

ILLINOIS-INDIANA SEA GRANT COLLEGE PROGRAM

DRAFT

2014-2017 STRATEGIC PLAN

Two great states caring for one Great Lake.

Introduction

Illinois-Indiana Sea Grant (IISG), one of 32 Sea Grant college programs nationwide, is dedicated to delivering scientifically sound data and tools to decision makers, citizens, and students in the southern Lake Michigan region. IISG is a partnership between state universities in Illinois and Indiana and the U.S. Department of Commerce, National Oceanic and Atmospheric Administration (NOAA).

IISG is administratively housed at the University of Illinois and Purdue University. The program supports 29 specialists in the two states. Of the 29 staff members, only 7 FTEs are supported directly by with Sea Grant core funds, with the remaining supported by a combination of partner contributions. Partners include the University of Illinois Natural History Survey and Office of Extension and Outreach, the University of Illinois at Chicago, the Midwest Regional Climate Center, the Chicago Metropolitan Agency for Planning, Purdue University, Purdue Calumet, and the U.S. EPA Great Lakes National Program Office. IISG has been so successful in achieving these partnerships because of our strength in conveying scientific information to a wider audience and because of our ability to work effectively with local officials and others to help them achieve lasting and significant environmental and economic benefits for their communities.

Planning Process and Strategic Approach

This plan is will span 2014-2017 and will serve as IISG's application of the National Sea Grant Office's strategic plan for the same time period. Because funds from the NSGO pay for less than a quarter of our program, this plan is focused on the infrastructure that needs to be in place for us to secure external funds and to achieve impact. The goals and outcomes reflect the organizational setting we have established. However, the performance measures reflect only what we can and will do Sea Grant funds.

This plan has been reviewed from both top-down (i.e., by our advisory committees) and bottom-up (i.e., by our stakeholders) perspectives. Our process for developing the plan included the following steps:

1. A needs assessment undertaken in January 2012 identified key challenges in the region and those areas where our stakeholders, advisory committees, and the general public saw Sea Grant as a contributor.
2. Our specialists evaluated the results of the needs assessment and, with their knowledge and expertise, refined the list of topic areas and action items. IISG specialists work closely with a wide variety of user groups and stakeholders and, through that participation, know their constituents' needs and guide our programs accordingly.

3. After the publication of the National Sea Grant Office strategic plan, we looked for overlaps between that plan's objectives and what our stakeholders and specialists saw as key gaps in their own programs, and focused our program on bridging those intersections.
4. The plan was then reviewed and approved by our administrative and external advisory committees and also posted for public comment on our website.
5. Finally, the plan was evaluated by the National Sea Grant Office for breadth and rigor.

IISG has organized our activities into the four National Sea Grant Office focus areas – Healthy Coastal Ecosystems, Sustainable Fisheries and Aquaculture, Resilient Communities and Economies and Environmental Literacy and Workforce Development. We have also included a category for crosscutting program development, which will be integrated into each of the focus areas.

Within those broad categories, we have organized the program into 10 topical areas.

- Healthy Coastal Ecosystems
 - Aquatic Invasive Species
 - Coastal Restoration
 - Great Lakes Health
- Sustainable Fisheries and Aquaculture
 - Aquaculture
- Resilient Communities and Economies
 - Climate Change Adaptation
 - Coastal Tourism
 - Community Sustainability
 - Pollution Prevention
- Environmental Literacy and Workforce Development
 - Environmental Literacy
 - Workforce Development
- Crosscutting Program Development

Outlined in the plan that follows, we have identified broad goals related to the topics. We have then identified three types of outcomes that are applicable for each goal – changes in knowledge, changes in behavior, and changes in management practices. We have identified measurable and specific objectives that we will undertake to achieve each of the goals and their outcomes. Finally, we have addressed how our plan supports the national performance measures established by the National Sea Grant Office.

Healthy Coastal Ecosystems

Illinois-Indiana will address three topics under the Healthy Coastal Ecosystem focus area: aquatic invasive species, coastal restoration, and Great Lakes health. Goals, outcomes and objectives in this area relate to protecting, restoring and conserving natural resources and developing mechanisms to help natural resource managers make optimal decisions.

Aquatic Invasive Species

Over 180 non-native species have been introduced into the Great Lakes region. Some of these species such as the zebra mussel, Eurasian watermilfoil and silver carp have flourished and negatively impacted both our environment and economy. Many more aquatic invasive species (AIS) also pose threats to Lake Michigan and the inland waters of both Illinois and Indiana.

AIS can be introduced and spread through a variety of activities including those associated with recreational water users, water gardeners, aquarium hobbyists, and nursery tradespeople. For example, when an angler releases bait fish at the end of a day's fishing or a water gardener disposes of excess plants in a local stream, they could also be accidentally introducing AIS into those waterways. IISG works with these groups to provide the tools they need to avoid AIS-risky behaviors.

National Sea Grant Goal: Ecosystem services are improved by enhancing health, diversity and abundance of fish, wildlife and plants.

Illinois-Indiana Sea Grant Goal: Residents of southern Lake Michigan will change their behavior to prevent introduction of new aquatic invasive species and/or mitigate the impact of existing aquatic invasive species.

Outcomes: Great Lakes residents and decision makers will have resources to make informed decisions about how to stop the spread of invasive species.

Outcome: Great Lakes residents will change their behavior to prevent the spread of aquatic invasive species.

Outcome: Great Lakes decision makers will integrate science-based invasive species practices.

Coastal Restoration

Years of industrial activity and development have left many lakes and rivers contaminated with nitrogen, heavy metals, PCBs, and other toxic pollutants. Many rivers and streams have been dammed, channelized, or diverted to suit local needs. The result is that many aquatic ecosystems are stressed and degraded—unsafe for people and unsuitable for some wildlife. Sea Grant is working to restore these waterbodies through development and implementation of restoration techniques that will improve coastal health and ensure continued enjoyment and use of coastal resources by the public.

National Sea Grant Goal: Ecosystems and their habitats are protected, enhanced or restored.

Illinois-Indiana Goal: Ecosystems in southern Lake Michigan will be preserved or restored.

Outcome: Resource managers will have tools to restore degraded ecosystems.

Great Lakes Health

IISG is engaged in initiatives that provide the latest scientific information to those in the Great Lakes region who can best use it. For example, Sea Grant works closely with U.S. EPA Great Lakes National Program Office to develop products, tools, and strategies to communicate the results of the State of the Lakes Ecosystem Conference (SOLEC), and recent findings from water quality sampling conducted aboard the research vessel *R/V Lake Guardian*. In these and other efforts, IISG works with community leaders, with natural resource professionals, and with Great Lakes residents to monitor, improve or protect the quality of the Great Lakes overall and in critical locations.

National Sea Grant Goal: Ecosystem-based approaches are used to manage land, water and living resources.

Illinois-Indiana Sea Grant Goal: Natural resource managers will use ecosystem-based data to address land, water and biological resources decisions.

Outcome: The public and resource managers will have access to real-time Lake Michigan data.

Outcome: Resource managers will have easy access to U.S. EPA and other environmental datasets.

Outcome: Great Lakes research will be coordinated to fill information gaps.

Healthy Coastal Ecosystem Performance Measures

1. Number of Sea Grant tools, technologies and information services that are used by our partners/customers to improve ecosystem-based management.
 - a. Stream restoration workshops
 - b. Beach manual
 - c. Michigan City Buoy
2. Number of ecosystem-based approaches used to manage land, water and living resources in coastal areas as a result of Sea Grant activities. (NOAA defines ecosystem approaches as: “management that is adaptive, geographically specific, takes account of ecosystem knowledge and uncertainties, considers multiple external influences, and strives to balance diverse social objectives.”)
 - a. Stream restoration/dam removal guidelines (50)
 - b. Resource managers in AOC areas (14)
 - c. Beach closure partners (10)
3. Number of acres of coastal habitat protected, enhanced or restored as a result of Sea Grant activities.
 - a. 50 as a result of stream restoration workshops

Sustainable Fisheries and Aquaculture

With large markets, such as Chicago, hungry for fresh fish, IISG focuses aquaculture programming on making fish farms in the two state productive and profitable. Goals, outcomes and objectives promote economic viability and technological efficiencies in fish production.

National Sea Grant Goal: A safe, secure and sustainable supply of seafood to meet public demand.

Illinois-Indiana Sea Grant Goal: Illinois and Indiana aquaculture producers meet public demand through sustainable and profitable operations.

Outcome: Aquaculture producers will have tools assess profitability.

Outcome: The aquaculture industry market share will increase.

Sustainable Fisheries and Aquaculture Performance Measures

1. 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.
 - a. Aquaponics producers (2)
 - b. Overall market share increase (5)
2. Number of seafood consumers who modify their practices using knowledge gained in fisheries sustainability, seafood safety and the health benefits of seafood as a result of Sea Grant activities.
 - a. None.

Resilient Communities and Economies

IISG's resilient communities and economies efforts reside in five topic areas: climate change adaptation, coastal tourism, community sustainability, pollution prevention and water supply. Goals, outcomes and objectives will result in increased availability of tools and information and local and state implementation of related best management practices.

Climate Change Adaptation

Climate change is among the top environmental challenges facing today's society, impacting both aquatic and terrestrial ecosystems. It also poses threats to human lives, environments and economies. IISG will help communities and individuals plan for and adapt to projected climate changes, taking into account the extent of uncertainty in these forecasts.

National Sea Grant Goal: Resilient communities adapt to the impacts of hazards and climate change.

Illinois-Indiana Sea Grant Goal: Southern Lake Michigan communities adapt to climate change uncertainty.

Outcome: Climate science resources will be readily available to people in southern Lake Michigan.

Outcome: Climate adaptation plans will be adopted at the state and local level.

Coastal Tourism

According to the Chicago Convention and Visitors Bureau, Chicago hosted over 43 million visitors in 2011. That is an 11% increase over 2010 and the largest increase in tourism in the country. Although ample tourism resources exist for many urbanized areas of the region, IISG seeks to provide innovative tools about the natural and built environment in order to help expand tourism in the entire bi-state coastal area, to further benefit of local economies.

National Sea Grant Goal: Development of vibrant and resilient coastal economies.

Illinois-Indiana Sea Grant Goal: Natural resource tourism is expanded in the southern Lake Michigan region.

Outcome: Tourism resources are available for the region.

Community Sustainability

Chicago's greater metropolitan region supports the economic, social, and recreational needs of 9.3 million people. By 2030, the metro region is projected to gain an additional two million people, which will further stress the area's natural and ecological resources. New plans and policies are needed to accommodate this growth while protecting – and possibly even enhancing – the region's ecological services and biodiversity.

Illinois-Indiana Sea Grant (IISG) will work with local officials, and assist regional planners in formulating new development, resource management strategies and climate adaptation plans. IISG's outreach to local officials will encourage more sustainable growth at the community scale, while its planning assistance to regional agencies will help them sustainably manage surface and groundwater resources (and their associated ecosystems).

National Sea Grant Goal: Communities use comprehensive planning to make informed strategic decisions.

Illinois-Indiana Sea Grant Goal: Southern Lake Michigan communities use sustainable planning and economic principles to make optimal decisions.

Outcome: Improved outreach and decision-support tools will help guide planning processes.

Outcome: Sustainable practices will be incorporated into local planning policies and procedures.

Pollution Prevention

Through tool kits and outreach, IISG helps communities and individuals make better purchasing, lawn care, and other consumer choices and wisely deal with unwanted or no longer needed products. By modifying purchasing behavior and safely disposing, recycling or donating many unwanted items, people can help protect the Great Lakes ecosystem and our drinking water quality.

National Sea Grant Goal: Improvements in coastal resources sustain human health and ecosystem services.

Illinois-Indiana Sea Grant Goal: Community actions sustain human health and ecosystem services.

Outcome: People have tools to protect drinking water and ecosystem services.

Resilient Communities and Economies Performance Measures

1. Number of communities that implemented sustainable economic and environmental development practices and policies as a result of Sea Grant activities.
None with Sea Grant funds
2. Number of communities that implemented hazard resiliency practices to prepare for, respond to or minimize coastal hazardous events as a result of Sea Grant activities.
 - a. Non with Sea Grant Funds

Environmental Literacy and Workforce Development

IISG's environmental literacy and workforce development efforts are divided into two topic areas: environmental literacy and workforce development. Goals, outcomes and objectives will result in increased availability of tools and information for teachers and students and in internships, fellowships and continuing education programs.

Environmental Literacy

Education is essential in a society that can make well-informed decisions about the environment. Illinois-Indiana Sea Grant is well positioned to foster scientifically-literate citizens to serve as stewards of our local aquatic and marine resources. IISG's team of educators is meeting the challenge of improving today's science education through its professional training for educators and innovative curriculum resources for students and teachers, grades K-16. Our classroom and community stewardship programs are developed for all learners, including underserved student populations in the Chicago and northwest Indiana regions. We also foster a multi-disciplinary approach to learning by integrating science with content areas such as math, language arts, geography, and the cultural arts.

National Sea Grant Goal: An environmentally literate public supported and informed by a continuum of lifeline formal and informal engagement opportunities.

Illinois-Indiana Sea Grant Goal: The Southern Lake Michigan region will be increasingly environmentally literate

Outcome: Great Lakes K-12 teachers have the knowledge to convey water resource concepts to students.

Outcome: College students will have information to make environmentally literate decisions.

Outcome: Teachers will integrate Sea Grant curriculum or activities into lesson plans.

Workforce Development

Sea Grant also supports the professional development of undergraduate and graduate students through our pre-service teacher workshops, undergraduate courses, and by offering fellowship programs and other career development opportunities.

National Sea Grant Goal: 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.

Illinois-Indiana Sea Grant Goal: College students and resource managers will have the knowledge and skills to become active and relevant participants in local, state or national dialogues about water resources.

Outcome: Programs will be available to promote an environmentally literate workforce .

Education and Workforce Development Performance Measures

1. Number of Sea Grant facilitated curricula adopted by formal and informal educators.
 - a. None with Sea Grant Funds
2. Number of people engaged in Sea grant supported informal education programs.
 - a. Environmental Sustainability education (25)
 - b. Certification program (10)
 - c. Recognition program (10)
3. Number of Sea Grant-supported graduates who become employed in a career related to their degree within two years of graduation.
 - a. Fellowships and internships (14)

Crosscutting Program Development

Following are program wide objectives that apply to all focus and topic areas.

Illinois-Indiana Sea Grant Goal: Meaningful resources are available to help Sea Grant Programs tell our stories.

Outcome: Case studies and trainings to demonstrate the value of Sea Grant activities.