

Resilience and Environmental Justice

A subcommittee of the National Sea Grant Advisory Board

February 2023

Subcommittee Members

National Sea Grant Advisory Board Representatives:

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National Sea Grant College Program Representatives:

Dr. Sam Chan (Oregon Sea Grant) and Ms. Linda Chilton (University of Southern California Sea Grant)

Sea Grant Association Representatives:

Dr. Susan Lovelace (South Carolina Sea Grant Consortium), Dr. Fredrika Moser (Maryland Sea Grant)

External Experts:

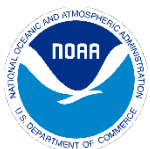
Dr. Dionne Hoskins-Brown (NOAA National Marine Fisheries Service), Dr. Paulinus Chigbu (University of Maryland Eastern Shore), Dr. Joan Fitzgerald (Northeastern University)

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Subcommittee Charge

In 2021, the National Sea Grant Advisory Board (Board) was charged with creating a resilience and social justice exploratory subcommittee, which was to complete work and provide a report to the national director by spring/summer 2022.

The committee's charge includes the following elements:

- The subcommittee is to explore the intersections of Diversity, Equity, Inclusion, Justice, and Accessibility (DEIJA) and specifically that social, environmental, and racial justice are inseparable components of resilience and resilience planning.
- Subcommittee members are to include representatives from the Board, National Sea Grant Office (NSGO), Sea Grant Association (SGA), the National Sea Grant College Program (Sea Grant) and external experts.
- The subcommittee will also explore strategies for Sea Grant to ensure that social justice is included in resilience efforts.
 - These strategies formed the basis for an informational panel with the Board in 2022.
- The subcommittee is to advise NSGO on the creation or adoption of metrics that explicitly include aspects of environmental justice¹ and ensure that benefits of resilience planning are made available equitably to all community members and especially people who are particularly vulnerable to coastal hazards.
 - These metrics may ultimately be used as performance measures to ensure progress is being made towards the implementation of the recommendation made by the Board in the [State of Sea Grant, 2020 Biennial Report to Congress](#).
- The subcommittee will identify and collate best practices, literature and case studies from across Sea Grant, NOAA, and from sources external to the federal government to help inform continued discussions among Sea Grant about this critical and rapidly evolving area.

The subcommittee, which consists of Board members, state Sea Grant program directors and state Sea Grant programs staff, NSGO staff, and external experts, began their deliberations in August 2021 and has continued to meet on a biweekly basis. The subcommittee has heard from several external experts, considered how to approach various methods of documenting effort (measures and metrics), and discussed the complexities of the charge as well as various best practices, case studies, and literature at the intersection of resilience and social justice.

¹ *“Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys:*

- *The same degree of protection from environmental and health hazards, and*
- *Equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”*

This description is quoted from the Environmental Protection Agency (EPA) work on Environmental Justice. The term was established in the federal administrative lexicon in an Executive Order of the President in 1994, and underpins programs, grants, and other actions carried out by EPA and other agencies. The term originated in the Civil Rights movement in the 1960s.

In spring 2022, the subcommittee presented preliminary recommendations to the full Board. With this document, the subcommittee is expanding these preliminary recommendations, and providing, in Appendix A, examples of possible metrics and measures gleaned from some practices available from state Sea Grant programs. In addition, the subcommittee has concluded that its efforts are better served and more reflective of the underlying mission of Sea Grant by utilizing the more focused term “environmental justice” in lieu of the broader term, “social justice.” “Environmental justice” is a term used in many parts of the federal government since its inclusion in a Presidential Executive Order in 1994.

Introduction: Considerations for Sea Grant’s Planning and Programming at the Intersection of Environmental Justice and Resilience

Sea Grant is committed to working with communities and partners to avoid and minimize negative impacts and increase resilience to the many expanding threats and opportunities facing the nation’s coastlines. The program recognizes that resilience is only possible when it explicitly considers the differential access to resources, knowledge, and infrastructure that can vary widely among coastal residents. Put simply, communities are only as resilient as their most vulnerable members, and research has repeatedly shown that strategies that only include a subset of community members are ultimately unsustainable. Building on a long history of engagement and ongoing learning, the state Sea Grant programs should continue to inclusively co-develop² actions to address threats posed by environmental change, with all sectors of the communities and economic sectors they serve; and these principles should be explicitly included in assessment, planning, implementation, and evaluation.

Specifically, advancing resilience with vulnerable coastal communities requires establishing, supporting, or expanding the capacity to anticipate, prepare for, avoid, minimize, adapt to, recover from, and thrive in the face of disruptive climate and environmental change, in an inclusive and equitable manner.³

² As used in this document, co-development is collaborative cooperation to develop an idea, project, approach, methodology, or solution where interested parties, which may benefit or be affected are an equitable part of the effort. In the context of environmental justice and planning, co-development improves public involvement; supports collaborative problem solving; and makes a visible difference in communities that are underserved, under-resourced, and overburdened. Co-development integrates multiple ways of knowing and collaboratively addressing risks with the community, those most directly impacted, as equal partners. Researchers, managers and policy makers work side by side with community partners equally leading and valuing experiential, community, and cultural knowledge in understanding hazards and adaptive management.

This description has been adapted from various public and private sources that utilize a co-development approach. The term, “equitable development,” is often used in this context and is utilized by EPA in applying principles of environmental justice.

³ Sea Grant recognizes the challenges of the use of words such as resilience and the variety of interpretations, perceptions, and realities, including those related to fatigue and expectations on communities.

It is self-evident that all people deserve to be safe and resilient to natural disasters irrespective of their inherent scientific, engineering, architectural, and financial capacities. Exposure to the effects of climate change, weather events, and other coastal hazards derives to a great extent from how and where buildings, communities, and infrastructure are designed and sited. Similarly, capacity to adapt to these threats is a key component of overall vulnerability. Addressing these realities is crucial to safe and resilient coastal communities and ecosystems, and recognizes that ultimately the resilience of a community depends on the resilience of *all* community members. However, research has shown that too often resilience planning can simply shift the burden of contending with coastal hazards to those least prepared or empowered, and can in some cases create more problems than it addresses. System-level, holistic planning which explicitly considers not just variable exposure to hazards but also differential sensitivity, adaptive capacity, and ultimately the vulnerability of community members is required.

Sea Grant has a long record of working with communities and partners to enhance the ability of coastal populations to live and thrive within the capacity of their habitats and ecosystems. A trusted, ongoing, and on-the-ground presence is critical for combining the local knowledge that coastal communities have and require, with the resources of the federal government and partners, to ensure that people and their natural environment are prepared for and resilient to severe events. Sea Grant brings a strong synergistic capacity to advance these issues by combining engagement, outreach, education, and communications with scientific, technical, and legal research expertise of universities, the National Oceanic and Atmospheric Administration, and partners.

Integrating natural and social sciences and legal approaches with architecture, engineering, community design, and the financial and economic resources of the private sector and local and federal governments, provides the path for preparedness and resilience. This effort must simultaneously seek to strengthen the resilience of coastal ecosystems and the communities that they support. This must occur at all levels for adaptive capacity and access to resources in the face of both acute events and the sustained impacts of climate change.

Recommendations

The subcommittee developed the recommendations below to guide the NSGO Director and the work of the state Sea Grant programs. These recommendations are based on subcommittee synthesis and working sessions, which included external experts; reflections from work of the DEIJA and Traditional Local Knowledge (TLK), communities of practice (CoP); and feedback from preliminary presentations (e.g., Board meeting, Sea Grant Week). They also relied heavily on the leading-edge work undertaken by many of the state Sea Grant programs and partners; recognizing the ongoing efforts are still needed across programs. There is a necessity to continue learning, implementing, and evaluating practices that integrate across environmental justice and resilience. The following recommendations are ways in which the subcommittee considered how Sea Grant makes and measures progress on environmental justice and resilience.

1. While this subcommittee was explicitly formed to explore the intersections of resilience and environmental justice, it builds on broader efforts within Sea Grant to integrate DEIJA as well as TLK. To be accountable, the process to advance this collaboration is as follows:
 - a. Develop an MOU among the CoPs, the NSGO, and the SGA to ensure coordination, communication, and collaboration;
 - b. Incorporate guidance from the DEIJA and TLK CoPs into all Board, NSGO, Sea Grant planning and activities;
 - c. Continue to support a national liaison/coordinator;
 - d. Support the state Sea Grant programs to establish a resilience and environmental justice committee and add this enterprise to the DEIJA Vision and Best Practices documents;
 - e. Explore partnerships within NOAA, throughout the Federal enterprise, and in the private sector to amplify the ability to address challenges to the resilience of populations that define the spectrum of DEIJA communities-both financially secure and challenged, and both traditionally included and historically underserved. Likewise, programs should be encouraged to seek funding from local governments and other sources.

2. Provide the state Sea Grant programs with resources and clear direction to assess their current capacity and to adjust their programs to align resilience efforts with environmental justice.
 - a. Make training resources available to the state Sea Grant programs and support the work of the DEIJA CoP in promoting the integration of DEIJA principles into all Sea Grant resilience activities;
 - b. Further integrate the expectation of centering environmental justice in resilience endeavors, including planning and assessment, in policies and guidance for funding;
 - c. In order to work effectively with historically marginalized communities, funding opportunities should allow sufficient time for partnering, project planning, and development. In addition, funding might be offered separately, first for planning and secondly for conducting and evaluating projects;
 - d. Work with the state Sea Grant programs and CoPs to support further incorporation of DEIJA into functions and organizational structure related to resilience; In addition to Sea Grant's strengths in the natural and social sciences, and law, continue to support disciplines such as architecture, engineering, hydrology, coastal geology, land use, finance and community design all of which contribute to equitable resilience.
 - e. Work with the state Sea Grant programs and CoPs to advance career pathways as well as for community members to develop their own capacities to incorporate resilience and local governments to build resilience.

3. Require annual or biennial reporting on progress made towards integrating DEIJA in resilience efforts.
 - a. Within the current Planning, Implementation, and Evaluation (PIE) cycle, the NSGO should include annual reporting updates on resilience/environmental justice work via impacts and accomplishments. With the next PIE cycle, the NSGO should require such updates, giving careful attention to allowing programs to build into new activities and test new approaches that may need multiple iterations to achieve goals success;
 - b. The NSGO should consider what mechanisms are appropriate for Sea Grant to document work and achievements in areas categorized as vulnerable to coastal hazards.

4. Consider, in coordination with the state Sea Grant programs and CoPs, guidance on metrics to assess integration of DEIJA into resilience projects and activities as defined by strategies, methods, outcomes, and accomplishments.
 - a. Continue to work closely with, and help coordinate efforts among the DEIJA CoP subcommittee, state Sea Grant programs resilience specialists, the SGA Resilience working group, and other NOAA colleagues to consider and test possible measures and metrics for documenting DEIJA and resilience;
 - b. The Board, with input from the CoPs and the state Sea Grant programs, may continue to oversee and support the NSGO in development of measures and metrics, with pilot implementation planned for the 2024-27 omnibus;
 - c. The Board should keep the need for broader DEIJA reporting/accountability as well as specific environmental justice and resilience reporting/accountability in mind as conversations continue and decisions are made.

Appendix A: Indicators of Change

The subcommittee does not endorse any of the metrics or measures listed in this appendix for implementation, but merely provides them as an illustration of potential directions evaluation mechanisms might take in the future. The subcommittee is supportive of looking for measures that are co-developed with state Sea Grant programs and communities and there is value in capturing barriers to success (inside and outside of NOAA) and small successes.

The subcommittee has been in a space of learning over the past couple of years. Learning from each other, learning about efforts that the state Sea Grant programs are involved in, and learning about activities inside and outside the federal government. In this learning space, a number of key questions have been driving the subcommittee's conversations.

- How can we better **engage, learn, and partner** with underserved communities connecting their well-being to resilience in meaningful ways that reflect their values and needs?
- How could we **measure** community relationship-building as a **metric**, rather than documenting community resilience achievements as the only metric for measuring DEIJA success?
- What are the **key communities and interested parties** that Sea Grant should serve and/or partner with to promote DEIJA through resilience or in some of the metrics in use today (i.e., are we measuring the right things)?
- How do we (can we?) **quantify** so that we can compare/add metrics across our work with communities?
- How do we approach **changing behavior** as an institution?
- What are the **institutional barriers** in doing this work?

The subcommittee has learned that state Sea Grant programs are taking steps to address DEIJA and environmental resilience, however this is a moving target, with some programs making strides, and things are ever changing.

- DEIJA Visioning
 - Sea Grant DEIJA visioning and plan is intended to inform the state Sea Grant programs, NOAA, and partners, providing background on traditional and local ecological knowledge and use in research, outreach, and education, including best practices and selected references and resources.
 - Conducting state Sea Grant program surveys as part of this effort to collect baseline data.
- Request for Proposal (RFP) Review
 - NSGO and Research Coordinators are working together to review recent RFPs and RFP processes for specific, intentional actions and changes aimed at achieving DEIJA goals.
- Fellowship Diversity (at the program and national levels)
 - Sea Grant is working to remove barriers and increase participation in research grants, fellowships, and internships to include underrepresented groups and individuals.

- Community Engaged Internships
 - Community Engaged Internships as it is a program (e.g. CEIs are for undergraduate students from marginalized communities or serving marginalized communities).
- Performance Work Plans
 - Some state Sea Grant programs across the network are looking into incorporating DEIJA into performance work plans.

The subcommittee benefitted from valuable input from its members, CoPs, NSGO and the 2022 Sea Grant Week workshop on a variety of potential environmental justice and resilience metrics and measures. Some of these examples and approaches, based on the shared experiences, are provided below. The hope is that these examples are a jumping off point for further discussions among the NSGO and the state Sea Grant programs to advance sound and equitable mechanisms to advance Sea Grant as it works to integrate environmental justice and resilience. Examples of potential metrics are below:

- Change how we collect data on the number of communities we engage with/who adopt a practice.
 - Modify current measure "community who adopts a practice" data to include engagement (as engagement takes time and is a step to adopting practices).
- Have we improved in serving and explicitly addressing the needs articulated by more marginalized communities in resilience activities?
 - Measure baseline social and economic data on communities served and compare to individual program baselines.
 - Co-develop strategies for measurements of success that are explicitly based on the stated needs of communities being served.
- How have we improved the resilience capacity of marginalized communities?
 - Measure and update relationships, perhaps through a social network analysis.
 - Involve community members and leaders from marginalized communities in assessments.
- The number of Principal Investigators from diverse institutions (e.g., Minority Serving institutions (MSIs); non-MSI but majority students of color; Pell Grant recipients; Tribal colleges; etc.).
- Track the amount of resources provided to different communities towards achieving environmental justice & resilience.
- Track the number of collaborations with state Sea Grant programs based on mentorship from successful programs.
- Track the number of proposals written with communities identified as historically and currently underserved.

The subcommittee learned that NOAA and other agencies in the federal government as well as entities outside the federal government have been taking steps to address DEIJA and environmental resilience.

The subcommittee's discussions have wondered how to identify meaningful measures without being overly prescriptive. Can achievable measures drive change - or learning - in the state Sea Grant programs and potentially beyond into larger NOAA? If we can accept some framework to move forward, then we could discuss what we can measure and what the metrics are. It is also important to say that performance measures are only as meaningful as the robust work that must go on "behind" the measure. These measures are simply a way to quantify efforts across the state Sea Grant programs and while important, do not tell the full story of Sea Grant and partners. The subcommittee learned that indicators for measuring results could fall into several categories:

- Program performance measures;
- Policy performance measures;
- Function performance measures;
- Agency performance measures.

Program Performance Measures

- Reform how fellowships are run to improve diversity.
 - Remove barriers to increase participation;
 - Rethink priorities in RFPs (remove barriers to increase participation);
 - Work across state Sea Grant programs to push DEIJA visioning Community of Practice and other best practices from programs;
 - Recognition of the importance of partnering and including students and families from early ages and continue as a community partner.

Policy Performance Measures

- Increase the number of underserved students, fellows, and others working on resilience:
 - Removing barriers and increase participation of underserved communities:
 - Reform fellowship and internship programs to improve diversity;
 - Increase the representation of underserved students, fellows, and others working on resilience;
 - Ensure that data are maintained on the number and demographics of fellowship applicants and those selected and number of students participating in CEI;
 - Improve dissemination of fellowship announcements to institutions, including MSIs;
 - Adapt RFPs and marketing for fellowships and internships to include DEIJA.
- Increase in the number of Environmental Justice (EJ) communities served by the programs and/or level of services.
 - Increase the number of EJ communities served by the programs. (Define percentage or absolute number over what period of time);
 - Hire an engagement specialist within each program to do outreach and build relationships in targeted EJ communities;
 - Adapt RFPs and marketing for programs and grants to include DEIJA metrics that include DEIJA in RFP Report to NOAA through accomplishment statements

in narrative form on what the program has been doing in the DEIJA space.

- DEIJA statements added to various policy and guidance documents.
- Cultural Climate Surveys for feedback and assessments to inform policy changes.
- Service Assessments can be used to inform policy changes.
- Sea Grant omnibus language changes to encourage projects that consider DEIJA and resilience.

Function Performance Measures

- Shift in Hiring Practices: Develop hiring practices that promote workforce diversity and community resilience efforts; consider residency of candidates and communities of focus and include local community leaders in hiring.
 - Number of training/workshops on hiring process to minimize bias among people on a search/hiring committee;
 - Position announcements and evidence of dissemination to reach a diverse audience;
 - Availability of staff to lead community resilience efforts;
 - Involvement of community leaders in consideration of DEIJA at all levels of the hiring process;
 - Establishing partnerships with MSIs.
- DEIJA Training: Enhance literacy in DEIJA as a prerequisite for community resilience.
 - Types of training and number of training hours;
 - BMPs shared at meetings and/or adopted - trainers and beneficial training programs shared with other Sea Grant programs.
- Document efforts and learning to become equitable and reach communities previously not reached: Co-develop resilience plans with local communities, especially those previously not reached.
 - Extent of engagement of local communities in developing resilience plans;
 - Number of new and continuing underserved local communities reached/engaged;
 - Number of resilience plans co-developed with local communities.

Agency Performance Measures

- Increase resilience of communities by making internships and fellowships more inclusive and diverse and by ensuring that resilient targets are informed by the communities served.
 - Increase in URM representation in fellowships;
 - Go to staff members whose responsibilities include ensuring that DEIJA is embedded in all resilience efforts.
- Increase resilience of communities by co-creating resilience plans and targets with community participants.
 - Resilience plans developed for communities;
 - Number of resilient targets informed by the communities served;
 - Staff whose responsibilities include DEIJA work.
- Build and sustain community resilience efforts by creating a positive work environment for all employees.

- Conduct Cultural Climate Surveys annually to assess employee experiences and identify factors influencing positive or negative experiences;
- Report on Cultural Climate Surveys;
- Evidence that cultural climate surveys results are used to improve performance at the agency.
- Transform the agency so that fairness and equity will become not just ideals, but principles embedded in its community resilience practices and projects.
 - Conduct Community Resilience Service Equity Assessments;
 - Report on Community Resilience Service Equity Assessments;
 - Evidence that Community Resilience Service Equity Assessment results are used to improve performance at the agency.
- Provide adequate funding to support inclusion and climate resilience projects and programs.
 - Evidence of funding shifts towards inclusion and climate resilience;
 - Amount (and percentage) of funds used to support climate resilience projects and programs developed collaboratively with marginalized communities;
 - Funding to hire a Community Resilience Staff.
- Drive the goal of enhancing community resilience by including guidance and specific language in the Sea Grant Omnibus document to encourage projects that consider DEIJA.
 - Evidence that Sea Grant Omnibus contains specific DEIJA language relative to community resilience.
 - Sea Grant Omnibus language helps drive the DEIJA goal;
 - Sea Grant Education Network and NOAA Education;
 - NOAA NMFS Action Plan;
 - EPA EJSCREEN.

Further or pending consideration for developing indicators for change include:

- Co-develop equity metrics with the communities being served (Function Performance);
- Start with simple metrics (Function, Policy, Agency Performance);
- Identify the barriers and the small successes to achieving equitable outcomes (Function Performance);
- Take action steps to improve hiring practices or examine the climate of cultural and/or inherent biases in which we work (Agency Performance).