

FRAMEWORK: Leveraging Sea Grant's Climate and Weather Expertise to Support Resilient Communities and Economies

AUGUST 18, 2017: J. Whitehead, L. Schiavinato, A. Mann, M. Woloszyn, and J. Judge

GOAL:

Despite 10 years of coastal weather and climate research, education, and extension efforts, Sea Grant's place in the overall weather and climate enterprise has yet to be broadly solidified and disseminated outside of NOAA. The goal of this effort is to establish a national vision for Sea Grant's place in the weather and climate subsector of resilience, with components to guide internal programming decisions as well as external networking into the broader weather and climate enterprise.

Objectives:

- By October 31, 2017, convene a Weather and Climate Network Visioning Committee drawn from the Sea Grant Climate Network (SGCN) membership to include representation from all 3 Sea Grant pillars and across Sea Grant thematic goals
- By March 31, 2018, host a synchronous workshop at 3 satellite locations to draw cost-effective representation from all 33 Sea Grant programs into the visioning process
 - Share lessons learned on weather and climate since the chartering of the SGCN
 - Synthesize input across all pillars and thematic goals on strategies for sector-specific subsets of weather and climate resilience, to potentially include urban climate resilience, rural climate resilience, hazard vulnerability, climate in emergency and disaster management, climate and public health, enhancing diversity and inclusion in weather and climate, innovative adaptation strategies, climate and ecosystems, or other emerging sectors identified by SGCN members.
 - Network with representatives of potential partners and knowledge networks on how to solidify and expand Sea Grant's niche in the coastal weather and climate enterprise
- By June 30, 2018, SGCN Regional Co-Chairs and Network Visioning Committee members synthesize workshop results and circulate draft document of 10-Year Sea Grant Weather and Climate Vision to SGCN at large
- By August 31, 2018, present final 10-Year Weather and Climate Vision to National Sea Grant Office

Boundaries:

For the purposes of this effort, we define the weather and climate enterprise as the full suite of public, private, academic, professional and advisory organizations involved in providing weather and climate data and translating its use to inform adaptive actions to improve resilience to short term weather events, longer term climate variability impacts, and long term climate change (after McPherson, Gail, &

Friday, 2012). Efforts may encompass certain elements of fisheries and ecological resilience and adaptation strategies as they relate to short-term weather influence on coastal hazards, chronic long term climate influences, and the impacts of long term climate trends including sea level rise. However, we would not seek to also define resilience and adaptation strategies for these sectors except where they intersect with coastal weather, coastal climate, and climate change (e.g. demographic shifts, invasive species, economic drivers of land use change).

BACKGROUND

The Sea Grant Climate Network (SGCN) was chartered by the Assembly of Sea Grant Extension Program Leaders in 2009 to increase the effectiveness of Sea Grant climate programming and outreach nationwide by coordinating Sea Grant climate-related activities, enabling the sharing of talent and resources, and facilitating partnerships with climate agencies and organizations within NOAA and the communities we serve. While Sea Grant's capabilities are well known in parts of NOAA and academia, recognition of our broadening expertise and role is far from universal. For example, discussions of recommendations for partnerships in the Sustained National Climate Assessment (NCA) process continue to focus on NOAA Regional Integrated Sciences and Assessments (RISA) programs, USDA Climate Hubs, and USGS Climate Science Centers as the main boundary institutions with climate capacity at the state and local level. However, current work by Dr. Jessica Whitehead leading the SNCA Federal Advisory Committee Topic Team on Engagement Modes indicates there are still significant gaps in the NCA's ability - and the weather and climate enterprise as a whole - to build capacity to meet stakeholders' needs to use weather and climate information for resilient decision-making. Sea Grant's decades of research, extension, and education experience has much to offer in this weather and climate resilience space to improve two-way stakeholder engagement and co-production of knowledge on the local and state levels, so more coordinated networking is needed to present Sea Grant as a reliable national weather and climate resource for the nation's oceanic, coastal, and Great Lakes regions.

SGCN members have called for the development of a broad weather and climate vision since a workshop at the National Adaptation Forum in 2015. In 2017, many SGCN members attended a workshop on resilience in Sea Grant hosted by the National Sea Grant Office at the National Adaptation Forum in Saint Paul, MN. At this workshop, NSGO staff led a rapid SWOT discussion on resilience, defined broadly as "the ability of communities to prepare for, respond to, and recover from disruption." Many of the strengths, opportunities, and needs identified related specifically to Sea Grant's history of work on weather and climate. However, members in attendance determined a comprehensive vision needs additional input from all pillars of the Sea Grant network as a whole and an improved understanding of opportunities and mechanisms for broader Sea Grant recognition and partnership throughout the weather and climate enterprise.

Relationship to National Strategic Plan Priorities:

Most explicitly, this visioning will help improve Sea Grant programs' abilities to meet National Strategic Plan Resilient Communities and Economies Goal 4, *Resilient coastal communities adapt to the impacts of hazards and climate change* (note that until the NSGO FY18-21 Strategic Plan is released our team is mapping goals to the FY14-17 Strategic Plan). Specifically, a vision will broadly improve our network-

wide abilities to function as a boundary institution (science translator, as per language of draft recommendations for the Sustained National Climate Assessment) by supporting Sea Grant research, education, and extension staff in meeting the following outcomes:

- Learning outcome: Decision-makers are aware of existing and available hazard- and climate-related data and resources and have access to information and skills to assess local risk vulnerability.
- Learning outcome: Communities have access to data and innovative and adaptive tools and techniques to minimize the potential negative impact from hazards.
- Action outcome: Communities apply best available hazards and climate change information, tools and technologies in the planning process.
- Action outcome: Decision-makers apply data, guidance, policies and regulations to hazard planning and recovery efforts.
- Action outcome: Communities develop and adopt comprehensive hazard mitigation and adaptation strategies suited to local needs.

Applying weather and climate information for improved decision-making cuts across several goals of the National Sea Grant Strategic Plan, because weather and climate are cross-cutting factors in the management of fisheries, ecosystems, and human communities. However, while weather and climate information may enhance our ability to meet these goals, the lack of an explicit mention of such data means that Sea Grant has yet to meet its potential in accounting for weather and climate hazards in these sectors. Improving our network's understanding of available weather and climate data and developing a vision for improving our role as a boundary institution for tailoring this information to end users will also support learning and action outcomes under the following goals:

- Healthy Coastal Ecosystems Goal 1: Ecosystem services are improved by enhanced health, diversity and abundance of fish, wildlife and plants
- HCE Goal 2: Ecosystem-based approaches are used to manage land, water and living resources
- HCE Goal 3: Ecosystems and their habitats are protected, enhanced or restored.
- Sustainable Fisheries and Aquaculture Goal 1: A Safe, secure, and sustainable supply of seafood to meet public demand
- Environmental Literacy and Workforce Development Goal 1: An environmentally literate public supported and informed by a continuum of lifelong formal and informal engagement opportunities.

Collaboration across Synergistic Visioning Activities

Our team will make the effort to collaborate across other visioning activities, specifically where there are topic or approach overlaps with WCE. Many of the elements of the Community Response to Flooding topic are likely to relate to weather and climate data and adaptation needs, and are in fact treated as related topics by many WCE entities including the National Climate Assessment. We will work with the CRF team to ensure that our broad vision is complementary and addresses flood response topics, and vice versa. Similarly, the WCE field as a whole realizes that diversity, equity, and inclusion principles are critical to building resilience to weather and climate hazards, including in efforts by the National Academies of Science to measure and improve community resilience through the Resilient

America Roundtables. WCE is well suited in particular to collaborate with the DEI team, given that North Carolina is a co-lead and DEI lead program Georgia is part of the leadership of the SGCN. Similarly, our team will update other teams that may benefit from WCE visioning discussions, including Water Resources, Traditional and Local Knowledge, and Seafood Sustainability.

GENERAL RESOURCES

Roles and Responsibilities

We will hold 3 simultaneous and connected hub/satellite workshops in Raleigh, San Diego and Chicago in the February to March 2018 time frame. These workshops will be connected via video conference/webinar technology, but will not have open webinar connections to allow remote attendance. To attend you must travel to one of the three locations. The 4 co-leading programs selected these locations to maximize participation and reduce the distance required to travel, but still provide opportunities to closely collaborate across programs and regions. Input from the workshops will be used to develop the WCE vision document.

The co-leading programs will convene a planning committee drawn from interested programs, organize a workshop to get further visioning input (described below), and coordinate synthesis of this input into a visioning document. Supporting programs are asked to commit staff travel for in-person meeting attendance at minimum, and higher levels of support would include staff time for participation on the planning committee to plan the workshop and produce the final visioning document. The workshop will be open to all interested programs and advertised on the SGCN listserv. Special effort will be made to reach out to directors to ensure representation both on the planning committee and in resulting meetings from throughout the research, education, and extension pillars as well as representing expertise from all goals of the National Strategic Plan.

Role of Co-Leads In Convening the Network for Visioning Input:

Tentatively, we will seek to host at least a 2-day workshop using a concurrent workshop satellite model modified from that used in the 4th National Climate Assessment Regional Workshops in spring 2017. The three sites will be in Raleigh, NC, San Diego, CA, and Chicago, IL. However, lessons from past concurrent hub-and-satellite meetings indicate that limiting the number of locations to 3 increases opportunities for sharing results from breakout discussions and integrative cross-site collaboration among participants. Workshop programming will run concurrently via a webinar connection between sites so that presentations may be delivered from both sites and breakout lessons learned may be shared in real time across geographies without restricting the available time in the agenda for cross-site collaboration. We propose these locations based on the number of regionally-oriented weather and climate services partners located within driving distance of all three co-lead Sea Grant programs to eliminate the need for travel or honorarium support for key partnership representatives.

The co-lead programs (NC, CA, USC, and IL/IN) will be responsible for staff time for workshop planning and coordinating a process agenda to be used at both sites, and with securing low-cost technology capable classrooms on campus facilities with sufficient breakout space. These programs will also lead the Planning Committee's development of the vision document output after the workshop. An external

facilitator for the meetings is desirable to allow all co-lead and planning committee members to participate fully; however, if funding is not available to support external facilitation, internal facilitators can be utilized.

- North Carolina Sea Grant's main campus location in Raleigh affords easy access to expert advice closest to the practitioner level on developing and maintaining successful weather and climate partnerships outside the Sea Grant network. North Carolina Sea Grant is located within walking distance of the USDA Southeast Regional Climate Hub, the South Atlantic Landscape Conservation Cooperative, the USGS Southeast Climate Science Center, the National Weather Service Raleigh Weather Forecast Office, and the North Carolina State Climate Office. Downtown Raleigh is the home of the Albemarle-Pamlico National Estuary Partnership, an EPA National Estuary Program. The Carolinas Integrated Sciences and Assessments (CISA) RISA, Southeast Regional Climate Center, and the Department of Homeland Security Coastal Resilience Center all employ staff on the nearby campus of the University of North Carolina at Chapel Hill. Finally, both the EPA and US Global Change Research Program have staff located at the Research Triangle Park in Durham. As such, significant expertise on weather and climate partnership capacity will be available to the Sea Grant Network at large without incurring overnight travel costs. Travel to the Raleigh-Durham International Airport is convenient to programs in the Mid-Atlantic, South Atlantic, and Gulf regions, and hotel reservations are usually available well under federal GSA rates.
 - *General Budget:* North Carolina Sea Grant will contribute facilities reservation on the North Carolina State University campus at Raleigh, and staff time for Dr. Jessica Whitehead to complete planning, meeting logistics, and serve as main point of contact and participate in the visioning document completion process.
- California Sea Grant's main office is located at Scripps Institution of Oceanography at UC San Diego in La Jolla. The San Diego metro area is home to many potential partners and participants in this effort, including the San Diego Climate Collaborative, Southwest Fisheries Science Center, National Weather Service San Diego, Tijuana River National Estuarine Research Reserve, Port of San Diego, National Park Service, U.S. Marine Corps - Camp Pendleton, and the South Coast regional offices of the California Coastal Commission, Department of Fish and Wildlife, Regional Water Quality Control Board, and Department of Water Resources, among others. California (and USC Sea Grant, who will co-host the West Coast event,) have close partnerships with the NOAA Office for Coastal Management, San Francisco Bay Conservation and Development Commission, Greater Farallones National Marine Sanctuary, and San Francisco Bay National Estuarine Research Reserve, and a number of California state Agencies. This effort likely would draw participation from these partners and other institutions in the San Francisco Bay Area, a region that is a national leader in coastal resilience. San Diego also is home to a major airport hub and train stations, which will allow for relatively inexpensive travel from the other parts of the California coast, as well as for Sea Grant programs from other West Coast states, Alaska, and the Pacific.
 - *General Budget:* California Sea Grant will provide staff time to support this effort. California Sea Grant extension fellow Dr. Jenna Judge serves as the coordinator of the San Francisco Bay and Outer Coast Sentinel Site Cooperative. Judge will participate as part of the

workshop planning core team, which will include facilitating participation from federal, state, and local partners in the Bay Area, and will assist with workshop synthesis and with the development of a vision document. Nina Venuti, extension research assistant, will provide support for workshop planning and logistics, act as a scribe during the workshop, and assist with workshop synthesis. While staff time is not included for extension director Lisa Schiavinato, she will nevertheless provide high-level support throughout this effort. This support includes workshop participation, input on the development of a vision document, and supervision of Judge's and Venuti's time. Travel is requested for Judge, who is based in Oakland, to attend the workshop. Both the Scripps Institution of Oceanography and UC San Diego have meeting rooms equipped with the necessary technology to facilitate large and/or web-based meetings.

- The University of Southern California (USC) Sea Grant program is located in Los Angeles, CA, and works with a wide range of collaborators and partners on projects relevant to its "Urban Ocean" focus, including the CA and Regional Water Quality Control Boards, NOAA, the California Coastal Commission, the LA Regional Collaborative for Climate Action, and numerous coastal communities from Orange County to Santa Barbara. USC Sea Grant will help plan and facilitate the West Coast meeting in San Diego. USC Sea Grant will engage experts and stakeholders from the greater Los Angeles metropolitan region, as well as close partners throughout California who are leaders in climate adaptation planning.
 - *General budget:* USCSG will contribute staff time for extension specialist Ms. Alyssa Mann to assist in meeting planning and logistics and to complete planning and coordination on the visioning document completion process, administrative and planning assistance from the USCSG fellow Alex Yee, local travel for up to 4 USCSG personnel to attend the meeting in San Diego, funds to support workshop costs such as A/V, supplies, and other participant costs. USCSG can also provide webinar services for planning meetings and satellite meeting if needed.
- Illinois-Indiana Sea Grant is located at the University of Illinois in Urbana-Champaign and Purdue University in West Lafayette, Indiana, with staff in Chicago, Illinois and Calumet, Indiana as well. The satellite meeting would be hosted in Chicago, Illinois, which is where some potential partners and participants in this effort are located, including some of Illinois-Indiana Sea Grant's staff, EPA's Great Lakes National Program Office, Illinois Coastal Management Program, American Planning Association, and the Chicago Metropolitan Agency for Planning. Chicago is within driving distance for additional partners including the Midwestern Regional Climate Center, Illinois State Climate Office, National Weather Service Chicago and Lincoln Weather Forecast Offices, and a brief flight or train ride for NOAA's Great Lakes Environmental Research Laboratory (GLERL), NOAA's Great Lakes Integrated Science and Assessment (GLISA), and the American Society of Adaptation Professionals. Chicago is centrally located in the United States and Great Lakes region, making for easier travel for partners and Sea Grant programs in the Great Lakes and Northeast. Not only are many programs and partners within driving distance of Chicago, but there are two major airports and an efficient public transportation system for those that require air and other modes of ground transportation.

- *General Budget:* Illinois-Indiana Sea Grant will contribute facility and meeting costs in Chicago, Illinois, and staff time for Molly Woloszyn to complete planning and meeting logistics.

Requested Support from Interested Programs

Programs who offer to support this topic area will be asked to provide funds for at least one staff member to one of the satellite workshop locations above. Programs that wish to provide a higher level of support may also designate staff members to serve on the Planning Committee.

REFERENCE

McPherson, R., Gail, W., & Friday, E.W. (2012). State of the Weather and Climate Enterprise 2012. American Meteorological Society Commission on the Weather and Climate Enterprise. 34pp.
<https://www.ametsoc.org/cwwce/index.cfm/reports-and-studies/general-reports-and-studies/state-of-the-weather-and-climate-enterprise-in-2012/>

TIMELINE

	2017				2018							
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Form planning committee												
Arrange on-site logistics												
ID subsectors/agenda												
Hold workshop												
Synthesize input												
Draft 10-year Vision Plan												