

**National Sea Grant Advisory Board
Evaluation Committee: Independent Review Panel (IRP) Report
of the National Sea Grant College Program
and National Sea Grant Office
May 3-7, 2021**

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Executive Summary

Sea Grant punches well above its weight in terms of accomplishments and impacts. The strength of its science and outreach are clear from the independent metrics it captures. There is consistent evidence that shows that dollars invested in Sea Grant yield a strong return on investment that is highly impactful. The authorizing language for Sea Grant positions the National Sea Grant Office (NSGO) as a strategic leader, a network coordinator/connector, and impact aggregator. As such, the NSGO is responsible for establishing an overall strategic vision for Sea Grant that meets its mission to enhance the practical use and conservation of coastal, marine and Great Lakes resources in order to create a sustainable economy and environment. The Sea Grant model linking research to application to community is well recognized and highly valued by OAR leadership and Sea Grant's many partners.

The 34 place-based programs (network) operationalize the mission and vision of Sea Grant. They vary in size, location, longevity and funding. Sea Grant's place-based national hub and spoke configuration is well-integrated into local communities and in touch with constituent needs. The successful implementation of this model is a signature strength of Sea Grant.

The NSGO operates under a legislatively mandated 5.5% administrative funding cap and is currently staffed by 26 capable and committed individuals. The office is highly productive, but staff are stretched very thin. A variety of factors contribute to the heavy workload including additional reporting requirements (e.g., NEPA) and NSGO successes in growing partnerships. Since 2016, the NSGO has undertaken an extensive reassessment of policies and procedures that has resulted in creative and innovative improvements. NSGO has integrated diversity, equity, inclusion, and justice (DEIJ) practices into its workflow and is considered a model for NOAA.

Sea Grant enables partners to conduct work that fluidly moves from research to application, by providing the mechanisms for connecting with researchers, community stakeholders, industry, resource managers, as well as disseminating information through their extension and educational networks. Thus, they are optimally positioned to play a key role in advancing progress and enhancing the impact of the current administration's priorities. Sea Grant's highly collaborative culture also provides an opportunity to foster and elevate partnerships with other agencies within and beyond NOAA that amplifies their respective impact. NSGO's intentional facilitation and growth of partnerships has been substantial, diverse and effective.

Our review shows that the NSGO has effectively administered, innovated, and grown the ability of the entire program to conduct research--observing, exploring, and analyzing critical challenges and changes in the marine environment. NSGO has applied the results locally, regionally and nationally to deliver on OAR's strategies to conduct innovative science that is communicated to stakeholders to inform decisions and resource management. We feel that this review should meet the requirements for the OAR five-year program review.

This evaluation contains suggestions and recommendations to continue to prioritize strategic engagement, transparency, and communication with the network and partners within and beyond NOAA with the goal of further enhancing impact and funding opportunities. NSGO should continue to streamline processes and to collaboratively develop and communicate its various strategies as they relate to partnerships, funding allocation, evaluation, and reporting requirements.

1. Introduction

The National Sea Grant Advisory Board (Board) Independent Review Panel (IRP, Appendix A) virtual review of the National Sea Grant College Program (Sea Grant) and the National Sea Grant Office (NSGO) took place from May 3-7, 2021 (Appendix B,C).

In its review of the NSGO, the IRP assessed the broad role of the NSGO's charge in its authorizing legislation to provide strategic leadership, fiscal oversight of the use of federal funds, coordination and collaboration with the Sea Grant network comprised of 34 place-based Sea Grant programs, and its aggregation of Sea Grant high quality research and impacts into national outcomes. The IRP used the Sea Grant Standards of Excellence to evaluate the unique role of the NSGO. These Standards of Excellence are based on, and largely reflect, the standards for the Sea Grant programs, modified to be relevant to the goals and objectives of the NSGO. The outcome provides an evaluation of the leadership and management within the NSGO and its role as Sea Grant network leader and coordinator. This includes an evaluation of NSGO connections to, and collaborations with, the place-based Sea Grant programs, the Board, NOAA partners, and other external stakeholders to understand how NSGO's strategic leadership works to better develop opportunities and achieve programmatic impacts at local, regional, and national levels.

Prior to the beginning of the IRP, and in conformance with Sea Grant site visit guidelines, NSGO issued a public notice of the IRP by inviting interested parties to send written comments. The public notice was distributed by means of a Sea Grant newsletter. The IRP conducted interviews with NSGO Staff and considered feedback from a member survey submitted by the Sea Grant Association (SGA) and its Network Advisory Council (NAC, Appendix D). This anonymous survey, conducted by the SGA in response to a request from the IRP, invited responses from all sectors of the place-based Sea Grant programs including the program directors and coordinators for the various Sea Grant network activities such as research, extension, education, communication, legal and finance.

During the review, the IRP heard presentations from and had discussions with an extensive range of relevant parties including: *NOAA-OAR Leadership, SGA/NAC Leadership, NSGO staff, Sea Grant funded researchers, extension agents, private sector stakeholders, and others*. Two members of the Board served on the review panel, though the Board was not surveyed.

With this report, the IRP presents the findings, suggestions, and recommendations to the Board to facilitate program improvement.

2. Strategic Leadership, Management and Organization

The authorizing language for Sea Grant positions the NSGO as a strategic leader, a network coordinator/connector, and impact aggregator for Sea Grant. As such, the NSGO is responsible for establishing an overall strategic vision for the Sea Grant that meets its mission to enhance the practical use and conservation of coastal, marine and Great Lakes resources in order to create a

sustainable economy and environment. It does this in collaboration with its network of 34 place-based programs. The goal is to act locally but coordinate regionally and nationally thereby fostering Sea Grant's position of intellectual and practical leadership in addressing the nation's problems related to ocean, coastal, watershed, and Great Lakes environments and economies. The NSGO also has responsibility to ensure regulatory compliance for funding that it disperses.

Sea Grant's national hub and spoke configuration overlays a place-based hub and spoke model that ensures Sea Grant is well-integrated into local communities and in touch with constituent needs, while at the same time building regional and national communities of practice. The successful implementation of this model is a signature strength of Sea Grant. Its continued success requires leadership from the NSGO that promotes intentional collaboration, communication, transparency, and a continued focus on diversity, equity, inclusion and justice (DEIJ).

NOAA's Office of Oceanic and Atmospheric Research (OAR) is the host line office for Sea Grant. OAR leadership is knowledgeable of, engaged in, and supportive of both the National Sea Grant College Program and the National Sea Grant Office. OAR encourages Sea Grant's cross NOAA and interagency partnerships and has prioritized communicating Sea Grant's unique capabilities with NOAA partners.

Finding: NSGO did an excellent job preparing for and delivering a thoughtful, informative, and professional program to support the IRP deliberations. This included well designed and clear documents as well as excellent organization and moderation of virtual panels. The information showcased NSGO's value to stakeholders within and beyond NOAA, its extensive network expertise and impact, and its growing number of partnerships. It also emphasized the importance of considering a diversity of perspectives and lived experiences to successfully achieve its own goals and increase its impact.

Finding: Despite significant external drivers during the review period (new NSGO leadership, a zeroing out of Sea Grant's budget by the administration for four years, a government shutdown and the numerous obstacles caused by the pandemic) the NSGO was not only able to hold the program together but in fact successfully increased its impact. This is a testament to the leadership of the NSGO and the hard work and dedication of its staff.

Finding: The NSGO is at the forefront of NOAA in leading progress on DEIJ initiatives.

Finding: The support of OAR leadership has benefitted the Sea Grant program.

2.a. Office Staff and Organization

NSGO operates under a legislatively mandated 5.5% administrative funding cap and is currently staffed by 26 people (20 federal employees, three fellows, two contractors, and one liaison). They are highly capable and committed to Sea Grant's mission. The cross-disciplinary, cross-functional, and highly integrated activities of the office lend themselves to a matrix management model in which staff have multiple roles and responsibilities. The office is highly productive, but the staff is

stretched very thin, always trying to do more with less, and there appears to be growing burnout, influenced in part by the external challenges of the pandemic and other factors noted above. Other contributing factors relate directly back to the successes the office has had in growing partnerships and to the increased opportunities afforded by the transition of administrations.

The matrix management model, which institutionalizes collaboration by allowing operational and project teams to exist across supervisory structures, is complex and, because of staff turnover (including temporary details) and high staff workloads, there is often confusion on the part of both the staff and programs about specific roles and responsibilities. Clearer communication and onboarding when responsibilities shift would help to alleviate this issue. In the longer term an external assessment of workload capacity and distribution within the matrix model may help to optimize staffing configuration, create greater transparency for the programs, and augment the ability to recruit and retain a talented and diverse workforce. For example, partnership efforts are currently led by the Deputy Director who already has a full portfolio of responsibilities. A staffing assessment would help to determine whether a full-time partnership manager is needed to strategize, plan, communicate, market, and pursue priority partnerships. This could include hiring senior personnel (or using IPAs) with high level expertise and gravitas in the associated priority topical area (e.g., energy, resilience etc.).

Finding: NSGO staff are passionate about Sea Grant’s mission, their own work, and their ability to work on a variety of meaningful projects and programs.

Finding: NSGO leadership has created a culture of openness, where staff feel comfortable raising concerns and frustrations as they come up.

Finding: The percentage of female federal employees exceeds the percentage within the civilian labor force, but there is still minimal racial and ethnic diversity.

Finding: NSGO staff feels that they have insufficient capacity to deliver on existing commitments and fully realize the potential for their work. There is confusion about roles and responsibilities within the matrix management system.

Suggestion: NSGO should consider retaining outside expertise to conduct a staffing assessment for roles and responsibilities as well as to determine what additional staff expertise and capacity is needed to advance NSGO priorities, improve transparency and facilitate the need for expanded coverage in workload growth areas such as the National Environmental Policy Act (NEPA), legal, economics, social and behavioral science, data science, partnerships, DEI, communications, etc.

Suggestion: Evaluate the effectiveness of aquaculture liaison (LaDon Swann) as a model for increasing the subject matter expert capacity of NSGO and network.

Suggestion: Consider developing partnerships with minority and female serving professional organizations and minority serving academic institutions to improve Sea Grant's visibility among minority and female students and professionals to support recruitment of a more diverse workforce and expand support of the network.

2.a.i. Workflow and Efficiencies

NSGO staff work very hard to ensure that network proposal submissions, award applications, and other solicitations are processed in a timely and efficient manner. Since 2016, the NSGO has undertaken an extensive reassessment of policies and procedures that has resulted in creative and innovative improvements to processes and better connections to other relevant offices within NOAA and other federal agencies. Two examples highlight the types of efforts that have been underway. In the first, changes to NOAA and OAR policies resulted in a substantially increased workload related to NEPA requirements for funds administered through NSGO. The staff worked with NOAA legal counsel to develop a memo that resulted in a savings of approximately 2500 hours of administrative work in the NSGO while still ensuring NEPA compliance. The individual state programs saved time too, thanks to the streamlined compliance requirements. The second example focuses on the highly successful Knauss Fellowship Program which is widely recognized for its importance in enhancing workforce capacity. It has grown substantially and recent NSGO innovative administrative changes, including partial automation, ensure that placement of fellows is more efficient and reimbursements are more timely.

The outcome of these and other administrative changes is that despite a significant increase in the number of competitions, proposals, requirements (e.g., NEPA), and awards, the NSGO has maintained its ability to expedite funding while remaining compliant with federal regulations. This proactive approach has had an enormous benefit not only for the NSGO but for the entire Sea Grant network and its stakeholders.

Finding: NSGO has substantially improved efficiencies and is able to do more with a limited amount of capacity. There is clear dedication to continuous learning and improvement that benefit the entire network.

Suggestion: NSGO should continue to dedicate time and effort to establishing processes and protocols that lead to more effective results and use of staff time (e.g., consider assessing NEPA compliance earlier in the Notice of Funding Opportunity (NOFO) process). To ensure that staff have capacity to continue to develop processes to advance SG mission, NSGO should guard against spending too much time on the urgent at the expense of the important.

Suggestion: NSGO should continue to engage in OAR, NOAA, and DOC efforts to develop broader policies such that they take into consideration and accommodate to the extent possible the unique work of Sea Grant (for example, future adjustments to NEPA policies and the development of requirements for DOC's data management system). In particular, clarity and flexibility in policy and support from the OAR NEPA Office are both vitally important to Sea Grant's success.

2.a.ii. Planning, Implementation and Evaluation System

NSGO aggregates the network's impacts through its Planning, Implementation and Evaluation (PIE) system which links program and national strategic plans with annual reporting updates (including metrics and outcomes documented in the Planning, Implementation and Evaluation Resources (PIER) database) and a quadrennial evaluation process. With the implementation of PIE in 2009, Sea Grant significantly improved its ability to quantitatively capture network-wide impacts in the core national focus areas of healthy coastal ecosystems, sustainable fisheries and aquaculture, resilient communities and economies, and environmental literacy and workforce development. This allowed Sea Grant to showcase its impact through a regional and national lens in addition to its local one.

Users recognize the usefulness of the PIE system but expressed dissatisfaction with the PIER database, preferring one with a better user interface, enhanced interoperability with other required reporting systems, and less redundancy. The NSGO has an analysis underway that will establish how the data currently in the PIER database is used. With that as a baseline, there is an opportunity to work collaboratively with the network to determine how best to enhance efficiencies and streamline inputs while still retaining the key capabilities of network-wide data aggregation.

The information provided through the PIE system that informed the Board overview summary of program performance (Appendices E,F) for the most recent quadrennial site review of the place-based programs also served the IRP by highlighting the rigor of the site review process, the quality and relevance of the science, and the productivity of the Sea Grant network. In its deliberations, the IRP focused on the strategic leadership and effective oversight roles of the NSGO, including the value of the research partnerships added at the national level. Additionally, it was able to gauge the breadth, quality and impact of the research funded across the network from the information captured in the PIE system. Therefore, we feel that this review should meet the requirements for the OAR five-year program review and encourage the NSGO to pursue that outcome.

Finding: The process for planning, implementation, and evaluation (PIE), as described in the PIE 2019 policy, that the NSGO uses for programs and the NSGO, is thorough and rigorous. The database itself is operationally cumbersome and would benefit from a holistic review.

Recommendation: A collaborative effort between the NSGO, the network and big data managers/experts should be undertaken to reconsider the PIER database so that it better meets the needs of the network. Using data from the current analysis underway in the NSGO about database usage, groups could develop a common set of needs and performance requirements for the system and work to establish a user-friendly interface that eliminates redundancies, ensures (to the best extent possible) interoperability with other required reporting systems, and ease of use. This should be considered within the context of the DOC system that is under development.

Suggestion: NSGO should work with OAR to explore how best to improve the Sea Grant PIER Reporting system, with particular focus on providing the internal and external IT support for revising this system, including fiscal support for one-time database development that is projected to be greater than the total annual administrative budget for the program.

Recommendation: Make the necessary changes to PIE policy to ensure that the IRP review provides the information needed to meet the requirements of OAR's review policy (OAR Circular 216-3) for reviewing laboratories and programs every five years.

2.b. The Sea Grant Network

The 34 place-based programs operationalize the mission and vision of Sea Grant. They vary not just in size and location but also longevity within the network and funding. The earliest programs in Oregon, Rhode Island, Texas and Washington were established in 1971, the most recent program, Lake Champlain, gained Institutional status in 2018. Base funding allocations vary widely among the programs and are largely related to the funding levels established by Congress at the time a program joined Sea Grant. A funding allocation policy was developed in 2014 that attempted to relate programmatic base funding to the independent metrics of length of a coastline and state population. With the differences in allocation outcomes depending on the chosen set of metrics, the policy and its recommendations were contentious and challenging to implement given the recent trend for Congress to direct funding to particular priorities that members have identified Sea Grant to execute. The NSGO has actively worked with Congress to implement the directives and to identify and prioritize base funding needs for the programs.

Within the network, it is apparent that programs have varying degrees of understanding of the multi-faceted charges to the NSGO and the roles it can and does play based on its authorizing legislation. Some of this is due to the recent turnover of directors (47% have been on the job less than 4 years) within the Sea Grant network. Among the current directors, there is broad understanding that the NSGO plays an important role advancing Sea Grant's mission by serving the programs as a funding conduit and impact aggregator, but there is much less awareness of, or support for, its roles in setting strategic direction, serving as a reservoir of subject matter expertise, and acting as a facilitator of additional external funding opportunities. There is also little awareness within the network about the federal rules and constraints under which the NSGO operates. These are important because they determine when NSGO can operate with flexibility and when it cannot because it is constrained by the bureaucracy within which it operates.

The NSGO has ongoing efforts through increased engagement with the network to build awareness and trust by increasing transparency and enhancing working relationships in an effort to better articulate its role. This engagement is also intended to create transparency and visibility for the work of NSGO staff and imbue a sense of collaborative partnership between the network and NSGO. Program staff, like those in the NSGO, are feeling over-extended. In that kind of a resource limited environment, the successes of the NSGO in establishing partnerships and additional funding opportunities are often viewed as additional burdens on already overcommitted programs. It is

important that NSGO staff and the Sea Grant network staff work collaboratively to communicate about and prioritize opportunities as they seek to increase and expand durable partnerships and funding sources that will provide funding to the programs in ways that allow them to increase their capacity.

Finding: A legislatively mandated cap (now at 5.5% of appropriation) has been set for administration of Sea Grant at NSGO. Place-based programs, through SGA, advocate for the cap, promoting the view that increased resources be directed at building program capacities. OAR, on the other hand, supports elimination of the cap, giving more flexibility for NSGO to determine the extent of administrative investment. OAR has recognized the limitations caused by the Sea Grant administrative cap and provided reductions in some administrative charges.

Finding: Despite ongoing efforts by the NSGO to enhance transparency and partnerships, there is a significant lack of understanding within the network about the full scope of the NSGO's role as it is mandated by its authorizing legislation. This includes efforts to sufficiently engage and support the programs, meet current and increasing regulatory requirements (i.e., NEPA, research performance progress report (RPPR), etc.), and positioning Sea Grant within NOAA and the federal government for increased funding and partnerships. Tradeoffs at NSGO are considered when assuming new activities, and are affected by the administrative cap.

Finding: Base funding allocations for Sea Grant programs are largely proportionally tied to funding levels that date to the time a given program became part of the network.

Suggestion: Continue to work collaboratively with Sea Grant programs and the Board to articulate the important work that NSGO currently does that is not well known or understood and clarify communications and collaborations with the programs.

Suggestion: In collaboration with the programs, consider developing opportunities for staff from NSGO and the programs to learn more about each other's respective work through orientations as well as short or long-term details.

Recommendation: In collaboration with the Sea Grant programs, consider asking the Board to revisit the allocation of funds policy and provide advice on the allocation of new funds. A fresh look at the allocation policy will help vest the many new Sea Grant directors in the outcome. Such advice should inform a new policy to be developed by the NSGO that allows for strategic flexibility but also makes clear to the programs how future funds will be allocated, thus clarifying the rationale for how funding decisions are made (base vs. merit vs. needs vs. directed funding).

Suggestion: All funding opportunities for the programs should have clear guidance about whether funds can be used to support capacity (e.g., fiscal, communications, extension, etc.)

and clarify what, if any, flexibility exists for matching requirements. This increased engagement will continue the work NSGO has been doing to increase transparency and better articulate when and where the NSGO has flexibility versus where the NSGO is constrained by the bureaucracy in which it operates.

Suggestion: NSGO should consider providing additional training and support on fiscal and competition management.

3. Stakeholder Engagement and Network Support

3.a. Relevance

NSGO has developed a robust strategic planning framework that captures a vision and a process for Sea Grant investment. The national plan aligns with Department of Commerce and NOAA strategic plans, informed by stakeholder needs in coastal and Great Lakes states, and developed through Sea Grant leadership (NSGO, the Board, SGA). The four national focus areas allow place-based programs to align their strategic plans with the national plan to address critical issues at a local and regional scale. The implementation of place-based strategic plans forms the basis for program evaluation. Critical to the success of implementation of the overall Sea Grant plan is reporting and aggregation of outcomes and accomplishments achieved during implementation.

Finding: The Sea Grant strategic planning process is sound and responds to agency, program, and stakeholder needs. A database system allows NSGO to aggregate impacts and accomplishments from place-based programs to show overall Sea Grant success. The recent program review (PRP) process, the Board's Site Visit Process Report (Appendix E), the Board's Equity and Fairness Report (Appendix F), and the Board's Report(s) to Congress (Appendix G) show the strength of planning, implementation and evaluation in achieving Sea Grant's goals.

Finding: The NSGO and the Sea Grant network have a strong history of successful collaborative engagement with stakeholders on topics of local, regional, and national importance. By engaging staff across the network, further stakeholder input is achieved in planning and implementation.

Finding: NSGO Network Liaisons meet regularly with leadership of Sea Grant functional areas. This creates opportunities to share information and update all parties on emerging issues for the network.

3.a.i. Visioning the Future

In partnership with the 34 place-based programs, NSGO has also facilitated formation and implementation of ten "visioning" groups, allowing the network to identify priorities and future pathways for investment. Participation in visioning groups was at a grassroots level, with staff from

all place-based programs engaging in the vision teams. Significant stakeholder input was achieved through this deeper dive into selected topics.

Finding: The visioning exercise has enabled network input in determining future directions and has been recognized by the Board as a key accomplishment, as the process has provided a platform for future investment of Sea Grant.

Suggestion: NSGO should continue to work collaboratively with the place-based programs to consider the optimal number of vision groups that prioritize effort, account for capacity limitations, and increase impact.

Suggestion: NSGO should consider differentiating visions into aspirational and operational goals. Consider limiting the number of aspirational goals (e.g., sustainable seafood, renewable energy, and resilient coastal communities) and develop/refine them with regionally relevant stakeholder input. Consider orienting remaining goals around improving internal operational efficiencies and workplace compliance (e.g., improving distribution of Knauss fellows, expediting reporting, and improving DEI).

3.b. Research

Research portfolios are developed by the 34 place-based programs in response to local and regional needs and are in alignment with the national Sea Grant strategic plan. Stakeholder interaction at the program level is essential in developing a pertinent, robust place-based research program.

National strategic initiatives (NSIs) are layered on top of the research portfolios for each state's omnibus submission. These NSIs are determined by Congressional mandate, partnerships and NSGO prioritization, and offer new opportunities for research or enhanced funding for ongoing research. Given existing capacity within the NSGO as well as the programs, too many opportunities may become difficult to respond to. Due to the timing of year end funding availability and an increase in number of opportunities due to successful positioning of Sea Grant, recent solicitations for NSI proposals have come in rapid succession. The NSGO has limited control over the timing of development and release of the NSIs. The cadence and number of NSI's may not allow for the full development of individual proposals by state programs and may create additional stress for staff at the NSGO and in the programs who already feel stretched thin.

Finding: A key strength of the Sea Grant program is its reliance on research partners for their expertise and resources, which helps advance Sea Grant's clearly defined goals.

Finding: There is significant interest in increasing the recognition of the results of research supported by Sea Grant. This includes both within NOAA and the Department of Commerce, and nationally as an example of "actionable science" in federal-state-university partnerships.

Suggestion: In coordination with research directors, communicators, and extension resources, the NSGO should consider evaluating more effective ways to identify hot topics that can inform the development of funding opportunities, as well as be used to build visibility of Sea Grant research within NOAA and the Federal government.

Suggestion: The NSGO should continue to use what flexibility it has to spread out the solicitations for proposals over as wide a time period as possible and, to the best of its ability, inform interested parties as to when individual program solicitations will be published.

3.c. Engagement

The NSGO and the place-based programs have a strong and deliberate focus on engagement with coastal communities. This support, through continued direct engagement, is critical to the success of Sea Grant and contributes to the realization of funding to support research programs. The NSGO has been highly supportive of DEIJ goals, putting it well in front of much of NOAA, and distinguishing it as a “morally conscious program” (*from external comment*). Continued DEIJ work will contribute to more resilient communities and strengthen the workforce throughout the place-based programs as well as the NOAA workforce through well-planned Knauss recruitment and retention.

The panelists and interviewees were uniformly supportive of Sea Grant Extension and its connections to the communities that they serve. For example, the important role that Sea Grant has played historically and will play in the advancement of sustainable seafood is highlighted by the actions of the Sea Grant Extension. Contacts between industry, resource managers and researchers are greatly facilitated by the Extension agents thereby promoting the development through research of solutions to problems being faced by the seafood industry. This industry/ regulatory/ research interface is key to the success of the entire Sea Grant program.

Finding: Sea Grant has been a key source of workforce development, both through direct educational opportunities (students, postdocs) and through Sea Grant Extension training opportunities. These successes can help build a highly trained and resilient workforce to deal with emerging issues affecting coastal communities.

Finding: The recent increase in federal funding for Sea Grant aquaculture has enabled the program to invest in regionally relevant issues, guided by stakeholder engagement. Increased staffing at NSGO and a network liaison allow continual engagement with the Sea Grant network. The framework can be used as a model for development of increased investment in specific topic areas (e.g., resilience, emerging contaminants, etc.).

Suggestion: Sea Grant should continue its work to fund research, outreach, and extension to better inform the public about improvements in marine farming thereby promoting responsible, sustainable approaches to aquaculture.

Finding: State, regional, and national partners recognize the value of Sea Grant education activities. Many of these partners depend on Sea Grant to provide trained experts in marine and coastal sciences to deliver their agency's education programming.

Suggestion: Consider using the Environmental Literacy Vision as a framework to inform a strategic path forward for education planning.

Finding: As identified in its authorizing legislation, Sea Grant advances ocean and species conservation and the economic health of coastal and Great Lakes communities and economies and balances these charges effectively.

Suggestion: To better inform the public and increase visibility for Sea Grant, consider how to support and increase the focus on outreach and the production of outreach materials (photos, images, graphics, etc.) in funding competitions.

4. Collaborative Network Partnerships and Other Activities

Sea Grant (through NSGO) enables partners to conduct work that fluidly moves from research to application, by providing the mechanisms for connecting with researchers, community stakeholders, industry, resource managers, as well as disseminating information through their extension and educational networks. Thus, they are optimally positioned to play a key role in advancing progress and enhancing the impact of the current administration's priorities. Sea Grant's highly collaborative culture also provides an opportunity to foster and elevate partnerships with other agencies within and beyond NOAA that amplifies their respective impact.

NSGO's intentional facilitation and growth of partnerships has been substantial, diverse, and effective and there are many examples within NOAA and other agencies (EPA, DOE, DHS) for how these agencies and the Sea Grant network have benefitted. Several of the large partnership efforts are having an extraordinary impact on some very difficult problems that cross multiple sectors (e.g., energy, aquaculture, red snapper fishery). These highlight Sea Grant's effective model and can provide opportunities to scale it and inform the replication of it where appropriate. The NSGO has developed a policy framework and system that helps to lead, manage, and track the many partnerships and, within the Sea Grant network, the creation of new communities of practice has enhanced cohesiveness.

Despite this, the Sea Grant Network seems to have a lack of understanding and lack of awareness of why partnerships are being selected and sought out. The reasons for this are likely twofold: 1. The network's lack of understanding of the full scope of the role of the NSGO and 2. The network's already overburdened staff. Given the wide universe of potential partners, it would be helpful for NSGO to work with the network to develop and articulate an overall strategy that could more intentionally guide and prioritize planning and targeting of potential partners (e.g., climate and

community resiliency). Such a strategy could also help to inform and prioritize National Strategic Investments and competitions. The result would be a more cohesive approach to the network's efforts and a greater level of understanding by and support from the network for why such partnerships are being advanced. It would also have the added benefit of helping overburdened staff to focus their efforts on what is deemed the most important.

Finding: The Sea Grant model is recognized as highly effective at connecting research to application to community and because of that the NSGO has been successful at growing partnerships that address some of the nation's most intractable coastal issues.

Finding: The programs do not always understand how and why partnerships are selected. Partnerships are a challenge for the network since they come with cost and require additional support and capacity in the programs, and some opportunities come with very short response times.

Suggestion: NSGO should engage the Sea Grant Network in prioritizing topical areas. These should be guideposts with the flexibility to adapt if necessary. When evaluating new initiatives and partnership opportunities, NSGO should consider internal staff capacity and capacity of the network to realize the potential of the opportunity.

Suggestion: Partnership focused funding opportunities (e.g., national strategic initiatives) should be targeted to an overall partnership strategy(ies). The NSGO should continue to work with partners to strive for maximum lead time to enable the programs to prepare for and respond to competitions.

Suggestion: Based on strategy and partnership priorities, the NSGO should consider building relationships with the non-governmental organization (NGO) community by inviting key representatives from priority and targeted partners to participate in the Sea Grant communities of practice periodically to expose the NGOs to Sea Grant, and likewise expose the network to the work of the NGO groups.

Suggestion: The NSGO should consider charging an administrative fee on all pass-through projects and look for creative ways to reduce match requirements by the programs for partnership projects. In addition, the NSGO should encourage the programs to add administrative costs to budgets associated with competitive funding.

Recommendation: The NSGO should revisit its partnership framework to include an overall strategy for prioritizing, planning, and targeting potential partners. The revised strategy should include participation from the Sea Grant network to ensure that mutually supported partnerships are nurtured and developed and there is appropriate buy-in by the network and sufficient NSGO and network capacity to support implementation.

5. Overall Summary and National Impacts

The Sea Grant model linking research to application to community is well recognized and highly valued by OAR leadership and Sea Grant's many partners. The place-based nature of the model makes it highly effective. Of course, the decentralization of its place-based programs, while a key to success, also presents challenges when trying to paint a cohesive national picture of its work and accomplishments. The NSGO development of the PIE system in 2009 and associated PIER database was a giant step forward in aggregating impacts and outcomes so that they could be viewed at local, regional, and national levels. The metrics and outcomes captured through the PIE process and evaluated across all programs during the last site review (2018-2019) are impressive and capture the strength of the program-driven science and outreach. The role of the NSGO in strategically leading the network by facilitating individual program success, aggregating program outcomes into network wide accomplishments, and identifying new opportunities for growth is also clear. Some examples from the last four years include: marsh habitat restoration (millions of acres), seafood safety and sustainability (thousands trained in HACCP protocols, tens of thousands adopting safe and sustainable fishing practices), research and technique improvements in aquaculture (hundreds of million dollars in economic impact), building of resilient communities (hundreds of U.S. communities that improved their resilience, thousands of U.S. communities that adopted sustainable development practices), improvements to environmental literacy (reaching hundreds of thousands of students and educators), and developing workforce capacity (e.g., Knauss Fellows, graduate student support, fisher forums).

Sea Grant continues to have strong support from its stakeholders (business sector, NGOs, local and state governments, NOAA, and other federal agencies). Congress has recognized Sea Grant's successes with increases in overall program support (up 30.8% from 2014 to 2020 to \$88M annually) and has called on it to address some of the nation's most intractable coastal issues.

As opportunities have arisen, the NSGO adopted a strategy that focused on more intentional investments in partnerships. This has already enhanced the visibility of, and investment in, the Sea Grant Program. Sea Grant led communities of practice further elevate the impact and visibility of Sea Grant's work.

The path to Sea Grant's success in achieving its external goals and national impact begins in the NSGO with effective internal processes and protocols. NSGO is legislatively mandated to ensure regulatory compliance with its grants process (from proposal submission through review, award, reporting, and closeout). Since 2016, the office has made a real effort to ensure that regulatory compliance is achieved without becoming an obstacle to the work of the programs. NSGO has taken a proactive approach to reviewing and assessing policies and procedures and making changes where warranted to streamline processes and reduce workload for the NSGO office and network. This includes reaching out to other units (e.g., OAR, NOAA) to develop policy interpretations that work for Sea Grant. The result is that despite an increased number of competitions, proposals, requirements, and awards, the office has maintained its ability to expedite grants. This approach

benefits the entire Sea Grant network (including stakeholders) and is the important foundation upon which the rest of Sea Grant's successes are built.

Our review shows that the NSGO has effectively administered, innovated, and grown the ability of the entire program to conduct research observing, exploring, and analyzing critical challenges and changes in the marine environment. NSGO has applied the results locally, regionally, and nationally to deliver on OAR's strategies to conduct innovative science that is communicated to stakeholders to inform decisions and resource management.

Finding: Sea Grant punches well above its weight in terms of accomplishments and impacts. The strength of its science and outreach are clear from the independent metrics captured in the PIER database. There is consistent evidence that shows that dollars invested in Sea Grant yield a strong return on investment that is highly impactful.

Finding: Sea Grant's place-based model is widely recognized for its effectiveness in moving research to application. This is in large part due to Sea Grant extension agents who are trusted members of local communities.

Suggestion: NSGO should consider how to leverage the increased visibility and success with partnerships and develop a plan to accommodate the potential for rapid growth in opportunities and funding. This plan should clearly articulate how Sea Grant differentiates itself and showcases its core strengths (e.g., research capacity and trusted member of the community) as well as detail NSGO and network capacity necessary to support implementation.

Appendices

Appendix A. IRP Panel Member Names and Affiliations
Appendix B. NSGO Site Review Agenda
Appendix C. NSGO Briefing Book
Appendix D. Survey Questions for SGA and NSGO Staff
Appendix E. Site Visit Process Report
Appendix F. Site Review Equity and Fairness Report
Appendix G. State of Sea Grant 2020 Report to Congress

Appendix A. IRP Panel Member Names and Affiliations

Nancy Targett, Ph.D.

Chair, Dean Emerita and Distinguished Professor Emerita, University of Delaware, College of Earth, Ocean and Environment

Amber Mace, Ph.D.

Co-chair, Sea Grant Advisory Board Past Chair and Executive Director of the California Council on Science and Technology (CCST)

Don Kent

President/CEO Hubbs-Sea World Research Institute and CEO Pacific Ocean AquaFarms

Mary Erickson

Deputy Director, NOAA National Weather Service

John Cortinas, Ph.D.

Director, NOAA Atlantic Oceanographic and Meteorological Laboratory

James Hurley, Ph.D.

Director, Wisconsin Sea Grant and Sea Grant Association Representative, Director of the University of Wisconsin Aquatic Sciences Center, and Professor of Civil and Environmental Engineering at the University of Wisconsin-Madison

Jim Murray, Ph.D.

Retired, Sea Grant Advisory Board Member and Sea Grant Advisory Board Evaluation Committee Chair

Appendix B. NSGO Site Review Agenda

Agenda

Sea Grant Independent Review Panel

May 3 - 7, 2021 via Google Meet (Daily from 12-4pm; All times are Eastern)

Monday, May 3, 2021

- 11:00 am IRP Closed Session
- 12:00 pm Welcome, Introductions, Opening Remarks
Jonathan Pennock, National Sea Grant College Program Director
Nancy Targett, IRP Chair, Dean Emerita and Distinguished Professor Emerita, University of Delaware, College of Earth, Ocean and Environment
Amber Mace, IRP co-Chair, Executive Director of the California Council on Science and Technology (CCST)
- 12:20 pm Presentation: NSGO Federal Responsibilities and Operational Goals
Jonathan Pennock, National Sea Grant College Program Director
Nikola Garber, National Sea Grant College Program Deputy Director and Acting Assistant Director for Partnerships and External Relations
- Presentation: National Sea Grant Advisory Board
Susan Holmes, NSGO Performance and Evaluation Lead and Designated Federal Officer for the National Sea Grant Advisory Board
Elizabeth Rohring, NSGO Engagement Lead and Alternate Designated Federal Officer for the National Sea Grant Advisory Board
Discussion
- 1:20 pm BREAK
- 1:30 pm Presentation: NSGO Organizational Structure & Administration
Jonathan Pennock, National Sea Grant College Program Director
Nikola Garber, National Sea Grant College Program Deputy Director and Acting Assistant Director for Partnerships and External Relations
Jonathan Eigen, NSGO Assistant Director for Operations
Summer Morlock, NSGO Assistant Director for Programs
Discussion
- 2:35 pm BREAK
- 2:45 pm Remarks From and Discussion With OAR Leadership
Craig McLean, OAR Assistant Administrator
Ko Barrett, OAR Deputy Assistant Administrator for Programs
- 3:30 pm IRP's Choice of Continued Discussion or Closed Session

4:00 pm IRP Closed Session

5:00 pm Adjourn for Day

Tuesday, May 4, 2021

11:00 am IRP Closed Session

12:00 pm Presentation: NSGO Leadership in Advancing Sea Grant (Grants, Competitions, Communications, Fellowships)
Jonathan Pennock, National Sea Grant College Program Director
Chelsea Berg, NSGO Grants Manager and Program Officer
Becca Certner, NSGO Competitions Manager and Program Officer
Rebecca Briggs, NSGO Research Lead and Program Officer
Doug Bell, NSGO Data Manager
Brooke Carney, NSGO Communications Lead and Program Officer
Maddie Kennedy, NSGO Fellowships Manager
Discussion

1:00 pm BREAK

1:10 pm Presentation: NSGO Leadership in Advancing the National Sea Grant College Program (Planning Implementation and Evaluation (PIE), Economic Valuation, and Budget Planning)
Susan Holmes, NSGO Performance and Evaluation Lead and Designated Federal Officer for the National Sea Grant Advisory Board
Alison Krepp, NSGO Social Science Lead and Program Officer
Jonathan Pennock, National Sea Grant College Program Director
Discussion

2:30 pm BREAK

2:40 pm Presentation: NSGO Leadership in Empowering Program Success (Functional Leads, Network Visioning, Social Science)
Elizabeth Rohring, NSGO Engagement Lead and Alternate Designated Federal Officer for the National Sea Grant Advisory Board
Rebecca Briggs, NSGO Research Lead and Program Officer
Joshua Brown, NSGO Environmental Literacy & Workforce Development Lead and Program Officer
Chelsea Berg, NSGO Grants Manager and Program Officer
Hallee Meltzer, NSGO Communications Specialist
Kelly Samek, NSGO Legal Lead and Program Officer
Brooke Carney, NSGO Communications Lead and Program Officer
Alison Krepp, NSGO Social Science Lead and Program Officer
Discussion

4:00 pm IRP Closed Session

5:00 pm Adjourn for Day

Wednesday, May 5, 2021

11:00 am IRP Closed Session

12:00 pm Sea Grant Guiding Principles: Diversity, Equity & Inclusion (DEI)
Brooke Carney, NSGO Communications Lead and Program Officer

DEI Panel

Linda Chilton, Sea Grant DEI Community of Practice and USC Sea Grant
Mona Behl, Sea Grant DEI Community of Practice and Georgia Sea Grant
Matthew Bethel, Sea Grant TLK Community of Practice and Louisiana Sea Grant
Melissa (Watkinson) Shutten, Washington Sea Grant DEI Initiatives
Discussion

1:00 pm BREAK

1:10 pm Sea Grant Guiding Principles: Partnerships
Nikola Garber, National Sea Grant College Program Deputy Director and Acting Assistant
Director for Partnerships and External Relations

Partnerships Panel

Jennifer Sprague, National Weather Service, Senior Advisor
Maggie Yancey, U.S. Department of Energy, Wind Energy Technologies Office,
Community Impacts Research and Outreach Lead
Discussion

2:10 pm BREAK

2:20 pm Closed Session: Sea Grant Association Feedback
Susan White, North Carolina Sea Grant Director and Sea Grant Association President
Sarah Kolesar, Oregon Sea Grant Research & Fellowship Program Leader and SGA
Networks Advisory Committee Chair
Stephanie Otts, Director, National Sea Grant Law Center & SGA Program Management
Committee Chair

4:00 pm IRP Closed Session

5:00 pm Adjourn for Day

Thursday, May 6, 2021

11:00 am IRP Closed Session

- 12:00 pm Discussion/Followup from Previous Sessions
- 12:15 pm Sea Grant Productivity and Impacts Overview and Panel - Part I
Moderator: Summer Morlock, NSGO Assistant Director for Programs
- Sustainable Fisheries and Aquaculture
Mark Rath, NSGO Aquaculture Manager
Anoushka Concepcion, Connecticut Sea Grant, Aquaculture Extension Specialist and Seaweed Aquaculture Hub Principal Investigator
Greg Stunz, Texas A&M University, Gulf Red Snapper Principal Investigator and Professor
Michael Rubino, NOAA Fisheries, Senior Advisor
- Healthy Coastal Ecosystems
Kelly Samek, NSGO Legal Lead and Program Officer
Christopher Hein, Virginia Institute of Marine Science, Associate Professor, Dept of Physical Sciences
Erica Ombres, NOAA Ocean Acidification Program, Program Manager
Jamie Reinhardt, NOAA Restoration Center, Fish Restoration Coordinator
- 1:45 pm BREAK
- 2:00 pm Sea Grant Productivity and Impacts Overview and Panel - Part II
Moderator: Summer Morlock, NSGO Assistant Director for Programs
- Resilient Communities and Economies
Elizabeth Rohring, NSGO Engagement Lead and Alternate Designated Federal Officer for the National Sea Grant Advisory Board
Claudia Nierenberg, NOAA Climate Program Office, Climate and Societal Interactions Division Chief
Heidi Stiller, NOAA Office for Coastal Management, South Regional Director
Russell Callender, Washington Sea Grant Director and SGA Executive Committee Member
- Environmental Literacy and Workforce Development
Joshua Brown, NSGO Environmental Literacy & Workforce Development Lead and Program Officer
Amanda McCarty, NOAA NE Fisheries Science Center, Fishery Monitoring and Research Division Chief and Knauss Alumnus
Lea Klingert, Alaska Commercial Fishing and Agriculture Bank, Chief Executive Officer & President
Beth Hinchey Malloy, U.S. EPA Great Lakes National Program Office, Science, Monitoring, Evaluation, and Reporting Section Chief
John Baek, NOAA Office of Education, Senior Education Evaluator
- 3:30 pm Discussion

4:00 pm IRP Closed Session

5:00 pm Adjourn for Day

Friday, May 7, 2021

11:00 am IRP Closed Session

TBD Debrief with NSGO Leadership

4:00 PM Adjourn IRP; Thank You!

Appendix C. [NSGO Briefing Book](#)

Appendix D: Survey Questions for SGA and NSGO Staff

The IRP conducted interviews with NSGO Staff and considered feedback from a member survey submitted by the Sea Grant Association (SGA) and its Network Advisory Council (NAC). The questions used in the survey are listed below.

What do you think are the most impactful things that the NSGO does?

What are some of the biggest barriers to NSGO's effectiveness?

What are some things that you would change or improve if you could?

Is there anything else you'd like to share with us that you think will help inform our evaluation?

Appendix E. [Site Visit Process Report](#)

Appendix F. [Site Review Equity and Fairness Report](#)

Appendix G. [State of Sea Grant 2020 Report to Congress](#)