Sea Grant
University of Wisconsin

WISCONSIN SEA GRANT COLLEGE PROGRAM BRIEFING BOOK

National Sea Grant College Program Site Visit

PROGRAM MANAGEMENT AND ORGANIZATION

Wisconsin is a state with big waters. The Mississippi River cleaves the western border. The hard-working Wisconsin River, home to paper mills and power plants, bisects the state virtually top to bottom. The wild and lovely 169-mile St. Croix River shapes the culture of Wisconsin's northwest. At 215 square miles, Lake Winnebago is the largest lake of the state's more than 15,000 inland water bodies. The Fox River flows north, through some of the nation's most productive dairy country and the world's largest concentration of paper mills. That river empties into the bay of Green Bay, Lake Michigan. In addition to Lake Michigan, named for the Algonquian word Michigami meaning large body of water, the other big water touching Wisconsin is Lake Superior. It is so big, in fact, that it is the world's largest lake by surface area.

In Wisconsin, there is familiarity with our big waters, but we cannot say we know them. Not fully. There is much to consider in the stewardship of Wisconsin's Great Lakes and their broader ecosystems from physical, biological, chemical, geologic, economic and sociological standpoints. Plus, each scientific factor interacts with the others — and is leavened by human activities — to create a complexity that is ever changing.

That is why Wisconsin Sea Grant takes its responsibility for researching the Great Lakes, and then translating that research through extension and education, as an honored charge. From that charge, the program also embraces a robust analysis of its work to document identifiable results that will be illuminated throughout this briefing book.

Lakes Michigan and Superior are part of a regionally interconnected freshwater system, the largest in the world, supporting one of the world's largest regional economies. In fact, if the Great Lakes region were a country, its gross domestic product would be $5.8 trillion, according to a 2017 study prepared by the Council of the Great Lakes Region, a council of more than 250 businesses, non-governmental organizations and government leaders in the U.S. and Canada.

Yet with all the promise that rich resources and economic endowment would suggest, challenges remain. They include aquatic invasive species taking a toll on commercial fish harvest, emerging contaminants, coastal hazards, climate change and the need to train the next generation of water leaders, as well as ensuring equity and diversity in our workforce and in response to a diverse culture. Not only are there state jurisdictions but also the international relationship with Canada.

To meet these challenges, Wisconsin Sea Grant is equipped with a programmed team approach to formulate four-year strategic blueprints and work plans, fulfilling its mission — the sustainable use of the Great Lakes through research, education and outreach — and its vision — thriving coastal ecosystems and communities. The program does so through an academically grounded, locally relevant, honest-broker approach offering evidence-based management strategies infused with consideration of diversity and inclusiveness.

Wisconsin Sea Grant came to the University of Wisconsin-Madison campus on Dec. 1, 1968. It achieved college status in 1972, the first in the Great Lakes region. In 1978, the University of Wisconsin System transferred responsibility for the management of the system-wide and statewide Sea Grant College Program to UW-Madison. In a memo to the then-advisory council, along with the director of the program, UW-Madison Chancellor Irving Shain asked the council to assist him in the management of the program.

Chancellor Shain continued in his memo by saying that the Wisconsin Sea Grant Program includes activities in research, education and advisory services in the area of Great Lakes and marine resources and the environment and that he encouraged the Sea Grant program director and the council to maintain the policy of supporting a high-quality and responsive program with broad faculty guidance, drawing on the expertise of all appropriate institutions in the state and with wide public input. Such a commitment remains 51 years later.

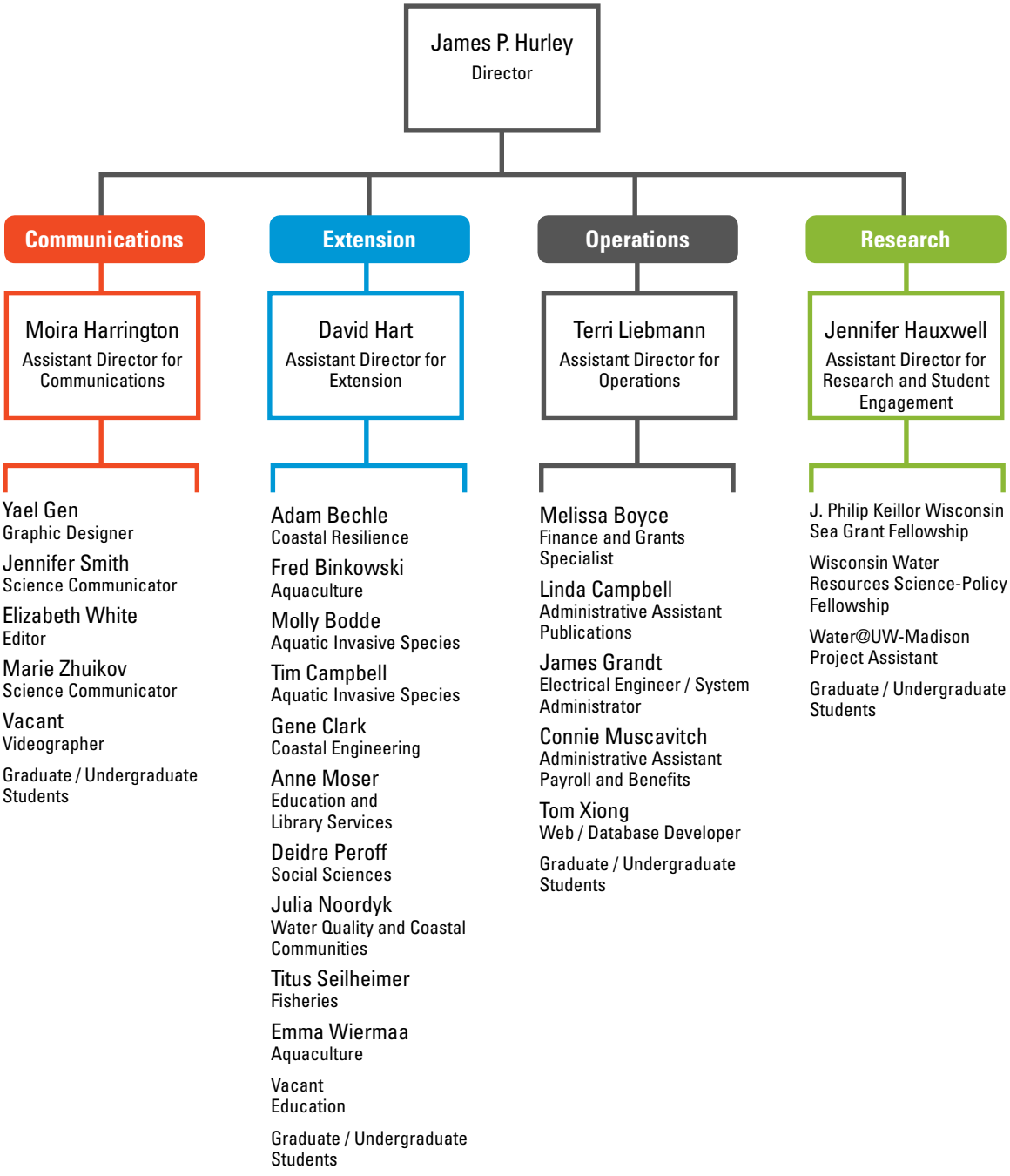
Wisconsin Sea Grant is a part of the Aquatic Sciences Center (ASC) on the UW-Madison.campus. ASC has existed since 1998, when the University of Wisconsin Water Resources Institute (established in 1964) and Sea Grant combined to form a single entity within the Graduate School, now known as the Office of the Vice Chancellor for Research and Graduate Education (OVCRGE).

ASC is a means to consolidate water-related research, education and outreach in a single center. It allows for administrative efficiencies while also addressing the state's water concerns in a more comprehensive manner. The center receives federal and state funding, along with funding from appropriate private sources. Nationwide, Wisconsin, Hawaii, Lake Champlain/Vermont, North Carolina and Illinois-Indiana are alone in merging their Water Resources Institute and Sea Grant operations.

As the world comes to recognize the increased value of freshwater resources, ASC's work will maintain its position at the forefront for policy makers, decision makers, resource managers and the public — and its value will only increase.

Collaboration and formal partnerships within Wisconsin and regionally are a key component of the multifaceted and multidisciplinary Wisconsin Sea Grant program about which the current UW-Madison chancellor, Rebecca Blank, has said, "(Sea Grant) fosters research that is essential to protecting and enhancing our coasts, cultivates educational opportunities that inspire teachers and engage students, involves communities and supports a strong Wisconsin economy."

The vice chancellor for research and graduate education who served from 2015 to 2018 — and the vice chancellor on the university's organizational chart to whom the Wisconsin Sea Grant director reports — called ASC, along with the other 18 centers under her jurisdiction, "Jewels in the crown."



Sea Grant
University of Wisconsin

Organizational Chart
January 2019

Wisconsin Sea Grant functions as an organization with a flat management structure to draw from the individual strengths of five people to achieve collective excellence as demonstrated through identifiable results. Four assistant directors provide the director with leadership and advice based on their professional skill sets.

The managers are:

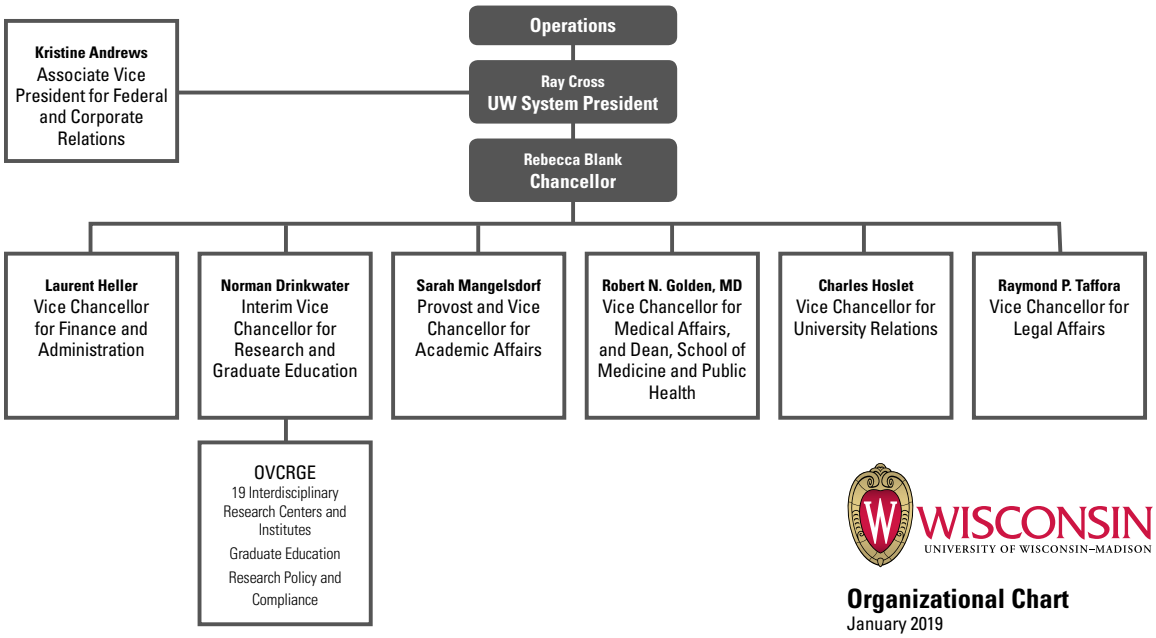
James Hurley, who assumed the directorship of Wisconsin Sea Grant on May 1, 2012, holds a Ph.D. in water chemistry from the University of Wisconsin-Madison. In addition to his director position, Hurley holds a 25 percent faculty appointment in the Department of Civil and Environmental Engineering at the University of Wisconsin-Madison. He has published more than 65 research articles in his field. Hurley chairs the graduate program in Environmental Chemistry and Technology and maintains an active research program as well as teaching graduate-level courses. His recent research has centered on cycling of mercury in the Great Lakes, especially with regard to factors affecting bioaccumulation in plankton and fish. He uses stable isotopic techniques to study transport and transformations of trace metals in the environment. Hurley was a member of the U.S. Environmental Protection Agency Science Advisory Board, which developed a risk assessment for U.S. mercury emissions in 2011. Throughout his time with Sea Grant, Hurley has chaired several regional and national Sea Grant committees. Most recently, he served as president of the Sea Grant Association from 2017 to 2019. Hurley also served on the 2018-22 Sea Grant National Strategic Planning Committee.

Moira Harrington is the assistant director for communications, directing the creation of materials to promote science literacy, and overseeing media relations and social media for both Wisconsin Sea Grant and the Water Resources Institute. Harrington also assists with external relations. She is a former reporter for newspapers, magazines and a statehouse news service. She worked for Wisconsin's statewide public television broadcasting system and as the state director and press secretary for former U.S. Sen. Russ Feingold of Wisconsin. Harrington holds Bachelor of Arts degrees in journalism and in political science from the University of Wisconsin-Madison. She served as chair of the Sea Grant Communicators Network from 2016 to 2018.

David Hart is the assistant director for extension. He directs a staff of 10 extension specialists who extend coastal science throughout Wisconsin, the Great Lakes region and beyond. He joined the Wisconsin Sea Grant Extension team as a scientist in 2002, after working with Sea Grant for eight years on coastal geographic information systems (GIS) applications through the University of Wisconsin-Madison Land Information and Computer Graphics Facility. Hart holds adjunct faculty status at the University of Wisconsin-Madison. As one of the few Sea Grant GIS specialists in the country, Hart provides assistance to local governments and other coastal constituents in the areas of mapping, community planning, coastal hazards, land use and climate adaptation. Hart holds a masters in urban and regional planning from the University of New Orleans and a Ph.D. in land resources from the University of Wisconsin-Madison.

Jennifer Hauxwell is the assistant director for research and student engagement. She oversees the research portfolios of both Sea Grant and the University of Wisconsin Water Resources Institute, as well as an engagement program for the hundreds of students and post-graduate scholars supported through those two programs. Hauxwell joined the Wisconsin Department of Natural Resources in 2001 as a research limnologist. From 2008-14, she served as chief of the Fisheries and Aquatic Sciences Research Section, leading a team of researchers conducting applied work on Wisconsin's inland aquatic resources and the Great Lakes. She holds a Ph.D. in aquatic ecology from Boston University's Marine Program at the Woods Hole Marine Biological Laboratory and a Bachelor of Science degree in biology from the University of Michigan. Her research has focused on the effects of non-point source nutrients and invasive species on aquatic systems, and she has worked in temperate lakes, wetlands and estuaries as well as subtropical springs.

Terri Liebmann is the assistant director for operations. She handles the day-to-day administrative management, financial oversight and direction of human resources activities for both Wisconsin Sea Grant and the Water Resources Institute. Liebmann has an associate degree in supervisory management from Madison Area Technical College and a Bachelor of Science degree in management from the University of Wisconsin-Stout. She is the current two-year chair of the Sea Grant Fiscal Officers Network.



At the core of Wisconsin Sea Grant's management is a commitment to diversity, equity and inclusion. That commitment guides job vacancy recruitment and retention and permeates all operating philosophies and functions. The program itself has an active four-person committee devoted to these principles, highlighting campus-wide opportunities in this area along with its own planning and conduct of climate-enriching experiences. Additionally, one of the program's staff members serves on a larger campus committee that strives to create inclusive environments providing opportunities for all individuals through recruitment, retention, climate, mentoring and networking.

In order to ensure sustained excellence, each member of the management team remains in constant contact with peers on both strategic and tactical matters via email, face-to-face meetings and less

formal conversations and phone calls. The team meets at least monthly and more frequently should the need arise.

The director conducts regular meetings with the OVCRGE and other center directors so that the university's administration is aware of and supportive of Wisconsin Sea Grant's initiatives.

The Wisconsin Sea Grant operations team meets monthly and more frequently as the need arises. The extension team pulls together staff from the main office in Madison and field staff at the University of Wisconsin-Superior; University of Wisconsin-Green Bay; University of Wisconsin-Green Bay, Manitowoc Campus; and University of Wisconsin-Milwaukee — all coastal campuses. Those meetings are bi-weekly conference calls and the full extension team gathers for one or two in-person meetings each year. The communications staff also conducts a bi-weekly conference call since one of the team members is based at the University of Wisconsin-Superior. The communicators convene in person at least once annually for a two-day experience involving an immersion into a Sea Grant project, along with other informal skill sharing. Communications staff and extension staff regularly join each other's bi-weekly meetings, an effective means to integrate more fully the work of the two groups of professionals who rely on shared knowledge to respond more accurately to stakeholders needs. All-hands meetings for the entire Sea Grant staff take place at least once a year and more frequently as warranted.

Each month, the assistant director for communications organizes the production and distribution of a staff electronic newsletter. It details recent work activities and upcoming ones. Perhaps more importantly, though, staff members can share personal news, if they choose, through this forum. Learning about such milestones as births, graduations, hobbies and accomplishments outside of the daily work setting serves to bind the staff more tightly and contributes to a respectful and productive workplace.

Every staff member is encouraged to engage in at least one annual professional development experience. Funding for expenses is provided by the program. Because staff members are located on campuses within the highly ranked University of Wisconsin System, they can avail themselves of learning opportunities like seminars and lectures, sometimes literally right outside their offices. Ensuring that each staff member is highly trained and competent in their field further guarantees they will make strong collaborators and be best equipped to meet the needs of stakeholders.

Support for employees is one priority, as is rallying fiscal support for Wisconsin Sea Grant efforts from non-federal sources such as the Wisconsin State Legislature, which matches every two dollars that come into the program with one dollar in state allocation. This funding is administered through



the OVCRGE on the Madison campus, which also provides reliable bridge funding if federal dollars are slow to be disbursed. The further sources from which Wisconsin Sea Grant draws include state agencies, other federal agencies and business and industry. Additionally, the federal and Wisconsin governments support the Water Resources Institute, resulting in about $540,000 annually to the Aquatic Sciences Center.

Support for Wisconsin Sea Grant also comes in the form of advice from two external bodies. The first is the Wisconsin Sea Grant Advisory Council. Council members bring a diversity of voices to the council born of varied geographic and professional backgrounds. Members are appointed to annual terms by the UW-Madison chancellor and come together for council meetings at least twice a year. They maintain contact with each other and the program throughout the year in an as-needed fashion.

The council advises on the preparation of the program's request for proposals and the strategic plan, reviews and advises on the finalization of those important documents and provides input throughout the life of the strategic plan to ensure it remains responsive to Wisconsin needs. It also offers a Wisconsin perspective on the research portfolio during its rigorous determination process.

Wisconsin Sea Grant does not employ term limits for its council members because it feels that to artificially rotate a valuable and contributing member off the council is detrimental to the efficacy of the program. Instead, Wisconsin Sea Grant staff and the council chair, with diligence, review the contributions of existing members and seek out the interest of and participation from new members who can bring new perspectives. Thus, in this review period, five members have been added and five have left the council. Details on the current 15-member council can be found in Appendix A.

The second external advisory body is the Committee on Outreach and Education, a 19-member group of people who dive deeper into the issues relevant to topics on which the extension, communications and education staff engage. These people are invited by staff to participate, and committee members contribute to the formulation of Wisconsin Sea Grant's work plan and the rhythms of it as it plays out over the four-year period of implementation. A list of committee members is included in Appendix A.

In addition to face-to-face meetings with these two advisory bodies, Wisconsin Sea Grant captures the insights of these collective resources through phone and email conversations. All council and committee members receive Wisconsin Sea Grant's quarterly newsletter, the Aquatic Sciences Chronicle, along with an email push alert each time a story is published to the program's online press room. Those push alerts frequently generate feedback to Wisconsin Sea Grant staff with additional thoughts on how to share the information more broadly. Alternatively, the council or committee member poses an inquiry to learn more about Wisconsin Sea Grant activities to then better relay information to their subset of stakeholders. This feedback loop means the program is always learning about and addressing Wisconsin and Great Lakes' needs.

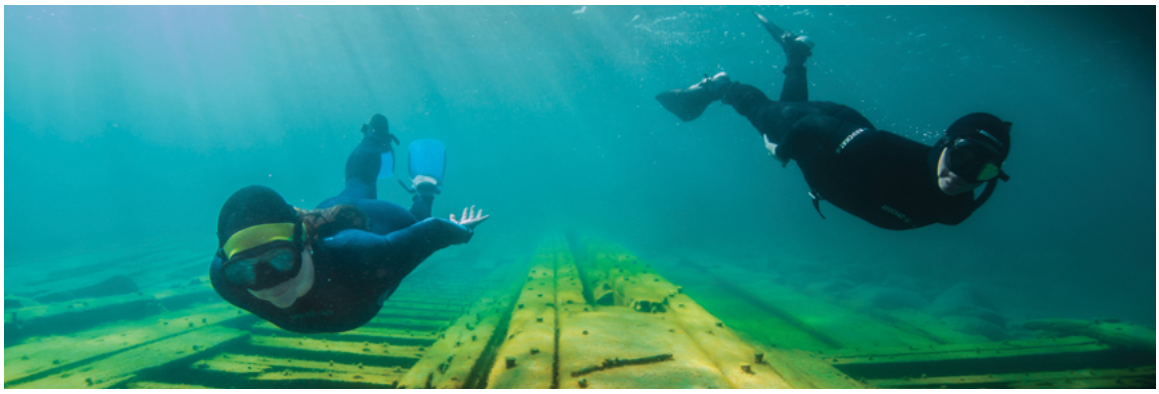
Recruiting Talent

Wisconsin Sea Grant's research activities begin with a biennial request for pre-proposals that is driven by its strategic and implementation plans and includes input from the Advisory Council and the Committee on Outreach and Education.

Wisconsin Sea Grant funding expands the body of Great Lakes knowledge because work is both published at a prolific level and appears in high-impact journals.

2014-17 Journals With the Most Wisconsin Sea Grant Publications

Journal Title	Number of publications	Journal Impact Factor
Journal of Great Lakes Research	17	2.28
Environmental Toxicology and Chemistry	7	3.00
PLOS ONE	7	2.86
Applied and Environmental Microbiology	5	3.63
Toxicological Sciences	5	4.39
Ecological Applications	3	4.46
Journal of Geophysical Research: Oceans	3	2.71
Aquatic Toxicology	2	3.94
Canadian Journal of Fisheries and Aquatic Sciences	2	2.18
Ecology	2	4.60
Ecosphere	2	2.60
Environmental Microbiology	2	4.84
Environmental Science & Technology	2	6.60
Florida Entomologist	2	0.89
Frontiers in Microbiology	2	4.08
Gene	2	2.58
Journal of Experimental Biology	2	2.78
Journal of Fish Biology	2	1.72
Microbial Ecology	2	3.47
North American Journal of Fisheries Management	2	1.03
Science of the Total Environment	2	4.80
Scientific Reports	2	4.25
Transactions of the American Fisheries Society	2	1.59
Water Research	2	7.19



Publications Per Year	
2010	20
2011	19
2012	9
2013	26
2014	19
2015	22
2016	16
2017	12
Average	18
Total	143

The program also leverages research dollars to address regional research topics. Along with Illinois-Indiana Sea Grant, Wisconsin Sea Grant jointly solicits projects. It also releases a separate joint call along with the Minnesota Sea Grant Program. For the 2020-22 cycle, Michigan Sea Grant is participating in the collaborative call along with Illinois-Indiana.

During the biennial research cycle, email and direct-mail messages requesting pre-proposals are distributed to more than 1,000 addresses. Pre-proposal information is also accessible through seagrant.wisc.edu, which according to tracking software Webtrends attracts more than 1.5 million visitors each year. The material is also shared through the program's social media platforms Twitter and Facebook that reach thousands of people. Finally, Wisconsin Sea Grant offers a webinar for prospective investigators. All these efforts are directed toward faculty members (or persons having principal investigator status) at Wisconsin colleges or universities. Wisconsin has 33 public and private four-year institutions of higher learning and 29 two-year colleges.

External reviewers representing expertise in the four focus areas and special calls are selected to serve on a technical panel and are each assigned several pre-proposals for which they are lead reviewers. Technical panel members present and discuss each proposal at a face-to-face session. In this review period, the composition has included those who hold positions in academia, resource management agencies and other Sea Grant programs.

The program's leadership team and advisory council also attend the session and act as resources. It should be stressed that attending council members do not play a role in ranking the pre-proposals but are poised to discuss the relevancy of pre-proposals to Sea Grant's strategic plan.

At the panel-review session, pre-proposals are categorized into three groups based on the discussion and final recommendation of the technical panel: 1) an invitation to submit a full proposal, 2) an invitation to contact the director for further exploration and 3) not encouraged. Even if not encouraged, however, investigators are still free to submit a full proposal.

A proposal workshop is then conducted for those considering submission. The intent is to help potential investigators write better proposals, get to know Wisconsin Sea Grant, know what other researchers are submitting, and discuss extension and education intersections.

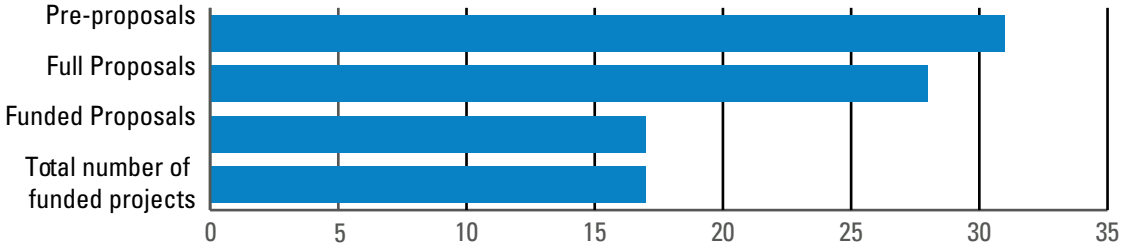
Another external peer review process commences when the full proposals are submitted. At this stage, there are a minimum of three external reviewers per proposal, followed by an external

technical review panel that both assesses the external reviews and rates proposals based on relevancy to the strategic plan. The composition of the panel has included those who hold positions in academia, resource management agencies and other Sea Grant programs. Once again, the program's advisory council and leadership team attend the session and act as resources for panelists.

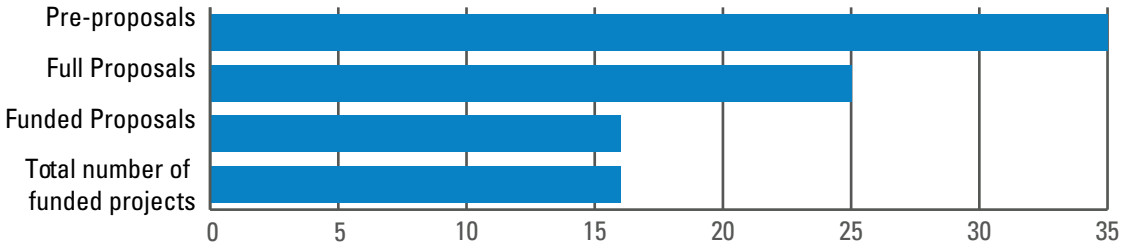
Because education submissions differ from traditional research proposals, a separate panel of education specialists from around the Great Lakes Basin reviews those packages, resulting in funding for up to three in each funding cycle. Education projects are typically capped at $25,000 annually. Additionally, separate panels of social scientists are convened. Wisconsin has led the formation of a shared social science panel for the Great Lakes states to best draw out the insights from the social science field. In addition, separate panels are convened to assess the proposals as part of a joint call with Illinois-Indiana Sea Grant.

The charts below indicate the number of submitted and funded projects during the review period.

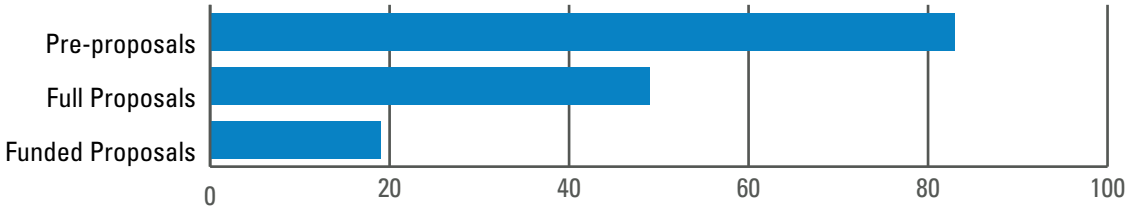
2014-16 Research Cycle — Participating Institutions



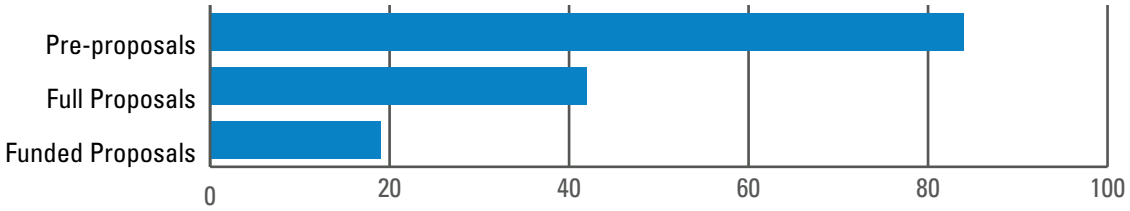
2016-18 Research Cycle — Participating Institutions



2014-16 Research Cycle



2016-18 Research Cycle



Details on all current and previously funded projects for this review period can be found in the "Program Information" section of aqua.wisc.edu/publications in a series of directories of projects and principal investigators.

STAKEHOLDER ENGAGEMENT

Wisconsin Sea Grant's research portfolio is enriched by its application to real-world settings through stakeholder engagement, drawing on partnerships and using a seasoned extension and education staff, along with the application of strategic communications. Wisconsin Sea Grant forges numerous partnerships, an estimated 320 in all, and here is a list of some of the most active:

Association of State Floodplain Managers

Bay Lake Regional Planning Commission

Center for Great Lakes Literacy

Discovery World

East Central Wisconsin Regional Planning Commission

Great Lakes Indian Fish and Wildlife Commission

Great Lakes Fishery Commission

Ho-Chunk Nation

Illinois-Indiana Sea Grant

Lake Champlain Sea Grant

Lake Superior National Estuarine Research Reserve

Michigan Sea Grant

Minnesota Coastal Management Program

Minnesota Department of Natural Resources

Minnesota Pollution Control Agency

Minnesota Sea Grant

National Park Service

Nelson & Pade Inc.

NEW Water

New York Sea Grant

Northwest Wisconsin Regional Planning Commission

Ohio Sea Grant

Pennsylvania Sea Grant

Port Washington, city

Riverence LLC

Southeastern Wisconsin Regional Planning Commission

Superior, city

Superior Fresh

U.S. Army Corps of Engineers

Wisconsin Aquaculture Association

Wisconsin Association for Floodplain, Stormwater, and Coastal Management

Wisconsin Coastal Management Program

Wisconsin Commercial Ports Association

Wisconsin Department of Natural Resources

Wisconsin Department of Transportation

Wisconsin Harbor Towns Association

Wisconsin Historical Society

Wisconsin Wastewater Operators Association

Wisconsin Waterfowl Association

In broad terms, Wisconsin Sea Grant stakeholders include:

Aquaculturists

Charter fishing organizations

Commercial and recreational fishers

Commercial shippers

Culinary instructors and professionals

Educators

K-12 and post-secondary students

Lifelong learners

Local, state, regional and national officials and agencies

Marina operators

Port managers

Recreational boaters

Resource managers

Seafood retailers

Joining forces with partners to meet stakeholder needs has resulted in numerous successes. Here are only a few:

Through its leadership of the NOAA Coastal Storms Program in the Great Lakes region, Wisconsin Sea Grant conducted a survey of Great Lakes planners and resource managers. The group identified stormwater runoff as contributing to four of the top five coastal storm hazards affecting coastal communities. In addition, 79 percent of survey respondents rated "local ordinance, zoning and building code assessment and analysis maps" as a top need to address coastal storm hazards. This feedback prompted Wisconsin Sea Grant to create a code audit workbook to foster implementation of green infrastructure and provide extension service. Four Great Lakes communities, so far, have changed policies. Many more communities have expressed an interest.

A Wisconsin Sea Grant staff member used her social science expertise to shape an education campaign that is part of a $2.5 million plan to improve water quality at a popular Milwaukee County beach, South Shore, which ranked as one of the nation's worst by the Natural Resources Defense Council in threats to public health. In 2014, MillerCoors pledged $500,000 to help implement the improvement plan. In fall 2018, the county announced plans to move South Shore Beach 150 meters south of its current site, a location that Sea Grant beach contamination research has shown as having 40 times better water quality.

Wisconsin Sea Grant, in close collaboration with the National Park Service and based on research it funded, ensures visitor safety through Sea Caves Watch, an online system that alerts kayakers to possible unsafe wave conditions at popular sea caves at the Apostle Islands National Lakeshore. Four kayakers died of hypothermia and a group of 31 kayakers had to be rescued in the seven years before the wave-observation project was in place.

Supporting Education

Wisconsin Sea Grant operates in a state with a strong tradition of educational excellence. It's the state that brought kindergarten to this country in 1856. That commitment to the value of learning carries on to the contemporary K-12 system and into the reaches of higher education. Wisconsin Sea Grant education specialists tap into every level of this broad and diverse structure to enhance environmental literacy at all ages, including lifelong learners.

The program has supported 350 students through funded projects in this review period and has sent six talented young people into the **John A. Knauss Marine Policy Fellowship Program**.

Additionally, one member of Wisconsin Sea Grant's leadership team holds the title of assistant director for research and student engagement, allowing her to focus on recruiting talent for postgraduate experiences leading to workforce development. Through this role, she has undertaken an energetic effort to enrich existing collaborative work with state agencies, such as the Wisconsin Geological and Natural History Survey, Wisconsin Department of Natural Resources and the Wisconsin Department of Administration's Wisconsin Coastal Management Program to form a state fellowship program modeled on the Knauss Fellowship.

Collaboratively, Wisconsin Sea Grant and state agencies identify a critical and currently unmet need for the state of Wisconsin — one that an enterprising post-graduate student may tackle. In turn, that student, acting in a yearlong fellowship capacity, gains mentoring and the opportunity to work side-by-side with professionals in their chosen field, gathering valuable real-world experience.

It pays off, for both the fellow and the state of Wisconsin. The 2017 **J. Philip Keillor Coastal Management Fellow** wrote a grant to the NOAA Coastal Resilience Grants Program and secured an $840,000 grant in the 2017 competition, the only grant to come to the Great Lakes region. It is now enabling Lake Michigan coastal communities to better devise resiliency strategies in the face of near-record-high water levels and the impact of those levels on infrastructure and natural features.

In all, from 2014-17, there were six state fellows. Furthermore, this dedication to student mentoring spawned a successful application for a $1.2 million training grant through the U.S. Environmental Protection Agency that will draw from the talents of UW-Madison undergraduate, graduate and doctoral students to serve the needs of environmental health at the Mid-Continent Ecology Division located in Duluth, Minn. The first of this corps of students and post-doctoral trainees undertook his new duties in 2018.



COLLABORATIVE ACTIVITIES

Collaboration With Other Sea Grant, NOAA and Additional Agency Partners

Wisconsin Sea Grant has close ties with the Lake Superior National Estuarine Research Reserve, housing two staff members there and sharing a third, an administrative support staff member. The Wisconsin Sea Grant communications professional located there assists in planning for, promoting and conducting an annual science summit. The Wisconsin Sea Grant director serves on the reserve's research advisory board.

The director also serves on the advisory council of the NOAA Wisconsin Coastal Management Program and the Scientific Advisory Council for the Cooperative Institute for Meteorological Satellite Studies at the University of Wisconsin-Madison. Other Sea Grant staff members assist with the review of coastal management grant proposals to ensure top-quality and efficacious work is funded. The Coastal Management Program and Wisconsin Sea Grant co-mentored a 2016-18 NOAA Coastal Management Fellow, along with two in-state fellows focused on coastal engineering.

Conflicts on the use of Lake Superior are not uncommon and in recent years, one conflict has revolved around so-called ghost nets. These are tribal fishing nets that had been anchored to the lakebed but break loose and drift. This poses a danger for recreational anglers whose fishing gear may become entangled in the nets. The nets are also a form of marine debris. Wisconsin Sea Grant secured a NOAA Marine Debris grant, and it facilitated bringing together the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), Wisconsin Department of Natural Resources and a sport fishing group to find ways to raise awareness about the ghost nets, resulting in net recovery and safer waters. For example, from 2014-15, 5,000 feet of net was recovered. GLIFWC also credited Wisconsin Sea Grant for brokering the relationship amongst these entities since trust has not been a hallmark of past interactions.

A perplexing and expensive problem had been plaguing the twin ports of Duluth and Superior for many years when the Minnesota and Wisconsin Sea Grant programs teamed up to determine the cause of accelerated corrosion on steel harbor infrastructure. Beginning in the early 2000s, the programs funded research. In succeeding years, investigations continued for the means to mitigate the corrosion. Thanks to Sea Grant-inspired solutions, from 2014-17, the ports saved $16.2 million in infrastructure replacement costs because special coated paints and metal jackets were affixed to steel infrastructure. Further, the Wisconsin Department of Transportation's Harbor Assistance Program now requires all granted projects within the program to use this Sea Grant-determined protection, so Wisconsin Sea Grant affected a policy change. Finally, the harbor experience has also influenced infrastructure solutions aside from harbors. A heavily trafficked bridge spanning a waterway in Madison, Wis. — more than 127,000 vehicles a day cross it — has benefited from this infrastructure protection.

Freshwater science and Great Lakes learning among K-12 learners has roots in the knowledge of K-12 educators. The Wisconsin and Minnesota Sea Grant programs have for two years offered

a weeklong shipboard science training for teachers from both states aboard a replica 18th century schooner. Teachers report using their learning as they shape curriculum. Teachers have also forged mentoring relationships, as more seasoned Great Lakes educators offer their support to less-experienced individuals. They also find the means to connect their classrooms remotely to share datasets and learning, despite geographic separation. Funds for the workshops have come from the Center for Great Lakes Literacy as well as the Wisconsin Coastal Management Program.

These narratives expound upon just a fraction of numerous instances of Wisconsin Sea Grant collaboration with other Sea Grant, NOAA and additional agency partners. Further examples can be found in the 80 impacts drawn from the Planning, Implementation and Evaluation Resources system that are included in the full set of materials for the site visit team. Others will be more deeply explored during the site visit itself.

Collaboration on Regional/Multi-Program Projects

In 2014-17, Wisconsin Sea Grant participated in 58 regional/multi-program projects touching on all aspects of Sea Grant's focus areas in ecosystem health, resiliency, fisheries and aquaculture, and environmental literacy and workforce development. To illustrate a few:

Wisconsin Sea Grant and the NOAA Wisconsin Coastal Management Program supported an in-state fellow who contributed to the development of a new Great Lakes meteotsunami NOAA warning system for the Great Lakes region, expected to be fully implemented in 2019 in collaboration with the Great Lakes Environmental Research Laboratory. Meteotsunamis are storm-borne events that cause high waves and have led to extensive property damage and even deaths in the region, most notably in 1929 when 10 people were killed at a Michigan state park.

From 2015-16, Wisconsin Sea Grant dedicated a full-time videographer to produce a video, go.wisc.edu/814548, commemorating the 50th anniversary of the National Sea Grant College Program, which also drew on the talents of many individuals housed at other Sea Grant programs, the National Sea Grant Office and the National Sea Grant Advisory Board.

Wisconsin Sea Grant, in partnership with all the Great Lakes Sea Grant programs, enlisted the forces of fishing tournament organizers and professionals to help fight the spread of aquatic invasive species (AIS) in Great Lakes waterways, resulting in attitude and behavior changes: More than 1,000 AIS pledges were collected from participants in 13 states. Of those who signed the pledge, a follow-up was posed: "Has the pledge changed your behavior?" Seventy-five percent of respondents indicated yes.

Wisconsin Sea Grant distributed beach safety equipment to six Wisconsin beaches with a history of rip currents, many without lifeguards or safety equipment available to the public. The work was part of a larger project involving the National Weather Service, the NOAA Wisconsin Coastal Management Program and Sea Grant programs in Ohio, Michigan, Minnesota and Illinois-Indiana. This work was funded through the NOAA Coastal Storms Program, which Wisconsin Sea Grant led.

Success in Sea Grant National Competitions

- Six Knauss Fellows came from Wisconsin during this review period.
- In collaboration with the Lake Superior National Estuarine Research Reserve, Wisconsin Sea Grant conducted an ecosystems service valuation workshop. That workshop was funded through a successful 2015 grant application to NOAA/NSGO. Others involved in the effort were Minnesota Sea Grant, the Fond du Lac Band of Lake Superior Chippewa, University of Minnesota Duluth, University of Wisconsin-Superior, Wisconsin Coastal Management Program and the U.S. Environmental Protection Agency.


- Through a NOAA aquaculture competition, a Wisconsin project investigator secured funds to increase the efficacy of raising yellow perch for consumer markets.
- Wisconsin Sea Grant successfully secured and leveraged a visioning grant and staff members participated in seven of the 10 national visioning exercises. The program also co-led the Water Resources Vision Team.
- Wisconsin Sea Grant, along with the Minnesota and Michigan Sea Grant programs, has been funded by a Great Lakes Restoration Initiative grant through the National Sea Grant Office and the NOAA Office of Coastal Management to create outreach materials related to wild rice. The grant was awarded just outside of this reporting period but is based on planning work that occurred during the 2014-17 time period.
- In this reporting period, aquaculture researchers in Wisconsin did preparatory work on a 2018 grant submission for aquaculture and were successful with an award to look at improving Atlantic salmon husbandry.

PERFORMANCE

Leadership

In both academic and practical ways, Wisconsin Sea Grant is recognized as a leader in freshwater science, engineering, education and extension services in the Great Lakes region as well as in its home state, which includes 105 coastal communities. This leadership results from a strong research enterprise and talented staff, who currently play and have played roles, often primary ones, on an array of local, regional, national and international bodies. Also of note is that Wisconsin Sea Grant staff members have taken on responsibility for leadership within the national Sea Grant Network during this review period — the director as the Sea Grant Association president, the communications lead as the chair of the Communicators Network and the assistant director for operations as the vice-chair of the Fiscal Officers Network. A full list of staff service is included in Appendix B.

Appendix C provides a list of awards conferred on the program in this review period, further evidence of the accomplishments of Wisconsin Sea Grant as recognized by colleagues and stakeholders for efforts in research, outreach and communciations.

Productivity

Wisconsin Sea Grant fully embraces an investment in each of the four national focus areas through its research, education and outreach arms. In this review period and in addition to the foregoing narratives on collaboration and stakeholder service that highlight progress toward the goals within the 2014-17 Wisconsin Sea Grant Strategic Plan, here are further stories demonstrating such progression and resulting in significant contributions to society through advancements in science and technology.

Healthy Coastal Ecosystems

In this review period, the program funded 20 research projects in the Healthy Coastal Ecosystems Focus Area, along with 19 formal outreach initiatives. This has led to addressing the Wisconsin Sea Grant Strategic Plan's objectives of a greater understanding of ecosystems, as well as their protection, enhancement or restoration. These objectives also mirror those of the national performance measures and metrics.

With regard to the performance measures on acres of habitat restored, the national goal is 497,445 annually and Wisconsin Sea Grant contributed to that figure with 2,407 acres over the four-year reporting period. These reflect acres of waterways cleaned up and the beneficial use of dredged material. The other national performance measure in this focus area is related to the number of resource managers who use an ecosystem-based approach to managing land, water and living resources due to Sea Grant activities. There is no national annualized target, but for Wisconsin, the years break down as follows: 2014, 230; 2015, 161; 2016, 518; and 2017, 537.

Here are two expanded examples of work in this focus area:

Wisconsin Sea Grant-supported work discovered specific kinds of bacteria methylate mercury in the water column of freshwater lakes, not only in the sediment, which is a radical new way of understanding the production of this potent neurotoxin. The finding has implications for mercury levels in the entire food web and human health, which is affected by the amount of mercury in the environment. In essence, there could be a lot more of the element accumulating in fish consumed by people than previously understood.

Rising from the waters of Green Bay is a rebirthed chain of barrier islands constructed of material dredged from the shipping lanes serving the Port of Green Bay. The 240 acres of island restores land washed away during 1970s storms, avoiding construction of expensive storage facilities. The islands and additional 1,400 acres of wetlands that are being created are also providing homes for birds like the endangered piping plover and Forster's tern and threatened reptiles such as Blanding's and wood turtles.

Resilient Communities and Economies

In this review period, the program funded nine research projects in the Resilient Communities and Economies Focus Area, along with 17 formal outreach initiatives. This has led to addressing the Wisconsin Sea Grant Strategic Plan's objectives, which jibe with those of the national plan's performance measures and metrics. The objectives include development of vibrant and resilient coastal economies, communities using comprehensive planning to make informed strategic decisions, improvements in Great Lakes coastal water resources sustain human health and ecosystem services and resilient coastal communities adapting to the impacts of hazards and climate change.

In terms of the national metric on the number of communities implementing sustainable economic and environmental development practices and policies as a result of Sea Grant activities, Wisconsin Sea Grant reported 12 and 13 for 2016 and 2017, respectively. In the two prior years of the review period, it was two each.

Wisconsin Sea Grant far exceeded the other national performance measure — communities implementing practices to prepare for hazards. For that measure, the annual national target averaged per program is six. Wisconsin Sea Grant totaled 139 during this period.

Here are two expanded examples of work in this focus area:

Over the last four-plus years, lakes Michigan's and Superior's water levels have been steadily rising, increasing bluff erosion, eradicating beaches and toppling structures into the waves. Wisconsin Sea Grant has responded in several ways. Program-funded researchers built a device

that accurately monitors bluff stability. Wisconsin Sea Grant's coastal engineer co-organized property-owner information workshops, met one-on-one with owners to offer coastal design engineering assistance and provided guidance so owners could hire private engineers and consultants to install shoreline erosion-control structures. Finally, the program convened three meetings for the public to gather input on approaches to the conditions, and one meeting with local officials. These efforts laid the groundwork for the successful NOAA Coastal Resilience grant Wisconsin Sea Grant received in 2017.

There are six ports on Wisconsin's Great Lakes, including the nation's largest inland port, Duluth-Superior, which move grain, coal, raw materials for construction, and more, to waiting markets to further Americans' ingenuity and progress. The ports require navigable channels, which often means dredging. The dredged material is typically placed in storage facilities that are rapidly reaching capacity and average $25 million to build. Wisconsin Sea Grant has encouraged and facilitated new uses for dredged material. Throughout the region, there are now nourished beaches, capped landfills and restored habitats using that dredged material instead of allowing it to languish in a new and costly storage facility.

Sustainable Fisheries and Aquaculture

In this review period, the program funded six research projects in the Sustainable Fisheries and Aquaculture Focus Area, along with 11 formal outreach initiatives. This has led to addressing the Wisconsin Sea Grant Strategic Plan's objectives — which align with those of the national metrics and performance measures — of a safe, secure and sustainable supply of seafood to meet public demand and informed consumers who understand the health benefits of seafood consumption and how to evaluate the safety and sustainability of the seafood they buy.

There is a single national tracked performance measure in this area and it is the number of fishermen, seafood processors and aquaculture industry personnel who modify their practices using knowledge gained in fisheries sustainability and seafood safety as a result of Sea Grant activities. The target is 6,295 annually. On a program average basis, that computes to an annual figure of 190. Wisconsin Sea Grant's mean for this four-year review period is 3,125.

Here are two expanded examples of work in this focus area:

In the latter half of the last century, an important Lake Superior predator fish, the lake trout, was hard-hit by exploitation and parasitic sea lamprey. Wisconsin Sea Grant-funded research evaluated the success of a 38-year-old lake trout refuge in bringing back the stock, as well as modeled future population size under refuge and non-refuge conditions. The refuge has been demonstrated to be successful, growing more fish and fish that are larger and healthier.

A renowned Midwestern chef, winner of the James Beard Award and the Iron Chef competition, credits a Wisconsin Sea Grant initiative known as Eat Wisconsin Fish for his annual $78,000 purchase of local fish for his multiple restaurants, and he also encourages his peers in the industry to buy from state commercial fishers and aquaculture operators. The initiative also includes a website, eatwisconsinfish.org, rich in resources; a buyer's guide for restaurants, culinary schools and markets; and events.

Environmental Literacy and Workforce Development

In this review period, the program funded four projects in the Environmental Literacy and Workforce Development Focus Area, along with five formal outreach initiatives. This has led to addressing the Wisconsin Sea Grant Strategic Plan's objectives of an environmentally literate public supported and informed by a continuum of lifelong formal and informal engagement opportunities and a future workforce reflecting the diversity of Sea Grant programs, skilled in science, technology, engineering, mathematics and other disciplines critical to local, regional and national needs.

In terms of the national performance measures, Wisconsin Sea Grant exceeded the per-program average of the national annualized target in both the number of products used to advance environmental literacy and workforce development and the number of Sea Grant-supported students employed in a career related to their degree within two years of graduation. On that last one, by a large measure. The national annual average is five employed graduates. In 2014, the program reported 27; in 2015, 9; in 2016, 12; and in 2017, 42. The program was under the national per-program target for the number of people engaged in Sea Grant-supported informal education. However, it should be noted that Wisconsin Sea Grant lacks an affiliated and popular facility such as the Hatfield Marine Science Center or the education center at Hanauma Bay. The national average target figure per program is 35,180 and the highest amount Wisconsin Sea Grant reported was 11,455.

Here are two expanded examples of work in this focus area:

The Wisconsin Sea Grant-supported program Under the Surface provides an immersive educational and therapeutic underwater photography program sharing perspectives on the Lake Superior watershed, its cultures and vulnerable youth. The program pairs a science educator with staff at an organization that offers mental health services for troubled children.

The Wisconsin Sea Grant education team is active and innovative, creating tools and activities targeted to all levels along the pre-K-12 continuum with STEM curriculum kits, public events and participation in an annual intergenerational learning program known as Grandparents University based at UW-Madison. It further supports lifelong learning through a series of public science café talks in partnership with Minnesota Sea Grant and the Lake Superior Estuarine Research Reserve along Lake Superior. Another talk series, Tap Talks, is based in the central part of the state at a popular regional brewery and focused on water-themed topics.

Program Changes Resulting From the Previous Site Review Visit and Performance Review Panel

The 2015 Wisconsin Sea Grant site review resulted in 12 positive findings, three best-management practices and five suggestions. There were no recommendations. With regard to the suggestions, a response follows:

1. **Consider whether the Advisory Council member selection process could be made clearer and more formal, and better designed to show up any gaps in stakeholder representation. For example, an open advertisement for nominations for new members might show interest gaps worth filling (for example, commercial fishery, economist).** Wisconsin Sea Grant's director and other staff members work with the existing council members to identify gaps and recruit talent.

2. **Consider other ways of getting stakeholder advice and input, including input for the Strategic Plan, from people who can't make the commitment of serving on the advisory committee—for example, International Joint Commission-type public consultations, listening sessions, and internet-based opportunities to collect comments.** When Wisconsin Sea Grant undertook its effort to create a 2018-22 strategic plan and work plan, it conducted a statewide survey, personal phone conversations with external groups and conducted listening sessions.

3. **Keep looking for ways to expand awareness of the Wisconsin Sea Grant brand, especially off campus.** This is a core commitment of Wisconsin Sea Grant, and in this review period, it resulted in 713 earned media stories reaching an estimated 40 million people. On social media, Twitter ended this review period with 4,005 followers and Facebook, 1,150 people who engage with the program. The program also offered 1,000 professional or public presentations and reached more than 79,000 people. In the realm of K-12 learners, Wisconsin Sea Grant reached 50,376 people.

4. **Consider making the education specialist/librarian position full time, to increase the excellent work being done in this area.** The senior librarian has moved from an 80 percent appointment to a 90 percent appointment, and it is her preference that it not become a full-time position. At the time this briefing book was being completed, Wisconsin Sea Grant was in a hiring process for a half-time education position. Finally, others on staff are involved in educational activities, including the communications staff along with the fisheries specialist, social scientist and GIS specialist.

5. **It may be useful to have a formal, documented designation of the deputy who will act in the Director's absence.** The Wisconsin Sea Grant director feels that flat management is best. If "deputy" is for use when the director is out of town, those with inquiries are directed to specific assistant directors.

Appendix A

WISCONSIN SEA GRANT ADVISORY COUNCIL

James P. Hurley (ex-officio), director, UW Sea Grant, UW-Madison

Will Allen, farmer, founder of Growing Power Inc., Milwaukee

Todd Ambs, assistant deputy secretary, Wisconsin Department of Natural Resources, Madison

Kristine Andrews, associate vice president, federal and corporate relations, University of Wisconsin System, Madison

Thomas J. Blewett, retired, program director, Community, Natural Resource and Economic Development, University of Wisconsin Cooperative Extension, Madison

Carrie Bristoll-Groll, owner of Stormwater Solutions Engineering, Milwaukee

Sharon Cook, owner of Sharon D. Cook, LLC, Milwaukee

Michael Friis, program manager, Wisconsin NOAA Coastal Management Program, Madison

H. J. (Bud) Harris, professor emeritus, Natural and Applied Sciences, University of Wisconsin-Green Bay, De Pere

Justine Hasz, fisheries bureau director, Wisconsin Department of Natural Resources, Wisconsin Rapids

Al House, president, Apostle Islands Sport Fisherman's Association, Washburn

J. Val Klump, senior director and associate dean of research, School of Freshwater Sciences, UW-Milwaukee

Larry J. MacDonald, former mayor, Bayfield

Dreux Watermolen, section chief, Analysis Services, Wisconsin Department of Natural Resources, Madison

Larry Wawronowicz (chair), natural resource director, Lac du Flambeau Band of Lake Superior Chippewa Indians, Lac du Flambeau

WISCONSIN SEA GRANT COMMITTEE ON OUTREACH AND EDUCATION

Carmen Aguilar (education), associate scientist, School of Freshwater Sciences, UW-Milwaukee

Kate Angel (coastal hazards), federal consistency and coastal hazards coordinator, Wisconsin NOAA Coastal Management Program, Madison

Bill Brose (coastal engineering), principal, Smith Group JJR, Madison

Brenda Coley (social science) co-executive director, Milwaukee Water Commons, Milwaukee

Bart De Stasio (fisheries), professor, Lawrence University, Appleton

Matt Eitrem (geographic information systems), GIS coordinator, city of Ashland

Mary Erpenbach (communications), president, Cherry Street Agency, Beloit

Denny Fox (aquatic invasive species), national tournament director, AIM Pro Walleye Series, Weyauwega

Steve Galarneau (Great Lakes), director, Office of Great Waters, Wisconsin Department of Natural Resources, Madison

Lee Haasch (charter fishing), owner, Haasch Guide Service, Algoma

Vicky Harris (ecosystems and habitat), coordinator, Wisconsin Clean Marina Program, De Pere

Lynn Kurth (education), teacher, Prairie River Middle School, Merrill

Edith Leoso (social science), tribal historic preservation officer, Bad River Band of Lake Superior Chippewa Tribe, Odanah

Marge Loch-Wouters (education), youth services, Loch-Works Consulting, La Crescent, Minn.

Pat Robinson (freshwater estuaries), UW-Green Bay adjunct assistant professor and associate dean, Division of Extension, University of Wisconsin-Madison

Victoria Ryberg (environmental education), consultant, Wisconsin Department of Public Instruction, Madison

Jason Serck (economic development), planning and port director, city of Superior

Angie Tornes (outdoor recreation), senior planner for rivers, trails and conservation, National Park Service, Milwaukee

Pat Wilborn (aquaculture), Portfish Ltd., Port Washington

Appendix B
LEADERSHIP POSITIONS

American Fisheries Environmental and Resolutions Committee, chair

American Fisheries Society Midwest Division – Great Lakes and Salmonid Committee, interim chair

Association of Wisconsin Special Librarians, chair, website manager, newsletter editor

Center for Great Lakes Literacy, lead representative

Coastal Zone Canada 2015 and 2017 Living Shorelines Special Sessions, co-chair

Duluth-Superior Harbor Technical Advisory Committee Dredging Committee, chair

Duluth-Superior Harbor Technical Advisory Committee Open Water Placement Committee, co-chair

Great Lakes Binational Cold Regions Living Shorelines Community of Practice, co-chair

Great Lakes Commission Great Lakes Dredging Team Technical Committee, co-chair

Great Lakes Living Shorelines 2015 Meeting Planning Committee, co-chair

Green Bay Conservation Partners Steering Committee, co-chair

International Coastal Atlas Network, steering committee member

Lake Michigan Fisheries Forum, chair

Lower Green Bay and Fox River Area of Concern Citizen Advisory Committee, chair

Milwaukee Water Commons, co-chair

Mississippi River Basin Aquatic Nuisance Species Panel, co-chair

Mount Pleasant 2016 Emergency Action Shoreline Erosion Workshops, co-chair

National Institutes for Water Resources, National Cooperative Grants Program, peer review coordinator

National Sea Grant Communicator's Network, chair

National Sea Grant Fiscal Officer's Network, vice-chair

Planning Committee for the 2016 International Association of Marine and Aquatic Sciences Libraries and Information Centers SAIL regional meeting, chair

Sea Grant Association, president and president-elect

University-National Oceanographic Laboratory System, UW-Madison lead representative

UW-Madison Office of the Vice Chancellor for Research and Graduate Education Committee on Academic Staff Issues, chair

UW-Madison Environmental Chemistry and Technology Graduate Program, chair

Wisconsin Coastal Management Program, Coastal Hazards Work Group, chair

UW-Madison Water Resources Management 10-Year Program Review Committee

Water@UW-Madison Executive Committee

Wisconsin Coastal Management Program, Coastal Resilience Work Group, chair

Wisconsin Initiative on Climate Change Impacts Science Advisory Board, co-chair

Membership

2018-22 Sea Grant National Strategic Planning Committee

American Association of Civil Engineers National Dredging Committee

American Association of Geographers

American Institute of Certified Planners

American Planning Association

American Shore and Beach Preservation Association

Aquaculture and Fisheries Technologies for Food and Health

Asian Carp Regional Coordinating Committee Communications Work Group

Association of Public and Land-Grant Universities Board on Oceans, Atmosphere and Climate

Cat Island Chain Restoration Project Advisory Committee

Clean Boats, Clean Waters Work Group

Clean Rivers, Clean Lake Conference Steering Committee

Coastal Conservation Association

Conference of Latin American Geography

Duluth-Superior Port Land Use Committee

Fox-Wolf Watershed Alliance

Great Lakes Commission Great Lakes Dredging Team

Great Lakes Sea Grant Network Meeting Planning Committee, 2013, 2014, 2015 and 2017

Great Lakes Sea Grant Network Clean Marina Network

Great Lakes Sea Grant Network Crude Oil Transport Working Group

Green Bay Area of Concern – Technical Stakeholders

Green Bay Remedial Action Plan – Biota and Habitat Committee

Great Lakes Fishery Commission

Harbor District Inc.

International Association of Aquatic and Marine Science Libraries and Information Centers

International Association for Society and Natural Resources

International Joint Commission Subcommittee on Science (Annex 10), Great Lakes Water Quality Agreement

Ira and Ineva Reilly Baldwin Wisconsin Idea Endowment Grant Review Committee

Knauss Fellowship Selection Committee

Lake Michigan Day Steering Committee

Lake Michigan Invasive Species Management Area Strategic Planning Committee

Lake Michigan Marine Sanctuary Local Community Work Group

Lake Michigan Marine Sanctuary State Agency Work Group

Lake Michigan Stakeholders

Lake Superior Fisheries Management Plan

Lake Superior Lakewide Action and Management Plan Work Group

Lake Superior National Estuarine Research Reserve Advisory Committee

Lake Superior National Estuarine Research Reserve Estuary Summit Planning Team

Lake Superior Partnership Working Group

Liaison Advisory Committee to the Great Lakes Environmental Research Laboratory

Lower Fox River Total Maximum Daily Load Outreach Team

Lower Green Bay Remedial Action Plan Committee

Manitowoc County – 10-Year Land and Water Resource Management Plan – Technical Advisory Committee

Milwaukee Estuary Habitat and Yellow Perch Restoration Task Group

National Association of Science Writers

National Council of University Research Administrators

National Marine Educators Association

National Recreation and Park Association

National Sea Grant Climate Network

National Sea Grant Communications Awards Committee

National Sea Grant – Extension Green Infrastructure Community of Practice

NOAA Coastal Storms Program – Shoreline Change Workshop Steering Committee

NOAA Wisconsin Coastal Management Program – Coastal Access Committee

NOAA Wisconsin Coastal Management Program – Natural Hazards Advisory Committee

North Branch Manitowoc Committee – Flooding Issues

North Central Regional Aquaculture Center Committee for Extension

Northland Professional Communicators

St. Louis River Summit Planning Committee

Scientific Advisory Council, Cooperative Institute for Meteorological Satellite Studies

Sea Grant Association Awards and Event Committee

Sea Grant Week Planning Committee, 2014, 2016 and 2018

Sheboygan County Aquatic Invasive Species Strategic Plan

Society for Economic Botany

Society for Human Resource Management

Sweet Water Joint Science and Policy Advisory Committee

Travel and Tourism Research Association

Twin Rivers Water Trail Plan

United Nations Industrial Development Organization, Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection, Mercury in the Marine Environment

U.S. Environmental Protection Agency – Board of Scientific Counselors

University of Wisconsin System Representative on the Wisconsin Coastal Management Council

University of Wisconsin System Representative on the Wisconsin Groundwater Coordinating Council

UW-Madison Academic Staff Assembly

UW-Madison Academic Staff Communications Committee

UW-Madison Arboretum Board

UW-Madison Committee on Academic Staff Issues

UW-Madison Faculty Senate

UW-Madison Office of the Vice Chancellor for Research and Graduate Education, Equity and Diversity Committee

UW-Madison Science Alliance

UW-Madison Search and Screen Committee for the Vice Chancellor for Research and Graduate Education

Upper Midwest Invasive Species Conference Planning Committee

The Water Council

Western Social Science Association

Wisconsin Academy of Sciences, Arts and Letters – Waters of Wisconsin Steering Committee

Wisconsin Aquaculture Association

Wisconsin Association for Environmental Education

Wisconsin Beach Association

Wisconsin Clean Marina Technical Advisory Committee

Wisconsin Coastal Beaches Working Group Steering Committee

Wisconsin Department of Transportation – Harbor Assistance Project Selection Committee

Wisconsin Fisheries Advisory Council

Wisconsin Groundwater Coordinating Council

Wisconsin Harbor Towns Association

Wisconsin Idea STEM Fellows Program

Wisconsin Initiative on Climate Change Impacts – Green Bay Working Group

Wisconsin Initiative on Climate Change Impacts – Water Resources Working Group

Wisconsin Invasive Species Council

Wisconsin Lakes Partnership

Wisconsin Marine Educators Association

Wisconsin Master Naturalist – Great Lakes Advanced Training Course Development Advisory Committee

Wisconsin Society of Science Teachers

Wisconsin Water Thinkers Network

Women of Water

World Aquaculture Society

Appendix C

Awards for Wisconsin Sea Grant individuals as well as projects and products reflective of work completed in the 2014-17 period.

2018 Council for Advancement and Support of Education Circle of Excellence Award in Public Relations and Community Relations for Tackling Barriers for Green Infrastructure: An Audit of Local Codes and Ordinances

2018 Water Research Image Contest Winner presented to Titus Seilheimer from Water@UW-Madison

2017 Outstanding Achievement Award presented to Wisconsin Sea Grant Director Jim Hurley from the Lake Superior National Estuarine Research Reserve

2017 AVA Digital Platinum Award for Undercurrents: The Hidden Knowledge of Groundwater podcast

2017 AVA Digital Honorable Mention Award for Sea Grant: Science Serving America's Coasts video

2016 Invader Crusader Award from the Wisconsin Council on Invasive Species presented to Aquatic Invasive Species Outreach Specialist Tim Campbell

2015 Great Lakes Sea Grant Network, Outstanding Programming Award for the St. Louis River Estuary Stories and Science project

2015 Council for Advancement and Support of Education Circle of Excellence Award for the 2012-14 Sea Grant Biennial Report

2015 APEX Grand Award for the Eat Wisconsin Fish communications campaign

2015 University of Wisconsin Regents Academic Staff Excellence Award presented to Coastal Engineering Outreach Specialist Gene Clark

2014 Research to Application Award from the Sea Grant Association recognizing work to understand and mitigate damage from accelerated freshwater corrosion of structures within the port of Duluth-Superior and shared with Minnesota Sea Grant

2014 Sea Grant Association President's Award presented to Wisconsin Sea Grant Director Jim Hurley