

## Framework for Water Resources Visioning

The National Sea Grant College Program is well positioned to address fundamental issues related to water resources. These include, but are not limited to, changes in water availability and water quality, whether driven by physical mechanisms, chemical alterations, or biological processes. Given a deep network-wide investment in the science, outreach, and education connected with water resources, a coherent vision for how the National Sea Grant College Program will move forward to help the nation meet future water resource challenges is critical.

This topic merges the efforts of two extant groups within the Sea Grant network. One group has been proactively developing a partnership with the U.S. Geological Survey through the association of many directors with the Water Resources Research Institute program. A second meeting engaging Sea grant and USGS will be held in Portland, OR in October 2017. NOAA has recently made significant investment in the National Water Center in Tuscaloosa, AL and the recent addition of a Sea Grant extension liaison to that facility offers an opportunity for the national program to engage in research and outreach. The other group has developed strong capacity through the Sea Grant Emerging Contaminants Community of Practice (CoP) around water pollution, including pharmaceuticals, microplastics, and other emerging contaminants.

**Goal:** Identify Sea Grant's role in moving Water Resources-related topics forward through research, education, and outreach within the states and nationally.

**Objective:** By August 2018, a committee of Sea Grant staff will develop a white paper that documents Sea Grant's capacity to lead on water resources issues, specifically focused on these three topic areas: water quantity, water quality, and harmful algal blooms (HABs) and hypoxia.

**Outcomes:** The development of the white paper will:

- blueprint a robust 10-year vision promoting water resources research, extension and outreach
- facilitate better coordination of water resources projects throughout the Sea Grant network regionally and nationally and with partners such as USGS/Water Resources Centers
- strengthen partnerships among participating Sea Grant CoPs
- aid in securing additional funding for Sea Grant work in the areas of water quantity, water quality, and HABs/hypoxia

**Action Steps:**

- Convene a half-day planning meeting for those directors and staff already planning to be in Portland, OR, for the Communicators/Extension Leaders Network meeting. WISG, IISG, and PASG will facilitate a discussion on the scope of the white paper, which we propose will be composed of three chapters: water quantity; water quality; and HABs and Hypoxia. Within these topics, we see opportunities for leadership on subtopics by CoPs in the areas of emerging contaminants, USGS-SG linkages, Central Regional NOAA efforts on risk modeling for nutrient management, and others. The meeting will also be used to discuss linkages between Sea Grant and Water Resources Institutes.
  - We will meet on 10/2/17 from 2pm-6pm, at the Hilton, where a separate meeting of Pacific regional water resources issues will be held.

- Host a two-day visioning meeting in January 2018 to outline the chapters of the visioning document, finalize the expertise within Sea Grant programs needed to draft the document, and assign roles to the writing team. The leadership team will work together to merge high level concepts, with help from the NSGO.
  - The meeting will likely be held at the National Water Center in Tuscaloosa, AL.
- Host a two-day meeting in late April or early May 2018 for the writing team to share the draft document, work on necessary revisions, and finalize design.
  - Meeting location TBD at the January meeting.

**Background Information:**

- Work in water resources dovetails into all four of the Sea Grant focus areas: Healthy Coastal Ecosystems, Resilient Communities and Economies, Sustainable Fisheries and Aquaculture, and Environmental Literacy and Workforce Development.
- Water Quantity: Clean, affordable water is critical for human, animal, and environmental health and for industry. Climate change is increasing extreme weather events which can impact water supply. Due to projected population growth, as well as water shortages in some parts of the country, ensuring that adequate and reliable supplies of clean water are available will be a growing challenge.
- Water Quality: A majority of Sea Grant programs have active research and/or extension and education investments associated with emerging contaminants (ECs). From marine debris such as microplastics, to pharmaceuticals and personal care products, ECs are increasingly detected in marine and freshwater systems, drinking water, and more recently in oysters and higher trophic species like salmon in estuaries. Even with documented evidence of physiological, behavioral and bioenergetic changes caused by ECs, a dilemma remains regarding how much investment to make in these projects. The number of chemicals is vast and the study of the chemical and biological interactions can be expensive and time-consuming. Thus, programs struggle with questions such as whether limited Sea Grant funding spent on novel research of complex linkages is justifiable; or, what are the measurable impacts of knowledge transfer through extension programs and do these efforts lead to definitive societal actions?
- Harmful Algal Blooms and Hypoxia: When nitrogen and phosphorus are carried in runoff from city streets and farm fields or flows out of wastewater treatment plants, these beneficial nutrients can fuel algal blooms that decrease oxygen needed by aquatic plants and animals. In the Gulf of Mexico, nutrients washed down by the Mississippi River have created a hypoxic 'dead zone' that covers thousands of square miles. Algal blooms also lower property values, hinder recreation, and can threaten public health. In addition, nutrient pollution degrades drinking water quality and requires utilities to install costly treatment equipment.

**Roles:**

- WISG, IISG, and PASG will take the lead in chairing the leadership team and organizing the meetings. Specifically, Jim Hurley, Jen Hauxwell, and Moira Harrington (Wisconsin), Brian Miller, Laura Kammin and Sarah Zack (Illinois), and Marti Martz (Pennsylvania) would take the lead with others from the wider network on the coordinating team (see list below). With the team, we

would organize the January meeting and use input to create a white paper outline representing topics important to all the programs around the country.

- Participating programs will engage in a series of phone calls, two in-person meetings, and in the drafting and review of a visioning document resulting from these gatherings. We anticipate national participation from almost every Sea Grant program through attendance at the meetings.
  - The vision document will be divided into chapters representing the various sectors with program participants identified as section leads for each section. Interested parties should expect to dedicate 4-6 weeks' time over the course of the year to engage their subsection participants in drafting their vision for that sector. The section leads will also be responsible for making sure their team identifies means of integrating with other sectors with the help of the vision leaders.
  - All participants will be asked to assist with review of the final visioning document. Editing and design will be led by WISG, IISG, and PASG with those responsibilities to be outlined at the October meeting.
- We would encourage NSGO input in planning and in attending the meetings and in the formation and writing of the 10-Yr. vision in order to create a document that is as useful as possible to the entire Sea Grant network.

**General Resources:**

- The core budget will come from Visioning Funds to WISG, IISG, and PASG to lead the effort. We estimate approximately \$15,000 in total will be needed to cover venue costs, food, materials, salaries and publication of the vision document.
- There may be small registration fees to help defray some of the costs. Attendees should budget \$1,500 to 2,000 for travel and lodging at the meeting in January and \$1,500 to 2,000 for the meeting in April/May (please take into account your own program location when developing your budget and be aware that if your staff is not on the writing team, participation in the second meeting is optional).
- Given the breadth of the topic, the coordinating team is robust, with representation from across the network including extension, research, and education. We will finalize the coordination team list in October at the first planning meeting. The final team will ensure the report is prepared by August 2018.

**Timeline:**

Task	2017				2018							
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
Conference call with the project team to begin coordinating	x											
Host the planning meeting of leads		x										
Set the location and date of January meeting/ notify the national network		x										
Outline the major proposed sections of the 10-Yr Vision Statement					x							
Host the national meetings					x			x				
Session chairs submit final reports and summaries for their sessions									x			
Conference calls for the 10-Yr Vision Statement	x			x				x			x	
Drafts of vision statement out for review									x			
Revisions to the final vision statement report										x	x	
Layout, design, editing of white paper									x	x	x	
Submission of white paper and all project reports to the NSGO												x

**Team:**

**Topic Co-leads:**

Jim Hurley, Jen Hauxwell, and Moira Harrington (Wisconsin), Brian Miller, Laura Kammin and Sarah Zack (Illinois), and Marti Martz (Pennsylvania)

**NSGO:**

Rebecca Briggs

**Coordinating Team and Interested Programs:**

Alaska (Julie Matweyou and Sunny Rice)

California (Lisa Schiavinato)

Florida (Karl Havens)

Georgia (Katy Smith)

Hawaii (Mary Donohue)  
Lake Champlain (Elissa Schuett)  
Law Center (Catherine Janasie and Stephanie Otts)  
Louisiana (James Wilkins and Emily Maung-Douglas)  
Minnesota (Doug Jensen and Chris Filstrup)  
Mississippi-Alabama (Stephanie Otts)  
MIT (Michael Triantafyllou, Robert Vincent and Julie Simpson)  
New York (William Wise)  
North Carolina (Susan White)  
Ohio (Jill Bartolotta)  
Oregon (Shelby Walker)  
Pennsylvania (Marti Martz)  
Rhode Island (Dennis Nixon, Jennifer McCann and Julia Wyman)  
South Carolina (Rick DeVoe)  
USC (Linda Duguay and Phyllis Grifman)  
Washington (Kate Litle)  
WHOI (Diane Murphy and Jeffery Brodeur)