

# **Ohio Sea Grant College Program**

## **Strategic Plan 2018-2021**

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## **Program's Mission and Goals**

The mission of the Ohio Sea Grant College Program (Ohio Sea Grant) is to increase the public's understanding of Lake Erie issues and to improve development and conservation of Lake Erie's resources. Within this mission, the program has several overarching goals:

- Promote sustainable economic development on the Lake Erie coast and within the watershed by applying scientific knowledge to solve resource concerns;
- Develop the critical knowledge and technology to help coastal industries in Ohio as they work to enhance revenue while protecting ecosystem function;
- Identify, protect and conserve valuable coastal habitats and strive to improve environmental conditions in Lake Erie and Great Lakes ecosystems;
- Enable coastal and Great Lakes communities to successfully adapt to a variable climate, and stochastic social and economic conditions;
- Improve the quality of aquatic education in Ohio to foster a more informed citizenry with a higher quality of life.

## **Ohio Sea Grant Core Values**

The Ohio Sea Grant's core values are essential and enduring tenets that influence the organization and support its mission. These core values support a culture of integrity within an organization that is known as an honest broker. The Ohio Sea Grant Program will be:

- *Visionary* - Advance innovative solutions that address emerging challenges (science and stewardship) and encourage creativity, initiative and innovation.
- *Collaborative* – Seek partnerships that leverage our strengths. Be responsive and accessible, respect partners, maintain scientific neutrality, integrate diverse expertise and provide the science and knowledge needed to inform stakeholders.
- *Dedicated to Sustainability* - Communicate the importance of good stewardship and the value of the services that the coastland Great Lakes' ecosystems provide to the Nation.
- *Accountable* - operate with integrity and transparency; maintain quality and relevance in administration, management and oversight.

## **Ohio Sea Grant College Program's Cross-cutting Principles:**

Ohio Sea Grant will strive to address two specific areas that deserve our attention to enhance the Program's capabilities to meet future national needs. In the course of implementing the 2018-2021 Ohio Sea Grant Strategic Plan, the Ohio Sea Grant College Program will:

- *Cultivate Partnerships* by integrating the expertise and capabilities of partners from the international, federal, tribal, and state communities as well as from academia, nongovernmental organizations, and industry.
- *Enhance Diversity and Inclusion* by seeking and welcoming diverse perspectives to enhance cultural understanding and enable the network to pursue its vision and mission effectively and efficiently.

## **Overview of the Ohio Sea Grant College Program's Focus Areas, Goals, Actions, and Desired Outcomes:**

For more than 30 years, Ohio Sea Grant has worked to help restore and rejuvenate Lake Erie and its regional economy. With its unique combination of research, education and outreach efforts, Ohio Sea Grant has become a program of action, working with stakeholders and various partners (e.g., agencies, NGOs, academics) to solve the lake's most pressing environmental issues.

It is the integration of research, education and outreach that allows Ohio Sea Grant to investigate issues and problems and share the solutions with those likely to shape our future. Research alone seldom solves problems, but when it is translated and delivered through innovative tools and training, new opportunities arise. Through its affiliation with the Ohio State University, Ohio Sea Grant's access to leading scientists and educators enables the program to share research findings with decision makers, citizens, business owners, and future leaders.

To best evaluate the successes of the Ohio Sea Grant College Program, below are our four focus areas and goals, actions, and desired outcomes within each.

### **Focus Area: Healthy Coastal Ecosystems**

- **GOAL:** Lake Erie and Great Lakes habitats, ecosystems, and the services they provide are protected, enhanced, and/or restored.
  - **ACTION:** Develop and share scientific understanding, decision-support tools, technologies and approaches to protect and restore ecosystems.
    - **DESIRED OUTCOME:** Scientific understanding and technological solutions inform and improve the management and conservation of natural resources
    - **DESIRED OUTCOME:** Ecosystem science and conservation priorities developed through stakeholder participation are addressed.
    - **DESIRED OUTCOME:** Greater awareness and understanding of ecosystem function and ecosystem services improve and guide stewardship efforts.
  - **ACTION:** Sustain the habitat, the biodiversity and the abundance of coastal ecosystems, fish, wildlife and plants.
    - **DESIRED OUTCOME:** Improved collaborative planning and decision-making to enhance effective stewardship.
  
- **GOAL:** Land, water and living resources are managed by applying sound science, tools and services to sustain ecosystems that support communities and economies.
  - **ACTION:** Support a sound science and management driven framework that integrates observations, monitoring, research and modeling to provide a scientific basis for informed decision-making.
    - **DESIRED OUTCOME:** Collaborations with partners and stakeholders supports planning, research and technological solutions to address resource management needs.
    - **DESIRED OUTCOME:** Citizen Science initiatives are engaged and contribute to improving our knowledge with respect to coastal communities, economies and ecosystems.
    - **DESIRED OUTCOME:** Communities have access to sound science, data, tools and training to be effective in planning and decision-making processes.
    - **DESIRED OUTCOME:** Resource managers understand the risks, options,

- tradeoffs and impacts of their decisions.
- ACTION: Identify and promote case studies and strategies that enhance resilient ecosystems and watersheds in the context of changing conditions.
  - DESIRED OUTCOME: Communities have access to information and understand projected changes within coastal ecosystems, and how changes will impact coastal ecosystems.
  - DESIRED OUTCOME: Communities can access case studies, training and tools to improve their ability to plan, prepare and adapt to future ecosystem conditions.

### **Focus Area: Sustainable Fisheries and Aquaculture**

- GOAL: Fisheries and other freshwater natural resources supply food, jobs, and both economic and cultural benefits.
  - ACTION: Develop a trained workforce and enhance knowledge transfer in domestic aquaculture.
    - DESIRED OUTCOME: Comprehensive needs assessment to evaluate likely success of domestic aquaculture industry in the Great Lakes.
  - ACTION: Promote and support harvest and processing techniques that lead to safe, sustainable and high-quality food and economic and ecosystem benefits.
    - DESIRED OUTCOME: Consumers understand the health benefits of seafood and purchase safe and sustainable products.
- GOAL: Natural resources are sustained to support fishing communities and industries.
  - ACTION: Ensure sound science, services and tools are available and accessible to resource managers, the fishing and aquaculture communities, and consumers.
    - DESIRED OUTCOME: Commercial and recreational fishermen are knowledgeable about efficient, sustainable, and responsible tools, techniques, and uses of coastal and freshwater resources.
    - DESIRED OUTCOME: Resource managers and fishing communities have access to science and tools to increase their capability to adapt to future resource management needs.

### **Focus Area: Resilient Communities and Economies**

- GOAL: Lake Erie's coastal communities use their knowledge of changing conditions and risk to become resilient to extreme events, economic disruptions, and other threats to community well-being.
  - ACTION: Use innovative tools to increase the public's awareness of changing conditions and the potential impacts their communities, economies and ecosystems may encounter.
    - DESIRED OUTCOME: Members of the community, including the underserved, are aware of and understand changing conditions and hazards, and are prepared to respond and adapt.
    - DESIRED OUTCOME: Existing and innovative training programs improve community leaders' understanding of changing conditions in their communities and implement adaptive strategies.

- ACTION: Utilize comprehensive planning and adaptive management strategies to enhance community resilience to hazards, changing environmental conditions, and changing socioeconomic conditions.
  - DESIRED OUTCOME: Communities have access to information needed to understand the factors impacting ecosystems and participate in adaptive management planning.
  - DESIRED OUTCOME: Communities employ adaptive management strategies and apply tools to engage diverse members of the community to improve resilience and community sustainability.
- ACTION: Increase the resilience of coastal communities through diversification, growth, and strengthening of coastal economic sectors.
  - DESIRED OUTCOME: Members of the community, including the underserved, have access to information needed to understand how coastal economic activities and trends will impact environmental and community well-being.
  - DESIRED OUTCOME: Communities have access to tools, services, and technologies to adapt and grow resilient economies.
  - DESIRED OUTCOME: Leaders in coastal economic sectors understand how the community can become more resilient through diversification and through conservation of ecosystem resources and the services they provide.
- GOAL: Lake Erie’s water resources are sustained and protected to meet emerging needs of the communities, economies, and ecosystems that depend on them.
  - ACTION: Inform community members about how actions impact water quality and availability.
    - DESIRED OUTCOME: Community members understand watershed function and the services the watershed provides to support communities and economies.
    - DESIRED OUTCOME: Community members understand how actions will impact water quality and quantity and are able to make informed decisions.
  - ACTION: Collaborate with stakeholders to develop and share best management practices (BMPs) to protect and manage water resources.
    - DESIRED OUTCOME: Communities have access to sound science, data, tools, and services to understand and anticipate changes in water quality and quantity.
    - DESIRED OUTCOME: Communities have diverse, sustainable economies and industries that support the existing and emerging water needs.
    - DESIRED OUTCOME: Communities have access to science, tools, and technologies to protect and sustain water resources and make informed decisions.

**Focus Area: Environmental Literacy and Workforce Development**

- GOAL: An environmentally literate public that is informed by formal and informal education programming
  - ACTION: Enable the public to engage in community planning processes with respect to adaptive management to changing conditions by providing the best available information.
    - DESIRED OUTCOME: Communities are knowledgeable and equipped with the best available science and technology in order to contribute to adaptive management planning processes and stewardship.

- ACTION: Increase effective environmental literacy instruction for K-12 students by formal and informal educators.
  - DESIRED OUTCOME: Teachers and students are better informed in science, technology, engineering, and mathematics fields and can employ their knowledge to support sustainable practices within their communities.
- ACTION: Increase effective environmental literacy communication to stakeholders, including how ecosystem change affects economic, social, and cultural values, as well as implications for conservation and management.
  - DESIRED OUTCOME: Stakeholders develop a sense of awareness, understanding and stewardship in order to sustain watershed, coastal, and marine ecosystems and resources.
  - DESIRED OUTCOME: Communities implement sustainable strategies when managing natural resources and make decisions based on information acquired through informal science education.
- GOAL: A diverse and skilled workforce is engaged and enabled to address critical local, regional, and national needs.
  - ACTION: Grow awareness among the nation's diverse population to the career paths available that support the needs of the nation's coastal communities.
    - DESIRED OUTCOME: All members of a community are enabled to explore and pursue the variety of occupations that are essential to sustain the nation's coastal communities, economies, and ecosystems.
  - ACTION: Increase opportunities for undergraduate and graduate students to gain knowledge and experience in the science and management of watershed, coastal, and marine resources.
    - DESIRED OUTCOME: College level courses and internships provide increased literacy, experience, and preparedness in areas of watershed, coastal, and marine ecosystems for all students including those from underrepresented groups.
    - DESIRED OUTCOME: Undergraduate and graduate students including those from underrepresented groups, are supported and have access to formal and experiential learning, training, and research experiences.
  - ACTION: Prepare a responsive and diverse workforce to advance and benefit from sectors that support the needs of the nation's coastal communities and ecosystems (e.g. industry, research, government, etc.), and to adapt and thrive in changing conditions.
    - DESIRED OUTCOME: Employment in all sectors of the U.S. coastal resource enterprise expands and diversifies.
    - DESIRED OUTCOME: The existing and future workforce is able to adapt and thrive in changing environmental, social, and economic conditions.

**Outline of Ohio Sea Grant's planning process:**

Ohio Sea Grant Director Efforts:

- Director is currently a member of numerous boards, committees, and task teams that keep the program well-informed of both Lake Erie efforts and Great Lakes regional efforts. This involvement ensures that the research, education, and outreach we develop meet the needs of

our stakeholders. A few examples of this involvement include:

- Co-Director of Lake Erie Millennium Network (2016-present)
  - Committee member of Annex IV (Nutrient Annex) of the Great Lakes Water Quality Agreement; currently active member of the Objectives and Targets Task (2016-present)
  - Committee member of Annex II (Lakewide Management) of the Great Lakes Water Quality Agreement (2016-present); responsible for issuing Lakewide Action and Management Plan (LAMP) for Lake Erie
  - Committee Member International Joint Commission's Research Coordinating Committee of Science Advisory Board (2014-present)
  - Advisory Board of the Cleveland Water Alliance (2016-present); previously Ex-officio member, 2014 to present, Program Committee of Cleveland Water Alliance
  - Agency Partner for Ohio Lake Erie Commission (2015-present)
  - Advisory Board of OSU's Global Water Institute (2015-present)
  - Working group for the Blue Accounting - ErieStat Workgroup (Great Lakes Commission)
  - Working group for the Fertilizer Research Workgroup (Michigan Department of Agriculture and Rural Development)
  - Member of the Advisory Council for the Ohio Water Trust
- Ohio Sea Grant / OSU's Stone Lab are currently managing 55 projects related to Lake Erie Issues; ~\$7,000,000 in research effort (only \$1,800,000 is Sea Grant supported). The bulk of this work is overseen by an Agency advisory board that is made up of the Ohio Environmental Protection Agency, the Ohio Department of Natural Resources, the Ohio Department of Health, and the Ohio Department of Agriculture. This agency advisory board puts Dr. Winslow in regular contact with state agencies.
  - Director gives an invited update at each Great Lakes Commission meeting (quarterly; "Agency Partner Report"). These reports ensure that all agencies within Ohio know about Ohio Sea Grant and Stone Lab's research, outreach, and education efforts. The commission is made up of the directors of the Ohio Environmental Protection Agency, the Ohio Department of Transportation, the Ohio Department of Natural Resources, the Ohio Development Services Agency, the Ohio Department of Health, and the Ohio Department of Agriculture. The role of the Ohio Lake Erie Commission (OLEC) is outlined below:

The role of the OLEC is to preserve Lake Erie's natural resources, to protect the quality of its waters and ecosystem, and to promote economic development of the region by ensuring the coordination of policies and programs of state government pertaining to water quality, toxic substances, and coastal resource management. The Ohio Lake Erie Commission staff advises the Governor and the Commission on the development, implementation, and coordination of Lake Erie programs and policies; provides representation of the interests of Ohio in regional, national, and international forums pertaining to the resources of the Great Lakes; assists in the implementation of the Coastal Zone Management Program and the Great Lakes Restoration Initiative; facilitates compliance with the Great Lakes Water Quality Agreement and the Great Lakes Toxic Substances Control Agreement; and manages the distribution of money from the Lake Erie Protection Fund.

- Director regularly encourages the staff to sit on as many advisory boards, committees, and



working groups as possible and to regularly update leadership on the efforts of these groups.

#### Extension Educator Efforts:

- All extension educators scheduled meetings with their respective advisory boards. Extension educator expertise includes: (1) Fisheries Specialist; (2) Community and Economic Development Specialist; (3) Clean Marinas/Boaters Specialist; and (4) Human Dimensions of Natural Resources Specialist.
- Reviewed all surveys given at Sea Grant sponsored and organized events. These highlight areas/topics/issues that our stakeholders would like our research and outreach focus on. Events include but are not limited to County Commissioner, Mayor and Decision Makers Day (x2), two- day Science Writers Workshop, boat shows, charter captain conference, etc.

#### OSU Stone Lab efforts:

- Looking through last summer's evaluations:
  - Events hosted (e.g., outreach events and workshops)
  - Student evaluations of courses and workshops
  - Teacher evaluations associated with our grades 5-12 fieldtrip program
  - Visitors comments related to Stone Lab's Aquatic Visitor Center

#### Entire program efforts:

- Reviewing the previous four years of annual reports, the 2015 Site visit, and the 2106 Performance Review Panel report.
- On January 4<sup>th</sup>, 2017, all primary Ohio Sea Grant personnel met to discuss upcoming initiatives and goals for the 2018-2021 strategic plans. At this meeting, target goals were set for all performance measures.

## **Appendix A: Definitions for the purposes of developing the Ohio Sea Grant College Program Strategic Plan**

**Adaptive management:** A systematic approach for improving resource management by monitoring and learning from management outcomes. An adaptive approach provides a framework for making good decisions in the face of critical uncertainties, and a formal process for reducing uncertainties so that management can improve over time.

**Action:** The tactic or means used to achieve the desired outcomes.

**Coastal communities:** Coastal and Great Lakes communities that represent a variety interests (e.g. government, business, education, industry, research, non-governmental organizations, etc.) served by the Ohio Sea Grant College Program.

**Core values:** Values that guide behavior and actions of Ohio Sea Grant College Program.

**Cross-cutting Principles:** Main beliefs or ideologies embraced by the Ohio Sea Grant College Program that will strengthen the organization as it strives to implement the strategic plan.

**Focus Areas:** Areas of emphasis that are shaped to address the nation's most urgent coastal and Great Lakes' needs.

**Diversity:** A collection of individual attributes that together help an organization pursue objectives effectively and efficiently.

**Ecosystem:** A dynamic and complex association of plant, animal, and human communities and the non-living physical components interacting as a functional unit.

**Goal:** An aspirational concept that inspires a level of success in a focus area and describes the desired long-term outcome.

**Inclusion:** An organizational culture that aims to connect all individuals to the organization.

**Mission:** Communicates the purpose of the organization.

**Outcome:** An intended result or consequence.

**Performance Measure:** A quantitative way of measuring the achievement of a result.

**Resilience:** The ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events and changing conditions (e.g. severe storms, economic conditions, demographic shifts, or ecosystem changes).

**Vision:** A description of a future state that explains the basis for developing a strategic plan.

## **Appendix B: 2018 – 2021 Ohio Sea Grant Performance Measures and Metrics**

### **Introduction**

The current list of national performance measures and metrics used in the NOAA Ohio Sea Grant College Program 2014-2017 Strategic Plan will continue to be used for the NOAA Ohio Sea Grant College Program 2018-2021 Strategic Plan.

PIER is designed to facilitate communication between NOAA and the partner Sea Grant programs. Through the system, programs integrate strategic plans, projects and funding, and project results. It is a resource for sharing Planning, Implementation, and Evaluation (PIE) information on a program scale and can be rolled up to tell a national story.

### **Healthy Coastal Ecosystems**

Number of resource managers who use ecosystem-based approaches in the management of land, water, and living resources as a result of Sea Grant activities

Number of acres of coastal habitat protected, enhanced, or restored as a result of Sea Grant activities.

### **Sustainable Fisheries and Aquaculture**

Number of fishermen, seafood processing or aquaculture industry personnel who modify their practices using knowledge gained in fisheries sustainability and seafood safety as a result of Sea Grant activities

### **Resilient Communities and Economies**

Number of communities that adopt/ implement sustainable economic and environmental development practices and policies as a result of Sea Grant activities

Annual number of communities that adopt/ implement hazard resiliency practices to prepare for and respond to/ minimize coastal hazardous events

### **Environmental Literacy and Workforce Development**

Number of Sea Grant products that are used to advance environmental literacy and workforce development.

Number of people engaged in Sea Grant-supported informal education programs

Number of Sea Grant-supported graduates who become employed in a job related to their degree within two years of graduation.

### **Cross Cutting**

Number of Sea Grant tools, technologies and information services that are used by our partners/customers to improve ecosystem-based management

Economic and societal impacts derived from Sea Grant activities (market and non-market; jobs and businesses created or sustained)

## **Cross Cutting Output Metrics**

Clean Marina certifications

HACCP certifications: Number of individuals certified in Hazard Analysis Critical Control Point (HACCP) due to Sea Grant efforts (a systematic preventive approach to seafood safety)

Number of peer-reviewed publications produced by the Sea Grant network

Sea Grant Staffing

Number of Postsecondary Students and Degrees Financially-Supported by Sea Grant in Higher Education Programs (Undergraduate, Graduate)

Number of P-12 Students Reached Through Sea Grant-Trained Educators or Directly through Sea Grant Education Programs

Number of P-12 Educators who participated in Sea Grant education programs

Volunteer Hours

Sea Grant-Sponsored/Organized Events

Attendees at Sea Grant-Sponsored/Organized Events

Public or Professional Presentations

Attendees at Public or Professional Presentations