



SEA GRANT

The **Pennsylvania Sea Grant** program is a partnership of Pennsylvania State University, The Commonwealth of Pennsylvania, and the National Oceanic and Atmospheric Administration (NOAA). We are part of the National Sea Grant College Network, which sponsors research, education, training, and outreach projects to foster science-based decisions about the use and conservation of coastal resources.

Pennsylvania Sea Grant promotes the ecological and economic sustainability of Pennsylvania's coastal resources through research and outreach. Our activities include science-based extension, education, and communication focusing on the Lake Erie and Delaware River drainages of Pennsylvania.

The primary goals of Pennsylvania Sea Grant are to:

- Enhance coastal tourism and sustainable land-use practices;
- Improve the understanding of the importance of Pennsylvania's coastlines among teachers and students of all ages;
- Support applied research on issues critical to coastal resources and management; and
- Transmit information about services available through NOAA and other partner organizations.



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SUSTAINING PENNSYLVANIA'S COASTAL RESOURCES



PENNSTATE



Erie The Behrend
College

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EXTENSION

Pennsylvania Sea Grant's outreach and extension programs address a variety of coastal issues, transferring science-based information to the public and identifying gaps where further research is needed. Focus areas include ecosystem stewardship, fisheries and native species, sustainable land use, and coastal safety and human health.

Here are a few of our current projects:

- Developed aquatic invasive species management resources for Pennsylvania in partnership with the Pennsylvania Invasive Species Council.
- Organized the *Delaware Estuary Fish Consumption Summit* to develop strategies to improve fish consumption risk communication and outreach.
- Conducted *Nonpoint Education for Municipal Officials (NEMO)* training to promote water-based planning and low-impact development.
- Facilitated land preservation efforts to protect important natural areas forever.



RESEARCH

Pennsylvania Sea Grant conducts research and supports applied research that addresses environmental issues relevant to the coastal resources of Pennsylvania. Focus areas include research to increase the understanding of aquatic invasive species, protect native and endangered species, and improve water quality.

Recent research topics include:

- Examining tumors of bullhead catfish as possible bioindicators of environmental contaminants;
- Determining the distribution and methods to control introduced flathead catfish in the Delaware Estuary tributaries;
- Evaluating outreach methods to improve fish consumption education;
- Investigating causes of avian botulism along Pennsylvania's Lake Erie shoreline; and
- Examining sediment contamination in Lake Erie's Presque Isle Bay and identifying sources of contamination input.

Pennsylvania Sea Grant also supports applied research through its participation in the Regional Science Consortium (RSC) at Erie's Tom Ridge Environmental Center. The RSC provides centralized laboratories and equipment and promotes research and education related to Lake Erie and the Upper Ohio River Basin.

EDUCATION

Pennsylvania Sea Grant's education programs focus on meeting the environmental education needs of schools and educators in the Lake Erie and Delaware River watersheds of Pennsylvania. Our goal is to enhance student and teacher environmental literacy by promoting activity-based curricula and programs that utilize sound educational methods. Pennsylvania Sea Grant also provides undergraduate and graduate internship and practicum opportunities.

Recent projects include:

- *Environmental Rediscoveries*, an ongoing program for teachers and students where participants become transformed into sailors and scientists on Lake Erie's Presque Isle Bay as they raise and lower sails, search for aquatic plants and animals, and learn about environmental quality.
- *Aquatic Invasive Species: the Good, the Bad and the Prolific*, a professional development workshop series for teachers in Pennsylvania, Maryland, and Delaware to address the gap in aquatic invasive species understanding among educators. Each workshop emphasizes issues relevant to the region and provides hands-on experiences to increase awareness of the impact of aquatic invasive species and their relevance to state science curriculum standards.
- *Project STEAR (Shipwreck Training Education Archaeology Research)*, an online interactive program about Lake Erie's maritime history from a ship's last voyage to present day efforts to preserve and protect these valuable underwater cultural resources.

