Science* competitions require each project team to focus on a specific near-term resource management decision and include resource managers as equal partners on the team. The Program intends to require that managers, including fishery and other natural resource managers, be an important and active part of funded project teams in future competitions as well.

Portfolio Changes

5. Should the Science Program's funded projects portfolio change in the future? If so, why, how, and with what tradeoffs?

FINDINGS

5.1. The evolution of funding competitions indicates that the Program is actively working to adjust and adapt to meaningfully contribute to a comprehensive understanding of the Gulf of Mexico. [Reviewer 1 - Finding 11, Reviewer 1 - Finding 12, Reviewer 2 - Finding 3]

5.2. The Program's focus on research application, including co-production, promises to further increase the impact of the Program's funding. [Reviewer 1 - Finding 19]

5.3. The Program places a strong emphasis on scientific research of the ecosystem, fish stocks, and fish habitat, yet minimal research has been funded on the fishing industries themselves. [Reviewer 4 - Finding 6]

5.4. The Program has an opportunity to fund more long-term, riskier studies to promote sustainability in the Gulf. [Reviewer 2 - Finding 2]

5.5. The Program's emphasis on funding research related to ecosystem management is important and will lead to tangible results. [Reviewer 4 - Finding 11]

5.6. Many projects funded by the Program address scientific issues that cannot be incorporated into fisheries management decisions. [Reviewer 4 - Finding 12]

5.7. The Program appears to favor investments in more traditional science projects over rigorous monitoring efforts necessary to understand key ecosystem processes, such as fishery dynamics. [Reviewer 6 - Finding 6]

5.8. One continuing portfolio challenge is finding a balance in the duration and scale of funded projects. This balance includes addressing short term, smaller scale management and monitoring needs as well as longer-term and larger scale research needs. The future funding portfolio presented by the Program aims to include more consistency across funding opportunities. This, along with a path for co-production (actionable science) and more research-specific funding, may help the Program to work towards achieving this balance moving forward. [Reviewer 1 - Finding 1]

5.9. The Program approach to integrating research, application, and monitoring could be strengthened. [Reviewer 2 - Finding 4]

5.10. Developing a Synthesis Center is beyond the scope of the Program. [Reviewer 2 - Finding 7]

5.11. The number of projects funded to inform fisheries management needs is low compared to other types of projects. [Reviewer 4 - Finding 5]

RECOMMENDATION 19 - Repeating Funding Competitions - The program should continue offering consistent types of funding opportunities, which will allow researchers to learn from their previous experiences. [Reviewer 3 - Recommendation 12]

***RESPONSE*:** The Program CONCURS with this recommendation and currently plans to repeat the planning and then executing of actionable science competitions and the pilot synthesis initiative will have three sequential competitions for funding to support working groups which will allow working groups who do not receive funding in one competition to revise their proposal to respond to reviewer advice and resubmit.

RECOMMENDATION 20 - Coordination between Research Activities - The program should consider offering a science transfer opportunity to facilitate coordination between research activities. [Reviewer 3 - Recommendation 14]

***RESPONSE*:** The Program CONCURS that coordination between research activities is important and will explore how to facilitate science transfer. Working through the federal program officer, program liaisons, and technical monitors, the Program has at times facilitated connection between projects. The Program will seek to be more intentional in this work by hosting gatherings of the project teams at conferences as well as organizing conference sessions that promote discussion between projects.

RECOMMENDATION 21 - Fish and Fisheries Research - Future funding opportunities should be more focused on fish and fisheries to stay consistent with the legislative mandate; however, funding priorities should be written to allow for the conduct of research on critical issues (e.g., climate change) in a manner grounded within the legislative mandate. [Reviewer 5 - Recommendation 10]

***RESPONSE*:** This recommendation was addressed in responding to a similar recommendation related to the legislative mandate for the Program.

RECOMMENDATION 22 - Fish and Fisheries Research - The Program should increase efforts to encourage applied science that leads to products that can directly inform fisheries management decisions. [Reviewer 4 - Recommendation 2]

***RESPONSE*:** This recommendation was addressed in responding to a similar recommendation related to the use of outputs to inform decisions.

RECOMMENDATION 23 - Socioeconomic Fisheries Research - The Program should consider requesting socioeconomic research proposals that evaluate methods to promote resilience in the commercial, recreational, and charter-for-hire fishing industry. [Reviewer 4 - Recommendation 4]

***RESPONSE*:** The Program CONCURS with this recommendation and will explore ways to solicit and support this type of work, which could be in the form of a funding competition or contract and will need

to be done in coordination, if not collaboration, with the Gulf States Marine Fisheries Commission, Gulf of Mexico Fishery Management Council, and NOAA Southeast Fisheries Science Center.

RECOMMENDATION 24 - Continue Conducting Planning and Execution of Actionable Science Competitions - The Program should continue offering planning competitions that lead into implementing planned activities. Strategic and timely incorporation of synthesis activities could be used to inform each successive cycle. [Reviewer 5 - Recommendation 11]

RECOMMENDATION 25 - Continue Conducting Planning and Execution of Actionable Science Competitions - The Program should consider offering regular smaller planning opportunities to allow teams to properly scope the longer term co-production project proposals the program is seeking. [Reviewer 3 - Recommendation 13]

***RESPONSE*:** The Program CONCURS with these recommendations and plans to continue to offer planning competitions that lead into another competition for funding to execute those plans. The Program will also use the results from the synthesis initiative to inform each competition cycle.

RECOMMENDATION 26 - Addressing Region-wide and Open Ocean Restoration Uncertainties - The Program should work with the DWH NRDA Region-wide and Open Ocean Trustee Implementation Groups to learn more about and invest in research on uncertainties that underpin their long-term restoration activities. [Reviewer 5 - Recommendation 12]

***RESPONSE*:** The Program CONCURS with this recommendation and will expand its engagement with the DWH NRDA Region-wide and Open Ocean Trustee Implementation Groups (TIG). One of the Program's long-term projects funded in 2019 is conducting research on marine mammal distribution and abundance in the open ocean that directly complements a monitoring activity supported by the Open Ocean TIG. Another one of the 2019 long-term projects addresses uncertainties around trends in open ocean fauna. The Program will continue to seek opportunities to align its competitions with the needs of both the Region-wide and Open Ocean TIGs.

RECOMMENDATION 27 - Synergy Center - While developing a "synthesis center" is beyond the scope of the Program, the Program should consider developing a "synergy center" to facilitate new opportunities for research, integrating smaller components from other programs into long-term strategies to produce a whole that is greater than the sum of its parts. [Reviewer 2 - Recommendation 4]

***RESPONSE*:** The Program PARTIALLY CONCURS with this recommendation. The Program does not agree that developing a 'synthesis center' is beyond the scope (i.e. legislative mandate) of the Program. However, given the investment required to establish such a center, the Program has chosen to conduct a pilot synthesis initiative in partnership with an existing synthesis center rather than establish a new center. With regards to a 'synergy center', the Program agrees that the concept of multiple funders working together to conduct complementary funding competitions to collectively accomplish shared long-term outcomes is worthwhile. The Program will continue to work with other funders to move in this direction, but so far has not been able to find a way to overcome barriers (e.g. different geographic scopes, different authorities and mandates, prohibition on federal influence) to this high degree of collaboration.

RECOMMENDATION 28 - Long-term Environmental Monitoring Program - The Program should consider funding a long-term environmental monitoring program in the Gulf of Mexico. [Reviewer 6 - Recommendation 2]

***RESPONSE*:** The Program CONCURS with this recommendation provided that the long-term environmental monitoring is connected to an identified resource management need. Through awards made from the Program's 2019 competition, the Program is currently supporting three projects for at least five years and, pending renewal, up to ten years, to separately monitor the abundance and distribution of marine mammals, reef fish, and deep-pelagic fauna. All three projects have a link to resource management information needs. In the case of environmental monitoring over longer time frames and simultaneously covering more components of the ecosystem (e.g. Gulf-wide synoptic study), the Program is exploring options.

RECOMMENDATION 29 - Long-term Impact and Funding Competition Development - The Program should undertake serious programmatic reflection on how its funding competitions are developed. [Reviewer 2 - Recommendation 1]

RECOMMENDATION 30 - Long-term Impact and Funding Competition Development - The Program should maximize its impact in a more long-term, comprehensive manner. [Reviewer 2 - Recommendation 7]

***RESPONSE*:** The Program CONCURS that examining how its funding competitions are developed and seeking to maximize its long-term impact are important. In developing its new guiding document, the Program will seek input from stakeholders on both these topics and codify its approaches to both within the document.

Performance

Design and Execution of Federal Funding Opportunities (FFOs)

6. How well does the Science Program identify and articulate clear priorities for research and its application in its funding competitions? To what extent does the funded research match those priorities?
    - 6.1. The process used to identify projects is scientifically rigorous and very sound. [Reviewer 3 - Finding 4]
    - 6.2. The Science Program's competitions tend to be stand alone competitions rather than repeating competitions. [Reviewer 2 - Finding 5] However, the 2021 competition is centered and cohesive and could be repeated with the future funding schedule building in other repeating FFOs. [Reviewer 1 - Finding 14, Reviewer 1 - Finding 15]
    - 6.3. The portfolio of funded projects is quite broad and strongly aligned with the priorities in the request for proposals (RFPs)/FFOs. [Reviewer 6 - Finding 2, Reviewer 4 - Finding 10]
    - 6.4. The Science Program effectively identifies and articulates priorities for research and its applications in its funding competitions and the funded projects do match the priorities outlined in the competition announcements. In the end, though, some of the most highly rated

proposals do not fit squarely within the fish and fisheries mission of the program. [Reviewer 5 - Finding 5]

6.5. The number of proposals and the bReviewer 3th of their topics can be surprising resulting in a substantial amount of work for the program and reviewers during the review process. [Reviewer 4 - Finding 16]

6.6. The program focuses on integrating the priorities and research needs of practitioners into solicitations. [Reviewer 1 - Finding 5]

6.7. A few researchers from federal agencies received funding from the Program. [Reviewer 4 - Finding 7]

6.8. It is unclear how potential conflicts of interest are evaluated during the project proposal review process. [Reviewer 4 - Finding 15]

6.9. Synthesis efforts merit support and have the potential to provide much needed insight into challenging problems, though it is not clear why the RFP was outsourced in a non-competitive manner, if key stakeholders were or will be engaged in the setting of research priorities and whether said priorities are appropriately aligned with the overall mission of the Program. [Reviewer 6- Finding 7]

6.10. The Program spends time briefing the review panel to make sure that it fully understands the review and selection criteria. This is an excellent best practice that could easily be extended to the mail reviewers. [Reviewer 3 - Finding 6]

6.11. The very low success rate for applicants can lead to decreased participation by applicants especially by end users with less experience with grant's competitions who experience a low return on their investments of time and political or social capital. [Reviewer 3 - Finding 10]

6.12. The number of proposals submitted, evaluated, and ranked for each funding cycle is large with a relatively low success rate for applicants. This indicates a lot of effort on the part of applicants, program staff, and technical reviewers to assemble a project slate. [Reviewer 5 - Finding 7]

6.13. The present approach to funding a planning round that would inform a future full implementation round of research is a fantastic approach to improving both the quality of science and the linkage of the research to management needs. [Reviewer 5 - Finding 8]

RECOMMENDATION 31 - Stronger Discourage Signal - Given the number of letters of intent/pre-proposals that are discouraged, yet still submit full proposals, the Program should be more rigorous and send a stronger signal to potential applicants about the types of projects which may be awarded funding. [Reviewer 1 - Recommendation 5]

***RESPONSE*:** The Program ACKNOWLEDGES, BUT DISAGREES with this recommendation. In our four competitions, 192 applicants have received a 'discouraged' response to their letter of intent or pre-proposal and only 5 have submitted full proposals none of which have been funded. In our two competitions where the category of 'discouraged without major modifications' was used, 83 applicants have received that response to their letter of intent or pre-proposal and only 8 have submitted full proposals of which 2 received funding. Given the very low return rate for 'discouraged' responses (3%) and the low return rate for 'discouraged without major modifications' responses (10%), the Program thinks it is currently sending a strong signal on the types of projects which may be awarded. This position is supported by the outcome that 2 of the 8 proposals that received 'discouraged without major modifications', but chose to submit a full proposal ended up receiving an award. Such an outcome suggests project teams from this category can make their projects competitive justifying a slightly higher return rate for this category.

RECOMMENDATION 32 - Reduce Workload on Applications - The program could evaluate ways to reduce the workload on applicants, the Science Program, and peer reviewers associated with each competition, perhaps by providing finer focus and articulation of funding priorities, being more selective in the letter of intent/ pre-proposal stage, or culling full proposals prior to engaging technical reviewers. [Reviewer 5 - Recommendation 14]

***RESPONSE*:** The Program PARTIALLY CONCURS with this recommendation. The Program agrees that a finer focus and articulation of its funding priorities could lead to fewer applicants and thus a reduction in workload for those who chose not to apply. The Program will explore ways to narrow and more clearly communicate the priorities in its funding competitions. The Program does not agree with the recommendation to be more selective at the letter of intent/proposal stage. Regarding the culling of full proposals prior to engaging technical reviewers, if the Program were to do so, it would curtail the independence of the review process. This practice is not permitted by NOAA grant regulations which stipulate that all full proposals must receive at least three independent reviews.

RECOMMENDATION 33 - Regular Competitions - The Science Program should focus on the long-term with regular competitions that build along the same direction over decades. [Reviewer 2 - Recommendation 2]

***RESPONSE*:** The Program CONCURS with this recommendation. The Program plans to repeat the planning and execution of actionable science companion competitions and long-term project competitions on a regular schedule for the remaining life of the Program.

RECOMMENDATION 34 - More Focused Competitions - The Program should strive to have future funding opportunities be clearer on the legislative mandate and more focused on specific suites of management issues to drive more focused responses from applicants. [Reviewer 5 - Recommendation 13]

***RESPONSE*:** The Program WILL EXPLORE this recommendation. The Program seeks to fund strong partnerships between researchers and resource managers with the expectation that a high degree of collaboration between these parties increases the likelihood of the findings and products from a project being used to inform a management decision. The Program has found that this type of strong partnership is rare. As a result, a competition narrowly focused on only a few management issues may not attract enough teams with the required level of collaboration to succeed. However, the Program recognizes that competitions that are broad run the risk of diffuse investment across many management issues and an impact that is limited in the near-term to only the management decisions that are the focus of the funded project teams. Whether the co-production approach and decision-driven science that the Science Program is promoting can lead to substantial change with only one or two projects in a management issue taking that approach will have to be evaluated. If the answer is no, then the Program will pursue a different path such as more concentrated investment with multiple projects focused on one management issue or additional capacity building activities.

RECOMMENDATION 35 - Funding for Execution of Actionable Science - If enough of the 2021 planning awards produce quality plans, the Science Program should raise the amount of funding available in the subsequent execution of actionable science competition as well as coordinate with other

programs on other ways to fund execution of quality plans. [Reviewer 5 - Recommendation 15, Reviewer 5 - Recommendation 16]

***RESPONSE*:** The Program CONCURS that if a large number of the 2021 planning awards produce quality plans, the Program should seek to increase the number of the plans that are implemented. One way is to increase the funding available in the Program's 2023 competition for the execution of actionable science. The Program will have some flexibility in the amount of funding available (~$1-2M) and will allocate more funding if the quality of proposals is high. The Program will also help planning project teams identify funding competitions from other funders that could support the implementation of their plans.

RECOMMENDATION 36 - Topic/Questions Checklist for FFOs - The Science Program should consider developing a checklist of topics/questions to address when developing competitions and reviewing proposals. [Reviewer 4 - Recommendation 8]

***RESPONSE*:** The Program CONCURS with this recommendation. The Program develops a prospectus for each competition that has to be approved by the Executive Oversight Board. The prospectus lays out the rationale for the competition within the context of stakeholder engagement, investments by other programs, and the mission of the Program. The Program publishes evaluation criteria for proposals in its funding competition announcements, which includes a list of questions the reviewers are to consider when scoring proposals.

RECOMMENDATION 37 - Success Rate - The success rate for competitions should be closer to 1 in 2 or 1 in 2.5 to avoid discouraging applicants, especially end users. [Reviewer 3 - Recommendation 15]

***RESPONSE*:** The Program ACKNOWLEDGES, BUT DISAGREES with this recommendation. Given the number of proposals the Program currently receives per competition, the Program does not have the funding to make awards to 1 in 2 or 2.5 proposals. Such an approach would also require the Program to fund proposals that score lower than a 3 on a 5 point scale, and the Program has made the choice to only fund proposals that score high.

The success rate for the Science Program is comparable to other open-competition programs. The Science Program has funded 18.9%, 11.3%, 7.4%, and 31.7% of full proposals to its four competitions. For comparison, the Competitive Research Program within NOAA, which also funds applied ecosystem research, has funded 22.0%, 8.7%, and 11.9% of the full proposals it has received in fiscal years 2019, 2020, and 2021, respectively. Similarly, across all its disciplines, the National Science Foundation has funded 27%, 28%, and 26% of the full proposals it has received in fiscal years 2019, 2020, and 2021, respectively.

RECOMMENDATION 38 - Continued Support - The Science Program should create a mechanism for researchers to garner continued support for their work if clear and significant scientific advancements are likely [Reviewer 6 - Recommendation 3].

***RESPONSE*:** The Program CONCURS with this recommendation. The 2019 long-term projects received five year awards that can be renewed for an additional five years following a review by individuals

external to the Program. Project teams that receive funding from the Program are also eligible to submit proposals to our future competitions.

RECOMMENDATION 39 - Including Collaborative Science Expertise - The Program should add a few individuals who are collaborative science/co-production process experts to the mail review and panel review. [Reviewer 3 - Recommendation 1, Reviewer 3 - Recommendation 3]

***RESPONSE*:** The Program CONCURS with this recommendation. It has done so for past competitions and will continue to do so for competitions that focus on collaborative science/co-production.

RECOMMENDATION 40 - Use of Video to Orient Mail Reviewers - The Program should use a short video (~5 min) to provide mail reviewers with information on the Program and the funding competition for which they are reviewing applications. [Reviewer 3 - Recommendation 2]

***RESPONSE*:** The Program CONCURS with this recommendation and will be instituting this practice for its future competitions.

RECOMMENDATION 41 - Refining Management Needs - The program should amplify the value of the knowledge gained from conversations with managers by discussing it with a larger group of management and stakeholder voices, which would further refine their understanding of management needs and identify previously unrecognized needs and thus enable refinement of funding opportunities. These conversations should be open and public to ensure no conflict of interest. [Reviewer 3 - Recommendation 11].

***RESPONSE*:** The Program CONCURS that identifying management needs should be open and that these management needs will be more refined and comprehensive if they are discussed among larger groups. The Program will explore options for doing so while recognizing the challenge of doing so within the broad geographic and topical boundaries for the Program. One way to gather this information is to leverage workshops and planning activities conducted by other entities. In the past, the Program has participated in workshops run by others and reviewed science needs documents from other entities to gain openly assembled and comprehensive information on management needs.

Project Management

7. How would you describe the quality and caliber of the Science Program's administration of its funded projects? What value has been added by the Program's active approach to management and tracking the progress of projects?

FINDINGS

7.1. The Program's administration and project management is well-organized and excellent. It is performed by a small team of committed and capable individuals which is impressive. [Reviewer 1 - Finding 17, Reviewer 2 - Finding 1, Reviewer 2 - Finding 8, Reviewer 2 - Finding 9, Reviewer 2 - Finding 12, Reviewer 3ing - Finding 1, Reviewer 5 - Finding 6, Reviewer 4 - Finding 1, Reviewer 4 - Finding 2, Reviewer 4 - Finding 3, Reviewer 6 - Finding 1]

7.2. The technical monitors are a strong, critical element of the Science Program and provide links to management applications and quality control without additional administrative costs. [Reviewer 4 - Finding 8, Reviewer 3 - Finding 11]

7.2.1. However, since technical monitors provide administrative support to the Science Program and collaboration support to the projects, it could create confusion on where oversight ends and collaboration begins. [Reviewer 2 - Finding 10]

7.2.2. It was not clear that technical monitors received clear and specific (written) instructions on their roles and responsibilities. [Reviewer 3ing - Finding 11]

7.3. NOAA's legal and administrative support is essential to the Program continuing to operate on a lean budget. [Reviewer 5 - Finding 6]

7.4. The Program demonstrates a strategic, efficient, and effective use of resources in administering funded projects. [Reviewer 1 - Finding 16]

RECOMMENDATION 42 - Collaboration by Project Teams - The Program should request that project teams explicitly describe their collaborative processes in proposals, in particular with their management partners, and designate a collaborative lead on the team; their approach to collaboration should be part of the evaluation process. [Reviewer 3 - Recommendation 6]

***RESPONSE*:** The Program CONCURS with this recommendation. The Program will strengthen our request in funding competitions for information about the collaborative processes project teams intend to use, in particular with the natural resource management community. Our next funding competition, set to be released in June 2022 and presently under internal review, incorporates this stronger direction. The Program also agrees that identifying a specific person as a project team's collaborative lead will add focus to the importance of collaboration as a core element of the co-production process. When it aligns with the intent of a funding competition, the Program will request applicants designate a collaborative lead. The Program will also continue to evaluate the project team's composition and their approach to collaboration when reviewing proposals submitted to competitions, evaluating funded projects' progress reports, and conducting annual project site visits.

RECOMMENDATION 43 - Technical Monitors - To increase consistency in the use of technical monitors, the Program should provide monitors with a clear statement on their roles and responsibilities as well as training (especially with regards to co-production), and periodic meetings where technical monitors can learn lessons from each other. [Reviewer 5 - Recommendation 17, Reviewer 4 - Recommendation 6, Reviewer 3 - Recommendation 17, Reviewer 3 - Recommendation 16]

***RESPONSE*:** Regarding project technical monitors, the Program CONCURS that having a clear set of roles and responsibilities, training, and periodic meetings for them to learn from each other are useful practices. The Program will continue to evaluate its framing of the roles and responsibilities for technical monitors and update them as needed based on input from current and former technical monitors. The Program will continue to train new technical monitors on their roles and responsibilities and provide support as needed in their execution. If the Program provides training in science co-production, it will seek to include technical monitors in that training. The Program will continue to hold periodic check-ins with technical monitors during the project period. The Program will also conduct exit interviews with technical monitors once projects conclude to assess how well the role has worked for them. The Program

supports the idea of periodic meetings among the technical monitors to share lessons, and will work with the current group to move forward on this recommendation.

RECOMMENDATION 44 - Assessing Transfer to End Users The Program should establish a clear process for documenting the flow of funded research to end users. [Reviewer 4 - Recommendation 5]

***RESPONSE*:** The Program CONCURS with this recommendation and currently requires that projects report semi-annually and in their final report on what type of information (e.g. finding, product, training) has been transferred to which end users. The projects also report contact information for the end user so the Program can verify the transfer.

RECOMMENDATION 45 - Functioning as a Boundary Organization - The Program should provide facilitation and communications training for funded projects, which would improve communication between researchers, managers, and the public (LA SeaGrant LaDIA model). [Reviewer 5 - Recommendation 2]

RECOMMENDATION 46 - Functioning as a Boundary Organization -The Science Program should continue to serve as a boundary organization that connects projects and facilitates workshops. [Reviewer 5 - Recommendation 2]

***RESPONSE*:** The Program CONCURS with the importance of facilitation and communication training for members of funded project teams and the value of boundary organizations that connect projects and facilitate workshops.

- The Program offered facilitation training to the 2021 project teams and received a positive response. The Program will seek to offer this training to any future planning awards as well as other awards. We will explore initiatives like Louisiana Sea Grant's Discovery-Integration-Application Program (LaDIA) for lessons we might apply.
- Boundary organizations play an important role in supporting actionable science and the co-production process by facilitating information exchange and partnerships between the natural resource management and research communities. The Program recommends that all of our applicants consider their use when designing their projects and that merit review panels assess their inclusion and value when evaluating proposals. Since it is important to include a boundary organization in a project from the outset, the Program is unable to fill this role for individual projects without creating a conflict of interest during our competitions. Instead, the Program supports projects by facilitating connections between related projects or by connecting projects to additional end users.

RECOMMENDATION 47 - Administrative Investment - The Science Program should consider additional investment, even if a modest investment, in Program administration. [Reviewer 6 - Recommendation 1]

***RESPONSE*:** The Program CONCURS with the recommendation to consider additional investment in administration while noting the finding by all six panelists that program administration and project management is currently well-organized and run. The Program is constantly evaluating the capacity of our

administrative resources to responsibly steward the funding while at the same time trying to maintain the amount of funding dedicated to executing science at 90% or greater. As the program grows, or should the level of in-kind support provided by NOAA change, we recognize additional investment in program administration may be needed.

RECOMMENDATION 48 - Quarterly Conversations with Project Teams - The Program working with its technical monitors should conduct 45-60 minute quarterly conversations with funded project teams centered on a few key projects/process items. In comparison to a written report, this conversation will allow the Program to have discussion around pressing issues, better Reviewer 3 how the project is going and the project team is interacting, and identify emerging concerns. [Reviewer 3 - Recommendation 18]

***RESPONSE*:** The Program CONCURS with the recommendation to conduct a conversation with each project team on a quarterly basis. The Program has implemented this practice for our 2021 planning for actionable science projects. Going forward, the Program will take a more systematic approach to conducting those meetings with all our project teams.

Coordination and Collaboration

8. How successfully did coordination and collaboration efforts with other entities generate returns for the Science Program and increase overall return on investment or strengthen the impacts or reach of activities supported by the Science Program?
    - 8.1. The Program actively seeks input from and collaborates with a variety of actors in the Gulf of Mexico. [Reviewer 1 - Finding 18]
    - 8.2. The work the Program conducts has been, and appears poised to continue to be, very valuable to the Restore Council and, more broadly, to restoration efforts across the Gulf of Mexico. [Reviewer 1 - Finding 20]
    - 8.3. The Coordination Forum does not really coordinate but instead focuses on report-outs from member programs on funding opportunities, products, and other program activities. [Reviewer 2 - Finding 11]
    - 8.4. Program staff are effective communicators and collaborators, and have strong relationships with many external funders. [Reviewer 3 - Finding 13, Reviewer 5 Finding 9]
    - 8.5. Program staff are well-positioned to facilitate awareness of near-term activities across Coordination Forum member programs. [Reviewer 5 - Finding 9]
    - 8.6. The Program's lean staffing approach has the added benefit of ensuring better coordination among federal agencies, university partners and state/local decision makers. [Reviewer 3 - Finding 3, Reviewer 3 - Finding 13]
    - 8.7. The members of the Coordination Forum do not necessarily represent the decision-making level within their organizations which constrains discussion and limits longer-term planning for priorities and collaboration. [Reviewer 5 - Finding 10]
    - 8.8. While the external advisory group established in the early days of the Program may not have met expectations and the Program developed other mechanisms for external input, the Program may have lost value in removing the opportunity for direct interaction between independent scientists and other stakeholders and the Executive Oversight Board. [Reviewer 5 - Finding 11]

RECOMMENDATION 49 - Coordination Forum - The Program should formally solicit research priorities from Coordination Forum members and others to better align its activities with other programs in the Gulf. [Reviewer 1 - Recommendation 1]

RECOMMENDATION 50 - Coordination Forum - The Program should continue its work facilitating coordination and collaboration across the Gulf, such as through the Gulf Coordination Forum. [Reviewer 1 - Recommendation 6]

RECOMMENDATION 51 - Coordination Forum - The Coordination Forum should continue to support member programs self-assembling to meet particular near-term goals. [Reviewer 5 - Recommendation 18]

***RESPONSE*:** The Program CONCURS with these recommendations to continue to engage with other programs through the Coordination Forum with regards to the solicitation of funding priorities, coordination and collaboration, and addressing shared near-term challenges.

RECOMMENDATION 52 - Strategic Partnerships and Leverage - The Program should have more executive- and staff-level interaction with the following programs to explore collaboration opportunities and maintain awareness of future implementation plans:

- DWH Trustee Implementation Groups, particularly Region Wide and Open Ocean;
- Gulf Restoration Council;
- NASEM Gulf Research Program; and
- RESTORE Centers of Excellence. [Reviewer 5 - Recommendation 19]

RECOMMENDATION 53 - Strategic Partnerships and Leverage - To avoid redundancies and maximize public resources, the Program should work with other DWH-funded programs and engage partners and stakeholders to identify key gaps, assess which programs have authority to address them, and divide responsibility among the funders or partner with other funders on specific funding opportunities. [Reviewer 3 - Recommendation 19, Reviewer 4 - Recommendation 7, Reviewer 1 - Recommendation 6]

RECOMMENDATION 54 - Strategic Partnerships and Leverage -The Program should consider establishing strategic partnerships with other funding entities to better leverage RESTORE funds.[Reviewer 6 - Recommendation 6]

RECOMMENDATION 55 - Strategic Partnerships and Leverage -The Program should serve as a cross-program communicator and find ways to help all DWH-funded programs establish leveraging opportunities. [Reviewer 2 - Recommendation 5]
RESPONSE: The Program CONCURS with the recommendations to interact more with other DWH-funded programs with the aim of entering into strategic partnerships and leveraging funding. In developing our next guiding document, the Program will have frequent interactions with other programs to identify key funding gaps, coordinate on funding opportunities, and develop a more integrated strategy on how to leverage funds.

RECOMMENDATION 56 - Additional Advice - The Program should evaluate mechanisms for strategic and executive-level interaction and feedback between its Executive Oversight Board and external scientists, managers, and other stakeholders (aka, RSPAWG; see GRP model). [Reviewer 5 - Recommendation 20]

***RESPONSE*:** The Program WILL EXPLORE this recommendation. In developing its next guiding document, the Program will evaluate the current governance structure for the Program and whether its Executive Oversight Board should receive strategic and executive-level input from external researchers, resource managers, and other stakeholders. The Program currently has project teams present to the Board which allows the Board to interact directly with the researchers, resource managers, and other stakeholders associated with those projects.

RECOMMENDATION 57 - Communications Strategy - The Program should consider partnering with another entity (e.g., Sea Grant) to improve its communications strategy, and should consider whether to out-source communications. [Reviewer 2 - Recommendation 6]

***RESPONSE*:** The Program CONCURS with the recommendation to partner with other entities to improve its communications. The Program is currently developing a communications strategy and is considering multiple approaches for accomplishing its communications objectives including out-sourcing. This process includes soliciting feedback and guidance from partners and other stakeholders. We anticipate that the strategy will include a more integrated approach towards communications and engagement that leverages the resources and networks of organizations in the region. The Program has already begun discussions with Sea Grant on how to leverage Sea Grant's extension network and anticipates that the national and state Sea Grant programs will be a cornerstone in future activities. These activities may include the transfer of findings and products from funded projects to additional managers and decision makers beyond those alReviewer 3y on or collaborating with funded project teams.

RECOMMENDATION 58 - Coordination on Synthesis - Future investments in synthesis activities should be coordinated with other funding programs that may be taking on similar activities. [Reviewer 1 - Recommendation 6]

***RESPONSE*:** The Program CONCURS with this recommendation to coordinate investment in synthesis. The Program has committed to investing approximately $3.5M in a pilot synthesis initiative and would welcome additional coordinated investments from other programs. To that end, the Program is part of a working group of programs that organized a discussion on synthesis at a meeting of the Gulf of Mexico Restoration and Science Programs Coordination Forum (Coordination Forum) at the 2022 Gulf of Mexico Conference. The consensus among the Forum was there is a need for scientific synthesis in support of environmental management and restoration outcomes. In particular, there is a need for synthesis at multiple scales including watersheds, sub-regional scales, and Gulf-wide. For reasons related to ease of access and building capacity, it would be preferable that some centralized capacity be located in the Gulf region.