

PENNSYLVANIA SEA GRANT 2014-2017 STRATEGIC PLAN

INTRODUCTION

PENNSYLVANIA SEA GRANT BACKGROUND

The National Oceanic and Atmospheric Administration (NOAA) established the National Sea Grant Program in 1966 to promote stewardship of coastal resources. In March 1998, Penn State Behrend, on behalf of Pennsylvania and Penn State University, received funding from NOAA to initiate a highly focused Sea Grant outreach project related to the Lake Erie watershed and coastline of Pennsylvania.

In specific, Penn State established Pennsylvania Sea Grant to promote the ecological and economic sustainability of Pennsylvania's coastal resources through science-based research, education, and outreach.

Major milestones for Pennsylvania Sea Grant:

- 2001 – the project expanded to include the Delaware River watershed.
- 2004 – based on performance over its initial six years as an outreach project and the University's reputation, National Sea Grant Office leadership determined that Penn State should lead the Sea Grant effort for Pennsylvania and that Pennsylvania's outreach project should be elevated to ***Coherent Area Program***.
- 2009 – elevated to ***Institutional Program***, which included a broader statewide mandate, including the Susquehanna River watershed, as well as an expanded research program
- 2014 – target date for elevation to final designation, ***College Program***.

PA Sea Grant works in three diverse regions:

- ***Lake Erie watershed*** that consists of the northern half of Erie County and the northwest corner of Crawford County. The dominant topographic feature of the watershed is the 77-mile shoreline of Lake Erie that includes the Presque Isle ecosystem with the 3,200-acre Presque Isle “flying sandspit” peninsula and Presque Isle Bay.
- ***Delaware River watershed*** includes a 57-mile stretch of tidal Delaware River coastline within Bucks, Philadelphia, and Delaware counties. The Delaware River is the world's busiest freshwater port, supporting one of the world's greatest concentrations of heavy industry and the second largest petrochemical refining center in the nation.
- ***Susquehanna River watershed*** is one of the largest watersheds in the Atlantic Slope of North America. In Pennsylvania, the Susquehanna River drains all or part of 43 of the 67 counties. The Susquehanna River is the largest tributary to the Chesapeake Bay, and provides half the freshwater flow to the bay.

PA Sea Grant, with input from regional and statewide advisors, provides leadership in four core program areas, including outreach, education, communication, and research. Hallmark activity areas include aquatic invasive species awareness, mitigation, and rapid response; control and/or removal of terrestrial invasive species; K-16 education, keeping pharmaceuticals and personal care products out of the environment; Areas of Concern, especially related to fish tumors and

contaminated sediment; watershed/wetland restoration and monitoring; and climate adaptation. Teams from PA Sea Grant and many partners work together to address activities within each core program area leading to an enhanced coastal environment and economy. In addition, Pennsylvania's location affords PA Sea Grant the opportunity to coordinate activities with the Mid-Atlantic and Great Lakes Sea Grant regions, as well as several U.S. Environmental Protection Agency and NOAA regions.

STRATEGIC PLAN BACKGROUND

This strategic plan supports four critical program areas for 2014-2017 and follows the outline set forth by the National Sea Grant Program, including national goals, Pennsylvania targets, and Pennsylvania strategies for each family of targets. The four critical areas are:

- ***Healthy Coastal Ecosystems***
Healthy ecosystems are the foundation for life along the coast. However, increasingly rapid coastal development, global overfishing, and other human activities are leading to water quality degradation, decline of fisheries, wetlands loss, proliferation of invasive species, and a host of other challenges that need to be understood in order to restore and maintain these ecosystems.
- ***Sustainable Fisheries & Aquaculture***
Pennsylvania fisheries managers, consumers, decision-makers, and the seafood industry adopt sound practices that lead to a sustainable supply of safe seafood to meet public demand
- ***Resilient Communities & Economies***
Sea Grant supports the development of innovative technologies and management policies, which allow coastal communities to accommodate ever-increasing numbers of people and activities that intensify demands on resources and may impact community resilience.
- ***Education & Workforce Development***
Sea Grant fosters the scientific, technical, and communication skills and understanding needed to address the environmental challenges confronting Pennsylvania to empower citizens and communities to utilize the latest scientific evidence to protect critical coastal resources and train a literate workforce.

STRATEGIC PLAN

- **Mission:** To promote the ecological and economic sustainability of Pennsylvania's coastal resources through science-based research, education, and outreach.
- **Vision:** To become a nationally recognized leader in providing coastal research, education, and outreach programs and services.

- **Guiding Principles:**
 - Serve as a balanced provider of information and services and not as an enforcer of regulations.
 - Incorporate a science-based approach to all program efforts.
 - Encourage the use of best available data and management practices.
 - Promote educational practices that engage participants in activity-based learning.
 - Foster collaboration among stakeholders with mutual interests.

- **Strategic Parameters:**
 - Utilize an ecosystem approach to watershed management of the Commonwealth's coastal resources, focusing on the Delaware, Susquehanna, and Lake Erie watersheds.
 - Capitalize on the intellectual and physical resources of Pennsylvania's colleges and universities.
 - Utilize a broad base of funding sources including public and private sources that are consistent with the program's mission.
 - Effectively integrate and collaborate with partner organizations such as National Oceanic and Atmospheric Administration (NOAA), CZM, and others.
 - Serve as a local resource to support and disseminate findings and resources of NOAA and other partner organizations.

PASG Focus Areas, Goals, Outcomes, and Targets

Healthy Coastal Ecosystems

Goal (national 1):

Ecosystem services are improved by enhanced health, diversity and abundance of fish, wildlife and plants in Pennsylvania coastal communities.

Outcome (national 1.1.):

Develop and calibrate new standards, measures and indicators of ecosystem sustainability for PA.

Target (national 1):

2 PA Sea Grant supported tools, technologies and information services are used to improve ecosystem-based management.

Outcome (national 1.3.):

Pennsylvania resource managers, policy and decision-makers use standards and indicators to support ecosystem-based management to assist in Pennsylvania coastal communities.

Target (national 2):

3 ecosystem based approaches will be used to manage land, water, and living resources in coastal areas as a result of Pennsylvania Sea Grant activities.

Goal (national 3):

Pennsylvania habitats and their ecosystems are protected, enhanced or restored.

Outcome (national 3.1.):

Residents, resource managers and businesses in Pennsylvania understand the importance of the benefits provided by preserving non-degraded ecosystems.

Target (national 1):

3 of Pennsylvania Sea Grant-supported tools, technologies and information services that are used to improve ecosystem-based management in Pennsylvania.

Outcome (national 3.2.):

Residents, resource managers and businesses in Pennsylvania understand the threats to ecosystems and the consequences of degraded ecosystems.

Target (national 1):

3 of Pennsylvania Sea Grant-supported tools, technologies and information services that are used to improve ecosystem-based management in Pennsylvania.

Outcome (national 3.3.):

Scientists develop technologies and approaches to restore degraded ecosystems in Pennsylvania.

Target (national 1):

1 Pennsylvania Sea Grant-supported tool, technology and information service is used to improve ecosystem-based management.

Healthy Coastal Ecosystems

Outcome (national 3.6.):

Critical habitats in Pennsylvania are protected.

Target (national 3):

1200 acres of ecosystems protected or restored as a result of Pennsylvania Sea Grant's involvement.

Outcome (national 3.7.):

Degraded ecosystem function and productivity in Pennsylvania are restored.

Target (national 3):

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

Goal (national 2):

Widespread use of ecosystem-based approaches to managing land, water and living resources in Pennsylvania.

Outcome (national 2.1.):

Stakeholders have access to data, models, policy information and training that support ecosystem-based planning, decision-making and management approaches in Pennsylvania.

Target (national 1):

6 Sea Grant supported tools, technologies and information services that are used to improve ecosystem-based management.

Outcome (national 2.1.):

Stakeholders in Pennsylvania have access to data, models, policy information and training that support ecosystem-based planning, decision-making and management approaches.

Target (national 1):

50 Pennsylvania Sea Grant supported tools, technologies, and information services will be used to improve ecosystem-based management.

Outcome (national 2.2.):

Baseline data, standards, methodologies and indicators are developed to assess the health of ecosystems and watersheds in Pennsylvania.

Target (national 1):

4 Pennsylvania Sea Grant-supported tools, technologies and information services that are used to improve ecosystem-based management in Pennsylvania. Four peer-reviewed publications produced by Pennsylvania Sea Grant./2 ecosystem based approaches...

Outcome (national 2.3.):

Residents, resource managers, businesses and industries in Pennsylvania understand the effects of human activities and environmental changes on coastal resources.

Target (national 2):

1 ecosystem based-approaches used to manage land, water, and living resources in coastal areas as a result of Sea Grant activities.

Healthy Coastal Ecosystems

Outcome (national 2.4.):

Resource managers in Pennsylvania have an understanding of the policies that apply to coastal protected species.

Target (national 2):

1 ecosystem based-approaches used to manage land, water, and living resources in coastal areas as a result of Sea Grant activities.

Outcome (national 2.6.):

Resource managers in Pennsylvania apply ecosystem-based management principles when making decisions.

Target (national 2):

2 ecosystem based-approaches used to manage land, water, and living resources in coastal areas as a result of Sea Grant activities.

Outcome (national 2.9.):

Residents, resource managers and businesses in Pennsylvania integrate social, natural and physical science when managing resources and work with all sectors in the decision-making process.

Target (national 2):

1 ecosystem based-approach is used to manage land, water, and living resources in Pennsylvania coastal areas as a result of Pennsylvania Sea Grant activities.

Sustainable Fisheries & Aquaculture

Goal (national 4):

A safe, secure and sustainable supply of seafood to meet PA public demand.

Outcome (national 4.7.):

PA Fishery managers and fishermen understand the dynamics of wild fish populations.

Target (national 4):

10 PA Fishery managers and fishermen understand the dynamics of wild fish populations.

Outcome (national 4.8.):

PA aquaculture Industry adopts innovative approaches to supply safe and sustainable seafood.

Target (national 4):

5 Aquaculture industry personnel modify their practices using knowledge gained in fisheries sustainability and seafood safety as a result of Sea Grant activities.

Resilient Communities & Economies

Goal (national 9):

Resilient Pennsylvania coastal communities adapt to the impacts of hazards and climate change.

Resilient Communities & Economies

Outcome (national 9.03.):

Pennsylvania communities have access to data and innovative and adaptive tools and techniques to minimize the potential negative impact from hazards.

Target (national 7):

2 Pennsylvania communities will implemented hazard resiliency practices to prepare for, respond to or minimize coastal hazardous events as a result of Pennsylvania Sea Grant activities.

Outcome (national 9.11.):

Pennsylvania communities are resilient and experience minimum disruption to life and economy following hazard events.

Target (national 6):

2 Pennsylvania communities that implemented sustainable economic and environmental development practices and policies as a result of Sea Grant activities (e.g. Land plan, w waterfronts, energy, climate plan, smart growth measures, green infrastructure).

Goal (national 7):

Support comprehensive planning efforts to assist Pennsylvania communities in making informed strategic decisions.

Outcome (national 7.3.):

Communities adopt coastal plans and/or complete surveys, studies and analyses that support these plans.

Target (national 6):

PASG will be directly or indirectly be involved in undertaking and completing 3 to 5 plans surveys, studies, and/or analyses.

Outcome (national 7.3.):

Communities adopt coastal plans.

Target (national 7):

3 Delaware County municipalities adopt climate adaptation plans that help minimize coastal hazardous events as a result of PASG activities.

Goal (national 8):

Support improvements in Pennsylvania coastal water resources to sustain human health and ecosystem services.

Outcome (national 8.2.):

Communities understand the value of clean water, adequate supplies and healthy watersheds. (as it relates to PPCP pollution and Contaminants of Emerging Concern)

Target (national 6):

1000 Erie County residents will understand why proper disposal of unwanted medicines is necessary.

Resilient Communities & Economies

Outcome (national 8.2.):

Communities understand the value of clean water, adequate supplies and healthy watersheds. (as it relates to PPCP pollution and Contaminants of Emerging Concern)

Target (national 6):

1 municipality (Erie County) becomes more knowledgeable re: impacts of improperly disposed PPCPs and takes steps to inform its residents on proper disposal

Outcome (national 8.2.):

Communities understand the value of clean water, adequate supplies and healthy watersheds.

Target (national 6):

12,000 Erie Times-News Tuesday readers, 48 teachers, and 6,000 students who receive the NIE classroom papers will participate in Sea Grant activities they read about on the NIE page including the ICC in the community/school.

Outcome (national 8.2.):

Communities understand the value of clean water, adequate supplies and healthy watersheds. (as it relates to PPCP pollution and Contaminants of Emerging Concern)

Target (national 6):

3 Erie County communities will implement practices which protect water supplies from PPCP contamination.

Outcome (national 8.5.):

Communities adopt mitigation measures, best management practices and improved site designs in local policies and ordinances to address water supplies and water quality.

Target (national 7):

3 hazard mitigation projects will be completed to minimize coastal hazardous events as a result of Sea Grant activities.

Goal (national 6):

Support the development of vibrant and resilient coastal economies in Pennsylvania.

Outcome (national 6.2.):

Erie & Delaware County communities have access to information needed to understand the value of waterfront and tourism-related economic activities.

Target (national 6):

1 community implements sustainable economic and environmental development practices and policies as a result of PASG activities

Resilient Communities & Economies

Outcome (national 6.7.):

The Erie community is involved with the Great Lakes Seaway Trail that capitalizes on the value of local natural and cultural resources while balancing resource conservation and economic growth.

Target (national 11):

PASG will directly apply for assist with the application of National Scenic Byway funds to interpret, plan, design, construct or conserve open space for 3 coastal quality of life projects that will promote sustainable econ. Dev. Along the GL Seaway Trail.

Environmental Literacy & Workforce Development

Goal (national 11):

A future PA workforce reflecting the diversity of the nation, skilled in science, technology, engineering, mathematics and other disciplines critical to Sea Grant's mission and national needs.

Outcome (national 11.1.):

PA Students and teachers are aware of opportunities to participate in science, technology, engineering, mathematics and active stewardship programs.

Target (national 9):

50 teachers and 1000 students annually will engage in Sea Grant supported informal education programs

Goal (national 10):

An environmentally literate public supported by a continuum of lifelong formal and informal engagement opportunities.

Outcome (national 10.2.):

Formal and informal educators understand environmental literacy principles.

Target (national 8):

2 PASG curricula adopted by formal and informal educators.

Outcome (national 10.2.):

Formal and informal educators understand environmental literacy principles.

Target (national 8):

3 PASG facilitated curricula adopted by formal and informal educators.

Outcome (national 10.3.):

PA Lifelong learners are able to engage in informal science education opportunities focused on coastal topics.

Target (national 9):

1700 participants

Environmental Literacy & Workforce Development

Outcome (national 10.4.):

Formal and informal educators understand environmental literacy principles.

Target (national 9):

45 educators annually will engage in Sea Grant supported informal education programs

Outcome (national 10.7.):

Formal and informal education programs take advantage of the knowledge of Sea Grant-supported scientists and engagement professionals.

Target (national 9):

2000 people annually will engage in PASG supported informal education programs in the DE area.
