



# Sustaining Wisconsin's Great Lakes Assets

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With nearly 1,000 miles of Great Lakes shoreline, Wisconsin has a great stake in the health of the nation's fourth seacoast. Wisconsin's population in 2000 was estimated at 5.4 million, almost 40 percent of whom lives in the 15 counties bordering Lake Michigan and Lake Superior. The state's four heavily urbanized, industrialized southeastern coastal counties—Kenosha, Racine, Milwaukee and Ozaukee—are home to about 25 percent of Wisconsin's population. These coastal counties and adjacent inland counties have experienced above-average population growth for the last 20 years.

Increasing coastal population illustrates growing appreciation of—and pressure on—our Great Lakes resources. According to a recent public opinion survey, Wisconsin residents are more likely than others in the region to personally identify with the Great Lakes. They are more likely to agree with the statements that the Lakes are “one of the reasons I live here” and “vital to the economy of the region.” They value the Great Lakes as “unique places to fish, boat and swim.”

The University of Wisconsin Sea Grant Institute addresses the needs and concerns of state residents regarding their Great Lakes resources. Wisconsin Sea Grant supports research, education and outreach to enhance the practical use and conservation of Great Lakes resources to create a sustainable economy and environment.

## What Is Sea Grant?

Sea Grant is a federal-state partnership whose mission, as mandated by Congress, is to foster the sustainable development of the nation's coastal resources. Operating through a university-based network, Sea Grant supports interdisciplinary research, education and outreach to help balance the conservation of coastal, Great Lakes and marine resources with a sustainable economy and environment. One of 30 such programs in the nation, Wisconsin Sea Grant addresses a broad range of issues, with an emphasis on aquaculture, aquatic invasive species, coastal engineering and coastal geographic information systems (GIS).

## ISSUES

- **Sea Grant's Aquaculture Advisory Services Program has become a principal source of information and technical assistance to the state's rapidly developing, multimillion-dollar aquaculture industry. Over the last five years, more than 3,000 Wisconsin citizens have attended aquaculture conferences, workshops and lectures sponsored by UW Sea Grant.**
- **Sea Grant-supported development and training projects have helped accelerate the use of GIS in Wisconsin for coastal zone management, including shoreline zoning, nonpoint-source pollution control, and mapping coastal erosion and recession rates.**
- **The biological and economic impacts of aquatic invasive species loom large. Wisconsin's power and water utilities spend an estimated \$5 million annually trying to protect water intakes from zebra mussels. Sea Grant has supported zebra mussel research, monitoring programs and educational outreach for over 15 years, and continues to partner with state, regional and federal programs to thwart the invasion of other species, such as Asian carp.**
- **As a science-based, nonadvocacy program, Sea Grant plays an important role in providing non-biased information to everyone with a stake in Great Lakes management. In 2004, Sea Grant organized and hosted workshops in Duluth, Green Bay and Milwaukee for public input on Great Lakes restoration priorities.**

UW Sea Grant provides an essential link between Wisconsin researchers, users and managers of Great Lakes and ocean resources. Wisconsin Sea Grant research and advisory services activities in the areas of commercial fishing, coastal engineering and water resources management in one year alone saved or generated \$5.6 million at a time when the federal Sea Grant appropriation to Wisconsin was just \$1.8 million.

## Great Lakes Research

The National Sea Grant College Program annually awards the University of Wisconsin Sea Grant Institute nearly \$2.0 million in support of a federally approved biennial program. Coupled with almost \$1.4 million in matching funds from the State of Wisconsin, the federal grant supports about two dozen Great Lakes-related research, outreach, and education projects typically involving about 100 faculty, staff, and students at UW System campuses and other universities and colleges around the state (see map). Research highlights include:

- Using DNA fingerprinting and antibiotic resistance profiling to locate and examine the sources of bacterial and viral contamination causing Lake Michigan beach closings;
- Understanding the impacts of invasive species like zebra mussels on Great Lakes ecosystems;
- Documenting high levels of PBDEs (polybrominated diphenyl ethers), a common flame retardant, in Lake Michigan fish;
- Developing options for protecting essential nearshore habitats;
- Understanding the effects of dioxins on the health of fish, and
- Assisting Wisconsin coastal communities with “Smart Growth” planning.

## Statewide Outreach

UW Sea Grant outreach extends the program’s research activities to address the informational needs of audiences throughout Wisconsin and beyond. Six Sea Grant Advisory Services specialists provide free statewide assistance in aquaculture, ecosystem restoration, water quality issues, coastal engineering, marine safety, education, geographic information systems, fisheries and aquatic invasive species. Operating from field offices in Green Bay, Madison, Manitowoc, Milwaukee and Superior, these outreach specialists provide an essential link for conveying research needs and research results between the academic community and Great Lakes resource managers and users.

The program also supports professional communications specialists who work with researchers and advisory services staff to develop and distribute a variety of information products for a wide range of state, regional and national audiences, including research and outreach publications, news releases, newsletters, Web sites, radio programs, videotapes, computer models, posters and exhibits.

## Sea Grant Supports Statewide Research and Outreach



## Education

Sea Grant is committed to educating future professionals and leaders and to enhancing aquatic science literacy among the public. Wisconsin Sea Grant research is supporting about 20 graduate students and two dozen undergraduate students. Since 1968, UW Sea Grant assistantships have helped nearly 600 students earn advanced degrees.

K–12 education projects include co-sponsorship of the Lake Sturgeon Bowl, a statewide high school competition at UW-Milwaukee and qualifier for the annual National Ocean Sciences Bowl.

## The UW Aquatic Sciences Center

Sea Grant is part of the UW Aquatic Sciences Center on the UW-Madison campus. The center is home to the Water Resources Library, a collection of nearly 30,000 volumes of water-related information available to UW faculty, staff and students; K–12 teachers; private consultants, and state and federal government officials.

The Aquatic Sciences Center also houses the UW Water Resources Institute, part of another federal-state partnership of 54 university programs that promote research, outreach and education dedicated to solving state, regional and national water problems. This unique administrative union of Wisconsin’s federal Water Resources and Sea Grant programs enables the UW Aquatic Sciences Center to address the full range of water-related issues in Wisconsin, from surface water to groundwater, from the Mississippi River to the shores of Lakes Michigan and Superior.