Wisconsin Great Lakes Chronicle
2008

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FOREWORD

Governor Jim Doyle

Dear Friend of Wisconsin's Great Lakes:

The Great Lakes are a globally important natural, cultural and economic resource. Wisconsin is blessed with over 1,000 miles of shoreline on Lakes Michigan and Superior. From urban waterfronts to recreational and wild places, our Great Lakes shores and waters are the foundation for much of Wisconsin's heritage, economy and drinking water.

Protecting and enhancing our Great Lakes is one of my highest priorities as Governor. Over the past several years, we have made major strides to build a long term foundation to protect our Great Lakes. In this year—when we celebrate the thirtieth anniversary of the Department of Administration's Wisconsin Coastal Management Program—we have many Great Lakes victories to celebrate.

In December 2005, eight governors and two Canadian premiers representing the Great Lakes came together in Milwaukee to endorse the Great Lakes Compact. Our strong commitment to the water, land and peoples surrounding all of the Great Lakes has led the region's leaders to work together to ensure that the Lakes are protected, conserved and managed.

The Compact protects Great Lakes communities by creating standards for sustainable management of Great Lakes waters. The Compact bans long-distance water diversions, but also sets up a process for communities near the basin to receive water from the Great Lakes. These communities will have clear standards that allow for water use in sustainable ways.

Wisconsin ratified the Great Lakes Compact in 2008 creating unprecedented protections for the Great Lakes and ensuring their continued viability to support regional economic growth and resource protection for generations to come.

Containing more than 20% of the world's surface fresh water, the Great Lakes will continue to grow in importance. One of our greatest competitive advantages in a 21st Century global economy is our water—water that will help Wisconsin businesses grow and draw new businesses to our state.

In July 2008, the last of the Great Lakes state legislatures ratified the Compact in coordination with the Canadian provinces of Quebec and Ontario; approving the agreement shows full regional coordination to protect our precious Great Lakes. As this is written in August 2008, we are working with Congress and the President to pass the Compact and give its protections the power of federal law.

As Chair of the Council of Great Lakes Governors, I want to thank all of the dedicated residents and local, tribal and Canadian government officials who supported the progress of the Great Lakes Compact. The Great Lakes region is uniting as never before to protect one of the world's greatest natural resources.

I would also like to thank the Wisconsin Coastal Management Council, the program staff and the many state, local and tribal governments, nonprofit organizations and individual citizens who for the past 30 years have worked cooperatively to protect and enhance our Great Lakes and coastal areas.

I hope you will celebrate with me this year's accomplishments and join me in protecting the future health of Wisconsin's Great Lakes system. Working together, we can ensure that our children and grandchildren have the same opportunities to enjoy the Great Lakes that we have today.

The St. Louis River estuary is home to a diverse ecological system and the Great Lakes' largest port.

ST. LOUIS RIVER FRESHWATER ESTUARY

Becky Sapper

People tend to think of areas like Chesapeake Bay when they hear the word *estuary*. They imagine large river mouths that empty freshwater into the ocean, or wetlands where fresh and saline waters mix. But another kind of estuary exists here in Wisconsin. If one has ever fished, hunted, paddled or hiked along Wisconsin's Lake Superior coast—or simply driven through Ashland or Superior—they have seen a *freshwater estuary*.

Sometimes called sloughs, freshwater estuaries occur where a drowned river mouth empties into the Great Lakes. While saltwater estuaries are affected by lunar tides, freshwater estuaries are affected by wind tides and soup bowl-like sloshing called a seiche. Differences between the river and lake water—such as pH, water temperature and conductivity—create a unique habitat where they come together in shallow wetlands. The dynamic mixing and water level changes within a freshwater estuary create habitat shared by species that use both the river and lake.

Lake Superior's freshwater estuaries are both nursery and kitchen for diverse populations of aquatic plants, fish, wildlife and waterfowl that rely on them for shelter, food and spawning. Estuaries also benefit people. These shallow coastal wetlands slow runoff and act as filters to reduce erosion and sedimentation. They provide places for hunting, fishing, recreation and tourism activities. Lake Superior's freshwater estuaries and coastal wetlands are an important part of what defines the quality of life in the Lake Superior basin.

More than 20 freshwater estuaries grace Wisconsin's Lake Superior shore. One of these freshwater estuaries occurs on the largest United States tributary to Lake Superior, the St. Louis River.

The St. Louis River flows 179 miles through a watershed encompassing 3,634 square miles within Wisconsin and Minnesota. As it approaches the City of Superior, the river slows and spreads into a 12,000-acre freshwater estuary characterized by numerous bays and islands. Undeveloped tracts are interspersed with parks, public access points, homes, businesses, industry and a major international port system. The St. Louis River discharges more than 17,000 gallons per second into Lake Superior.

The combination of ecosystems within the St. Louis River estuary is unique in Lake Superior, the Great Lakes region and the world. The estuary is home to a diverse array of native birds and a critical stopover location for migratory birds—more than 230 species have been documented.

The estuary provides prime breeding habitat for wildlife and fish including threatened, endangered and game species. Its large warm-water fish community of roughly 54 species includes an estimated 50,000-90,000 spawning walleye. The baymouth bar complex of communities—also known as the barrier spits of Minnesota and Wisconsin Points—is the world's largest freshwater sandbar.

The St. Louis River freshwater estuary provides one of the world's best examples of seiche interaction. While the back and forth movement of water is continuous, the size of the seiche varies depending upon weather and winds, usually fluctuating from 3 to 25 cm during an event. The seiche can reverse the flow of the river 11 miles upstream to the Oliver Bridge.

Another important aspect of the St. Louis River estuary is its active working port. With iron ore and coal docks, grain elevators and specialized cargo facilities lining the industrial waterfronts, the Duluth and Superior ports serve shippers and receivers throughout the Midwest, Great Plains and Canada. The port's navigation season usually begins in late March and continues until mid-January serving 1,100 vessels. Duluth-Superior is the largest port on the Great Lakes and ranked number one on the Lakes for total cargo volume of 45 million net tons annually.

The St. Louis River estuary has 96 miles of shoreline in the City of Superior alone. More than 10,000 acres on the Wisconsin side of the St. Louis River are in public ownership through the City, Douglas County, Wisconsin Department of Natural Resources and the University of Wisconsin-Superior. Numerous places along the Superior waterfront and many of the tributaries that enter the St. Louis River and Superior Bay provide public access.

The St. Louis River freshwater estuary was recently nominated by Wisconsin Governor Jim Doyle as a National Estuarine Research Reserve (NERR) site. The NERR program is a non-regulatory federal and state partnership administered by the U.S. National Oceanic and Atmospheric Administration (NOAA). The program provides federal funding and technical support to advance estuary research, education and stewardship.

The only other Great Lakes NERR site is located hundreds of miles to the southeast on Lake Erie at Ohio's Old Woman Creek. The St. Louis River freshwater estuary is an excellent setting for research and education activities on the upper Great Lakes. A Lake Superior NERR designation would be significant for Wisconsin, the region and the nation.

Numerous Wisconsin and Minnesota-based academic institutions, government agencies, and advisory and action committees have played a critical role in telling the St. Louis River story. The proposed NERR designation would take their research from the St. Louis to the larger Great Lakes basin and the world.

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A revitalized Kinnickinnic River will improve the quality of life on Milwaukee's south side.

SAVING THE KINNICKINNIC

Ben Gramling

Wisconsin's Great Lakes and their tributaries mean many things to Wisconsin's diverse population. Our open waters provide recreational boating opportunities and commercial shipping avenues. Our shorelines and river corridors offer respite from the urban grind and a hard day's work on the farm. They are a thread in the fabric of home to humans, plants and wildlife alike. Wisconsin's coastal resources add value to our lives and state every day.

But what if your neighborhood river looked more like a concrete highway than a pristine, meandering creek? What if you had a better chance of seeing a shopping cart in the water than a northern pike? Suppose that your experience with Wisconsin's water resources was shaped not by the Lake Michigan shoreline, but by the drainage ditch at the end of your block that swells with dangerously fast moving water after rainstorms? Would you see the local river as a neighborhood asset or a dreaded liability? For many residents of Milwaukee's Kinnickinnic River corridor, the city's "forgotten river" provides only fear and worry.

In the 1960s and 1970s, a concrete lining was installed to channelize most of the Kinnickinnic and its tributaries. This lining served as a flood control measure that moved water into Lake Michigan as quickly as possible. Much of this concrete-lined river flows through heavily residential neighborhoods. In fact, the Kinnickinnic is Wisconsin's most densely populated watershed.

Citing the concentration of development within this watershed, the nationwide advocacy group American Rivers in 2007 designated the Kinnickinnic as one of America's ten most endangered rivers. The group said "more than 1.5 million people have a front row seat to the problems and have a vested interest in restoring the river."

The Kinnickinnic's concrete channel presents a number of challenges locally and to the region. Each challenge must be addressed if the Kinnickinnic is to add value to the community like so many of Wisconsin's other water resources. Its current ecological value is minimal with little or no vegetation, poor habitat and physical barriers to fish migration. The Kinnickinnic lacks community value because local families do not connect to and appreciate the river. Residents generally perceive the river as a waste stream and serious drowning hazard, especially in summer months when heavy rains produce fast moving and dangerous currents.

Today, the concrete lining placed in the river forty years ago is nearing the end of its life cycle. A comprehensive long-term solution is needed to spur economic, ecological and community improvements along with floodwater management. It is with this outlook that Sixteenth Street Community Health Center, Groundwork Milwaukee and the Milwaukee Metropolitan Sewerage District—with support from the Wisconsin Coastal Management Program—have teamed to tackle the Kinnickinnic River's concrete channel. These groups are planning for concrete removal along a 2.5-mile stretch of the Kinnickinnic River between 27th Street and Chase Avenue on Milwaukee's near south side.

The project area targeted for this effort is home to a significant portion of Milwaukee's Hispanic population including many immigrants recently arrived from Mexico, Puerto Rico and other parts of Latin America. Language and cultural characteristics of Milwaukee's south side immigrant population influence how community members perceive and interact with large public sector entities that are typically involved in a project of this magnitude.

If the Kinnickinnic River project is to succeed, it must be well understood that economic circumstances are tough for many of these families. Making rent payments and paying for groceries will always have a higher priority than participating in the environmental cleanup and revitalization of the neighborhood river.

As a trusted organization that has served Milwaukee's south side for nearly 40 years, the Sixteenth Street Community Health Center has built a strong reputation by providing culturally and linguistically sensitive health care services and successful educational outreach empowering local families to improve their health. The Kinnickinnic community planning project team will rely on this experience and a community partner approach as it communicates the complex science and engineering work that must precede the ultimate restoration of the river.

Churches, schools, community centers, block watch groups and individual leaders in the community will serve vital roles in this planning process. These entities and individuals will engage the public in discussion about the future of the concrete-lined river and the benefits a revitalized river corridor will bring to their neighborhoods. The project team has also developed a strategy to ensure ongoing resident support to foster active participation in decision making about the future of their neighborhood and the health of their river.

Summer 2008 will be an important time of learning and engagement for local residents, for the planning process that will drive the removal of the Kinnickinnic River's concrete lining and for creating a long-term vision and plan for revitalizing Milwaukee's Kinnickinnic River corridor.

Every partner working on this project is committed to ensuring that these activities will lead to the kind of community value Wisconsin's coastal resources can generate for all residents—no matter where they live or which language they speak.

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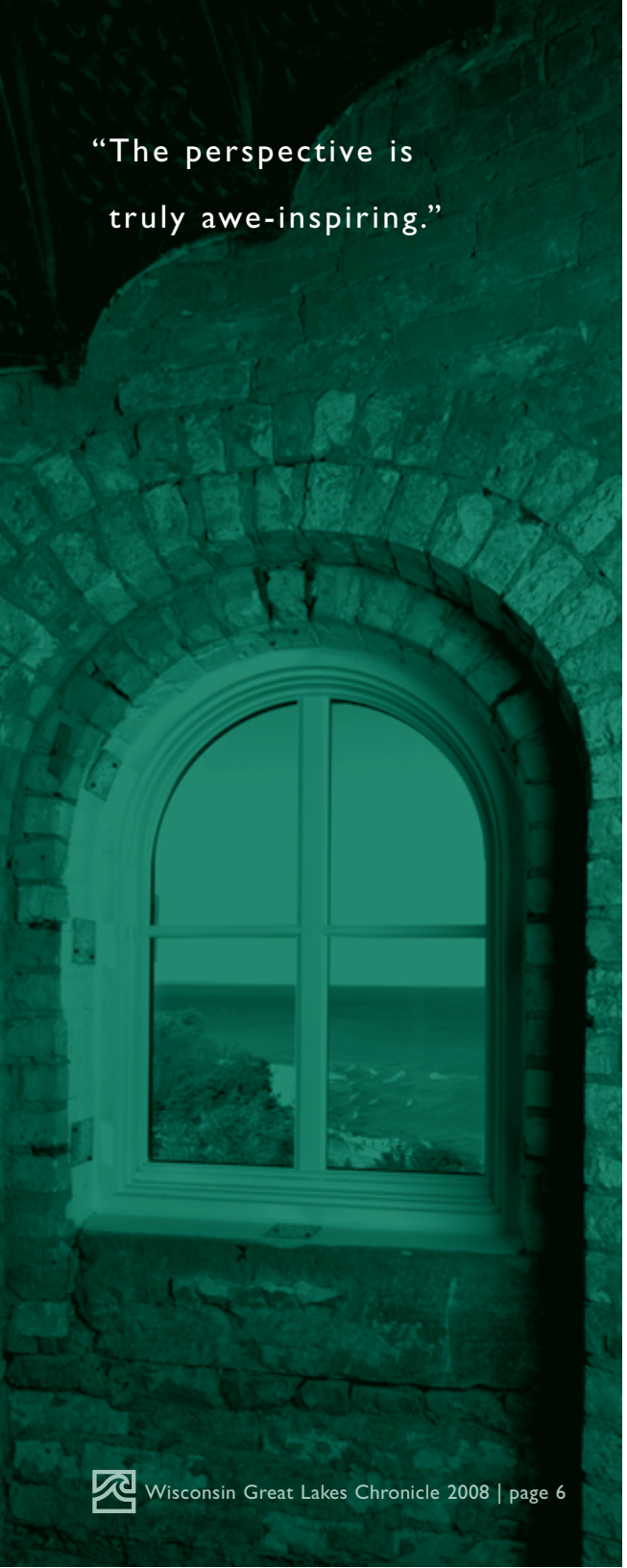

WIND POINT LIGHTHOUSE: GATEWAY TO THE STARS

Bill Schalk

The Wind Point Lighthouse is truly a gateway to the stars. Capt. Laurel Salton Clark, U.S. Navy Mission Specialist on the ill-fated space shuttle Columbia, sent an e-mail to family and friends on January 31, 2003 stating: "The perspective is truly awe-inspiring…Magically, the very first day we flew over Lake Michigan and I saw Wind Point."

It is not strange that astronaut Clark saw Wind Point from outer space while traveling at 17,000 mph. This jagged point 25 miles south of Milwaukee and its lighthouse have been a beacon for mariners since the 19th Century.

The majestic Wind Point Lighthouse was designed and built by Orlando Poe in 1880 for the federal government. It remained federal property until the Village of Wind Point acquired it in 1997. The light at the top of the tower stands 112 feet above the lake. The tower itself is 108 feet tall and contains 144 steps to the light.

From 1880 until 1964, only seven keepers maintained the Lighthouse for the U.S. Coast Guard. Their primary job was to maintain the light as a key navigation aid for ships and boats on the lake. In 1924, the light's kerosene lamp was replaced with an electrified 300-watt bulb that was changed monthly. In 1964, the lens was replaced by a fully automatic system. The new system used a 1,000-watt bulb and a reflector that amplified the light intensity to two million candlepower. Today, a 100-watt bulb accomplishes the same intensity. After the light was automated in 1964, the Wind Point Lighthouse no longer required a resident keeper.

In 1963, the Village Board learned there was a possibility of obtaining possession of the lighthouse property and appointed a committee to pursue the project. In 1964, the lighthouse committee signed a five-year renewable lease for the property with the Coast Guard. The Village and Coast Guard went on to sign seven consecutive leases through 1997.

The lease required no payment to the federal government, but the Village assumed costs for maintaining the tower and property. The Coast Guard remained responsible for the beacon.

With the departure of the Coast Guard lighthouse keeper, the Village hired a caretaker to tend to the buildings and property. As it does today, the grounds consisted of the main building including the lighthouse tower and house with three apartments, the Horn House, a garage, a small storage building and two acres of land.

In 1964, the new caretaker moved his family into the largest apartment in the main building. The Village Board used the remainder of the building

for a police station and municipal meetings, a configuration that exists to this day. The grounds have since been available for recreational purposes. The Lighthouse was placed on the National Register of Historic Places in 1984.

In February 1997, the federal government notified state and local authorities that it would declare the lighthouse area and tower surplus property. According to the notice, "[A]ny party interested in acquiring it had twenty days to express interest by requesting an application to acquire the property."

John Schmit, the Village Deputy Clerk, spent several months creating an application book to acquire the property. Former caretaker Mike Cooper took photographs of every building inside and out. The effort worked! In September 1997, the Coast Guard signed the deed transferring the Lighthouse from the National Park Service to the Village of Wind Point. Since the building and grounds are on the National Register of Historic Places, the National Parks Service must approve any modifications to the buildings.

The Friends of the Wind Point Lighthouse was formed in 1999 as a 501(c)(3) nonprofit organization to "promote, protect and encourage the historic preservation of the lighthouse."

Monies generated by membership dues and fund raising events have been used to increase awareness of the history of the Lighthouse and beautify the grounds.

The members of the Friends pursue their mission with a passion that is evident in everything they do. Any municipality that takes over a historic property needs a group like the Friends to be part of the ongoing operation because local governments are limited in terms of people-power, finances and creativity to get things done.

Today, the Wind Point Lighthouse retains its 128-year mission as a key navigation aid along Lake Michigan. In addition, it is showcase piece for Racine County. The Lighthouse appears on many magazine covers, brochures and travel itineraries; the Racine Convention Bureau estimates that more than 20,000 people visit this icon yearly.

One must balance the needs of the community, cost to maintain and political factors when dealing with an icon like a lighthouse. The issues are dealt with through responsible taxation, the balancing of the residents' desires and needs, and the entire community's right to public access of a publicly funded historic property. The beauty of the property along with the peace and joy it brings to every visitor is worth the effort.

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Effective conservation and efficiency programs will ensure the long-term sustainability of Wisconsin's water resources.

CONSERVATION ENSURES GREAT LAKES SUSTAINABILITY

Jeff Ripp

Wisconsin residents have access to abundant freshwater supplies in part due to the state's proximity to the Great Lakes. Throughout history, Wisconsin's coastal cities have relied on Lake Michigan and Lake Superior for clean, affordable water. Today, the waters of the Great Lakes basin—including its groundwater resources—provide drinking water to nearly half of Wisconsin's 5.6 million residents.

Forty-five Wisconsin public water utilities withdraw more than 100 billion gallons of water per year directly from the Great Lakes for domestic, commercial, industrial and public uses. Another 135 utilities rely on the basin's groundwater resources to supply an additional 25 billion gallons of water per year. Other water users—including agriculture, thermoelectric power plants and self-supplied domestic and industrial users—withdraw many more billions of gallons each year. While most of this water eventually returns to the Great Lakes after it is used and treated, some is consumed or diverted outside of the basin.

Despite the vast quantities of water in the Great Lakes—up to 20 percent of the world's fresh surface water—it is important to recognize that this resource is not limitless. In fact, some estimates show that only one percent of the available water is renewed every year. Nationwide, portions of 36 states are expected to face water shortages in the next decade. Even in Wisconsin, regional and temporal water shortages are emerging.

For example, groundwater withdrawals have exceeded the rate of natural recharge in some parts of the state. Elsewhere, contaminants limit the availability of groundwater for human uses. Further, there are increasing concerns about Great Lakes water levels including the effects of climate change and diversions that permanently remove water from the basin. Finally, anticipated population growth and economic expansion throughout the basin are expected to place additional strains on the Great Lakes.

Historically, water utilities have developed new wells or increased their surface water capacity to meet growing demands for water within their communities. However, declining water levels, new groundwater laws and regional efforts to regulate withdrawals from the Great Lakes are making it more costly and difficult to develop new sources of supply. Instead, many water utilities are finding that water conservation is the most cost-effective way to stretch existing supplies, manage customer demand, reduce energy use, lower utility operating costs and protect valuable aquatic resources.

The Public Service Commission of Wisconsin (PSC), an independent state agency responsible for regulating the rates and standards of service of public utilities, is leading a statewide initiative to assist water utilities with implementing water conservation and efficiency programs. The PSC's efforts include both demand-side and supply-side solutions that will improve water efficiency. Specifically, the PSC is working with utilities to:

- reduce water lost through leaky distribution systems and inaccurate meters
- establish water rates that encourage efficiency and discourage wasteful practices
- promote water-saving products and practices through partnerships such as the U.S. Environmental Protection Agency's WaterSense program, and
- raise public awareness of water efficient behavior through education and outreach

In 2008, the PSC will work with the Wisconsin Department of Natural Resources and other state agencies to develop water conservation and efficiency goals for the Wisconsin portion of the Great Lakes basin. This is one component of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement signed in December 2005 by the governors of the eight Great Lakes states and the premiers of Ontario and Quebec. Among other things, this good-faith agreement requires the states and provinces to work towards adopting the Great Lakes-St. Lawrence River Basin Water Resources Compact and develop water conservation goals and objectives for the Great Lakes.

Each state's conservation goals and objectives must be consistent with region-wide goals adopted by the Council of Great Lakes Governors. Wisconsin's goals and objectives will not only identify where improvements in water efficiency can be made, but also recognize those things water utilities are already doing to promote conservation and efficiency. These include metering water sales, reporting water use and eliminating wasteful water use practices.

These goals and objectives will lead to a coordinated, statewide approach to water conservation and efficiency. However, this does not mean that a one-size-fits-all approach will be the answer for every water utility. It is important to recognize that water conservation and efficiency measures must be tailored to the unique circumstances of each community.

Water is fundamental to Wisconsin's culture and economy. All water users—including water utilities, industry, agriculture and private well owners—have a stake in the sound management of Wisconsin's water resources. Effective water conservation and efficiency programs will help Wisconsin meet its water supply needs, reduce energy costs and ensure the long-term sustainability of the state's water resources. Using water wisely today means that future generations will continue to enjoy and benefit from our unique national treasure, the Great Lakes.

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Wisconsin recreational boaters spend $650 million annually to maintain and use their watercraft on the Great Lakes.

ECONOMICS OF GREAT LAKES RECREATIONAL BOATING

Dave Knight

Recreational boating is big business in Wisconsin. But just how big has historically been an elusive statistic.

A recent study estimated that Wisconsin boaters in 2004 spent almost $1 billion to keep and maintain their boats and another $1.5 billion on boating trips. Of those combined amounts, about one-quarter—or $650 million—was spent on recreational boating on the Great Lakes. The same study estimated that recreational boating in Wisconsin supported over 36,000 jobs.

The motivation to develop this state-centric economic portrait originated with the federal government. Under federal policy going back to the early 1980s, recreational harbors are a low priority for dredging and other maintenance; in fact, the U.S. Army Corps of Engineers (Corps) is not allowed to include recreational harbors in its operation and maintenance budget. Therefore, all federal funds for the dredging of recreational harbors come from congressional earmarks.

In the Water Resources Development Act (WRDA) of 1999, Congress considered the broad economic impact of recreational boating in Great Lakes states. In so doing, it directed the Corps to quantify the economic benefits of boating in the Great Lakes and examine federal interest in the operation and maintenance of recreational harbors on the Lakes.

The study was assigned to the Great Lakes Commission, an organization created by compact of the eight Great Lakes states and Canadian provinces of Ontario and Québec and dedicated to the wise use and protection of the Great Lakes basin. The Commission in turn worked with Michigan State University's Recreational Marine Research Center (RMRC) to conduct an analysis in 2003-04.

U.S. Coast Guard boat registration data for 2003 indicated almost 4.3 million recreational boats in the eight Great Lakes states including 611,000 in Wisconsin. Wisconsin ranked fifth in the country behind Florida, California, Michigan and Minnesota for its number of registered boats. The Great Lakes states together are home to about one-third of all registered U.S. recreational vessels.

The study found that nearly one quarter of all recreational boats in Great Lakes states belonged to people residing in Great Lakes shoreline counties. This was an important factor in calculating how many of the states' registered boats were used primarily on Great Lakes waters. In Wisconsin, 162,171 boats were registered in Great Lakes coastal counties, or about 26 percent of the state's total registrations.

From 1999 to 2003, five of the Great Lakes states saw recreational boat registrations increase or remain stable. Wisconsin experienced the region's strongest growth at 8.5 percent followed by Minnesota at 6.6 percent. Three states—Indiana, Michigan and Illinois—had declining boat registrations over that period. The typical boat in Wisconsin is an aluminum fishing boat; the most prevalent size is 12 to 15 feet in length. Among all Great Lakes states, the most popular boat is a 16 to 24-foot fiberglass runabout.

The study used a unique methodology to collect boater trip and craft spending information. Data was obtained independently from on-line assessments conducted by the RMRC using a National Boater Panel. The Panel consisted of boaters across the country who were asked to complete an on-line survey during the course of 2004 related to craft spending—cost to buy, keep and maintain the boat—and trip spending—the cost of actual outings.

Beginning in May 2004, 6,000 Panel members were surveyed every two weeks concerning their most recent boating trips. Each member received emails during the summer asking them to describe a boating trip they took during the proceeding two weeks including those things on which they spent money.

Information was collected on approximately 8,000 boating trips taken by the owners of different size boats. Geographically indexed analyses indicated that Great Lakes boater spending did not vary to any significant degree from national patterns, so the Panel-generated data was deemed appropriate for the study's regional application.

According to the RMRC, an average Great Lakes boat owner spent about $3,600 per year including $1,400 on craft-related expenses (e.g., equipment, repairs, insurance, slip fees) and $2,200 on outings (e.g., gas and oil, food, lodging) involving an average of 23 boating days. These averages were dominated by a high percentage of smaller watercraft. Owners of larger boats spent considerably more than these averages with up to $20,000 per year for boats 41 feet and more.

Average spending per boat day on trips varied from $76 for boats less than 16 feet in length to $275 per day for boats larger than 40 feet. The greatest outing expenses were for boat fuel (22%), restaurants and bars (17%) and groceries (14%). The fuel percentage would likely be higher today than in 2004. The majority of annual craft expenses were for equipment (39%), maintenance and repair (29%) and insurance (14%).

One long-running joke defines a recreational boat as "a hole in the water into which vast sums of money are poured." Now, for the first time, we have a much better picture of how vast and precisely where those sums are poured. The aggregate contribution of recreational boating to Wisconsin's and the Great Lakes' regional economy is a powerful and potentially growing force.

Study findings can be accessed through the Great Lakes Commission website at http://www.glc.org. The full draft report can be viewed at the U.S. Army Corps of Engineers Detroit District website at http://www.lre.usace.army.mil/what/detroitresources/ under planning studies and the John Glenn Great Lakes Basin Program.

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Green Tier charters address environmental concerns by bringing the right mix of people to the table.

GREEN TIER CHARTERS

Jeffrey Voltz

Wisconsin's Green Tier Program offers a paradigm shift in environmental protection from traditional command-and-control to collaboration by calling to action individuals, companies and communities to commit voluntarily to superior environmental performance. This collaborative approach stands to benefit both Wisconsin's economy and natural environment including waters.

In 2004, the Wisconsin Legislature passed Wis. Stats §299.83, commonly referred to as the Green Tier Law. The law included a unique opportunity to form charters as a new means of environmental management.

Charters represent a major departure from traditional environmental policies that tend to manage environmental risks within the confines of fence lines and political jurisdictions. Instead, charters align problem solving with the scope of the problem by bringing the right mix of people to the table. Charters give legal standing to new alliances to produce beyond compliance environmental performance, address unregulated or under-regulated risks and voluntarily restore, preserve or enhance natural resources.

Two recently signed Green Tier charters have moved environmental protection discussions from *proof of concept* to *concept in practice*. Each approach establishes a voluntary framework that includes the systematic improvement of water quality—one for dairy farms and another for municipalities.

Dairy Charter. Dairy farms impact Wisconsin in many positive ways. A Green Tier charter with the Dairy Business Association (DBA) is helping ensure environmental impacts from dairy farms are positive as well.

The Green Tier charter with the DBA is built on the results of two projects in the Lakeshore basin: the Dairy Gateway Project and the Agricultural Watershed Improvement Network. These initial efforts laid the foundation for further development of Environmental Management Systems (EMS) within the dairy industry.

Funding from the Wisconsin Coastal Management Program provided necessary support for the development of a dairy charter. The resulting DBA Green Tier Charter enables dairy producers, the DBA and the Wisconsin Department of Natural Resources (DNR) to collaborate on implementing tailored EMSs and systematically tackle a variety of environmental issues including manure management, storm water run-off and energy efficiency.

The DBA and DNR will provide opportunities for dairy producers to participate in pilot projects, mentorships and farm walks/tours to assist in understanding and adopting environmental

practices that go beyond what is currently required by Wisconsin law. In addition, the DBA Green Tier Charter will establish a diverse group of interested persons, including the environmental community. This group is charged with three main tasks:

- Improve communication with stakeholders and the public through activities including workshops and promotional advertisements
- Develop specific recommendations to further the goals of the charter including environmental goals for the dairy industry
- Establish methods of monitoring and measuring the environmental performance of DBA Charter members

The previous efforts within the Lakeshore basin and the recently signed DBA Charter address environmental, economic and social issues. All are critical components of alleviating the impacts of water pollution and other management issues affecting the Lakeshore basin and Wisconsin in general.

Municipal Mercury Charter. Mercury is a significant pollutant in Wisconsin's waters. For instance, DNR and the Department of Health Services have issued a statewide fish consumption advisory because of mercury levels in Wisconsin fish.

There exist two primary sources of mercury release in Wisconsin: combustion of coal for the production of electricity and breakage or waste from mercury-containing products. To address the latter, DNR is encouraging community mercury reduction programs that reduce the public's use of mercury products and increase recycling for mercury products that will continue to be used. The new Municipal Mercury Charter is a direct result of the DNR's action.

The Municipal Mercury Green Tier Charter is an agreement between the DNR and the Municipal Environmental Group-Wastewater Division (MEG), an organization of Wisconsin municipalities. Communities whose wastewater treatment plant effluent does not meet the Great Lakes Water Quality Standard for mercury are required by state administrative rules to implement community mercury reduction programs.

Under the Mercury Green Tier Charter, municipalities may voluntarily achieve compliance with mercury reduction requirements prior to regulatory deadlines in exchange for flexibility and certainty in implementing mercury source reduction activities. The charter focuses on mercury product elimination or capture for recycling from hospitals, dental offices, schools and other sectors of the community that have historically used mercury-containing products.

Fifteen Wisconsin municipalities have subscribed to the Mercury Green Tier Charter with representation from all areas of Wisconsin. These communities will collaborate on their mercury reduction activities. Additional municipalities can subscribe to the Mercury Green Tier Charter during the next two years. It is expected that substantial and measurable reductions in mercury release to Wisconsin's environment will be demonstrated by the participating communities.

Each Green Tier participant and charter is unique to the environmental issue it addresses. However, all agreements reflect a growing concern for environmental improvement beyond what is required by law.

To learn more about Green Tier Charters, visit the Green Tier website at http://www.greentier.wi.gov.

Jeffrey Voltz is an environmental assistance coordinator at the Wisconsin Department of Natural Resources. He can be reached at (608) 266-8226 or jeffrey.voltz@wisconsin.gov.

Our coasts' diversity and abundance make clear we have something special at our doorstep.

WISCONSIN COASTAL MANAGEMENT AT 30

Mike Friis

The wonder of Wisconsin's Great Lakes shores would be apparent if one considered only a single beautiful location, critical habitat, working waterfront, recreational opportunity or center of commerce and transportation. However, when one thinks about them collectively, our coasts' diversity and abundance make clear we have something special at our doorstep.

In 1978, the federal and state governments began a special partnership to care for Wisconsin's nearly 1,000 miles of coastline on Lakes Michigan and Superior. The Wisconsin Coastal Management Program (WCMP) became the first federal Coastal Zone Management Act (CZMA) program established in the Great Lakes and among the first ten nationally.

The WCMP guiding principle of *enjoy and protect Wisconsin's Great Lakes coastal resources* embodies the balance of environmental sustainability and public use. The program has a long history of providing the technical assistance and financial catalysts needed to make local and coastwide projects successful.

Consider Sheboygan's South Pier District. This 42-acre brownfield site at the mouth of the Sheboygan River was for over 100 years used for storage of coal, salt, fertilizer and petroleum. A major redevelopment plan began with a small WCMP investment for beach restoration and trail development. These initial dollars were among the catalysts that transformed this under-used urban waterfront into a tourist destination that adds great value to the community.

In Milwaukee's Menomonee Valley, the WCMP has been involved in several projects that are revitalizing Wisconsin's largest brownfield. A strong group of local organizations including the City of Milwaukee, Sixteenth Street Community Health Center and Menomonee Valley Partners have used WCMP investments and technical support. Their work to plan, design and restore the Menomonee Valley is producing a place where people can again work and play.

Precious undeveloped tracts also benefit from WCMP partnerships. Lion's Den Gorge sits within a 3/4 mile-long pristine stretch of Lake Michigan shoreline in Ozaukee County. Local desire to protect and make this property available to the public was often discussed between County and WCMP staffs. When it became available for purchase, the WCMP was ready to contribute to the funding package that now preserves this shoreline in perpetuity.

The WCMP's financial and technical contributions also extend to public health. Several years ago, Door County was faced with beach sites with

elevated levels of E. coli bacteria. The WCMP participated with several public and academic partners to develop initial remediation plans and implement best practices at the affected beaches. Through local leadership and state support, Door County in one year went from the Natural Resources Defense Council's *Beach Bums* list to its *Beach Buddies* list.

The WCMP played an integral role in the process that led to the nomination of a National Estuary Research Reserve (NERR) site on Lake Superior. In 2005, WCMP-funded research produced "An Assessment of Wisconsin's Great Lakes Freshwater Estuary Applied Research, Management, and Outreach Needs," a project setting the foundation for the NERR site selection process. In 2006, the WCMP worked with the University of Wisconsin-Extension to facilitate a comprehensive NERR public stakeholder process. These initiatives produced fruit in 2008 when Governor Jim Doyle announced the St. Louis River estuary as Wisconsin's nomination for the nation's next NERR site.

How does the WCMP achieve these results? It works with partners to leverage resources and coordinate the many state and local government programs that affect Wisconsin shores. This networked approach is crucial when one considers the varied nature of the coast and the uses for the Great Lakes. No one state agency can be all things for the management of the Great Lakes. In this coordinating role, the program's placement in the Wisconsin Department of Administration ensures the program retains balance between environmental, economic development, transportation, recreation and many other objectives.

The WCMP has since its inception been responsive to local and tribal governments and the public through policy guidance from the Governor-appointed Wisconsin Coastal Management Council. The fourteen-member Council represents people from all areas of Wisconsin coasts including tribal and local governments, the Departments of Administration, Natural Resources and Transportation, the University of Wisconsin Sea Grant Institute and legislators.

The WCMP annually provides matching grants to local and tribal governments, academic institutions, nonprofits and other state agencies for the protection, sustainable use and study of Wisconsin's coastal resources. The grant program emphasizes wetland protection and habitat restoration, nonpoint source pollution control, public access and historic preservation, coastal resources and community planning, Great Lakes education and coastal land acquisition.

CZMA legislation provides the WCMP with a mechanism to review proposed federal government activities in the coastal zone. These reviews ensure federal actions along Wisconsin's coasts take place in a manner consistent with the policies of the WCMP.

The WCMP founders established a strong program that today is among the nation's most recognized for its effective implementation of CZMA goals. With the importance of the Great Lakes greater than ever, the WCMP will remain relevant and vital in the management of our Great Lakes coastal resources for many years to come.

Mike Friis is manager of the Wisconsin Coastal Management Program. He can be reached at (608) 267-7982 or michael.friis@wisconsin.gov.

2008 WISCONSIN COASTAL MANAGEMENT PROGRAM GRANTS

Project Name
Grantee
WCMP Award
Project Description
Contact

Coastwide

Coastal Water Quality and Land Use Management Model
University of Wisconsin-Milwaukee
$72,664
Develop a model describing the cycling of phosphorous in the Lake Michigan nearshore zone and define the relationship between phosphorous loading and Cladophora growth.
Dr. Harvey Bootsma, (414) 382-1717

Citizen Monitoring Network for Ephemeral Ponds
Department of Natural Resources
$44,847
Strengthen citizen monitoring networks and methods and encourage further use of monitoring data by DNR managers.
Mr. Thomas Bernthal, (608) 266-3033

Sustainable Wisconsin Harbor Towns
Wisconsin Harbor Towns Association
$39,400
Support the implementation of sustainable practices at marinas coastwide through the creation of a marina association, harbor cleanup events, redesigning and printing of the Wisconsin Harbor Towns Guide and implementing a Clean Marina Initiative.
Mr. Adam Smith, (262) 884-2463

Road-End and Public Access Inventory, Green Bay East Shore
Bay-Lake Regional Planning Commission
$29,995
Inventory and assess access points and road-ends along the east shore of Green Bay from the City of Green Bay to the City of Sturgeon Bay.
Mr. Mark Walter, (920) 448-2820

Establishing a Clean Marina Program
University of Wisconsin Sea Grant Institute
$29,975
Develop a Wisconsin Clean Marina Program, a voluntary program that encourages marina operators to protect coastal water quality by engaging in environmentally sound operating and maintenance procedures.
Ms. Victoria Harris, (920) 465-2795

Lake Superior Coastal Watershed Assessment
University of Wisconsin-Extension
$28,252
Expand the monitoring of coastal wetlands and streams at five sites along Lake Superior.
Ms. Sue O'Halloran, (715) 394-8525

Forestry Buffers to Control Nonpoint Pollution
Department of Natural Resources
$23,265
Evaluate the effectiveness of forestry buffers and recommend improved management to control nonpoint source pollution from forestry-related activities.
Ms. Carmen Wagner, (608) 266-1667

Bringing the Great Lakes into our Classrooms
Alliance for the Great Lakes
$21,830
Encourage the integration of Great Lakes education into classrooms by recruiting a network of educators to use a web-based clearinghouse of curricular and training information and conducting educator trainings.
Ms. Stephanie Smith, (312) 939-0838

Urban Great Lakes Environmental Education Programs
University of Wisconsin-Parkside
$20,000
Develop new experiential environmental education programming for the Racine and Kenosha school districts.
Mr. Thomas Schnaubelt, (262) 595-3340

Local Decision-Maker's Guide to Wetland Protection
Wisconsin Wetlands Association
$12,000
Develop and distribute a brochure titled "Local Decision-Maker's Guide to Wetland Protection" to educate local officials on how to reduce the impacts of development on wetlands in their communities.
Ms. Becky Abel, (608) 250-9971

Technical Assistance
Southeastern Wisconsin Regional Planning Commission
$20,000
Provide funding for technical support and public outreach.
Dr. Don Reed, (262) 547-6721

Technical Assistance
Northwest Regional Planning Commission
$20,000
Provide funding for technical support and public outreach.
Mr. Jason Laumann, (715) 635-2197

Technical Assistance
Bay-Lake Regional Planning Commission
$20,000
Provide funding for technical assistance and public outreach.
Mr. Mark Walter, (920) 448-2820

Technical Assistance to Local Governments
Department of Natural Resources
$378,802
Support four water management specialists who provide technical assistance to local units of government and administer wetland regulations throughout the coastal regions.
Ms. Lois Simon, (608) 266-8852

Coastal Wetland Inventory
Department of Natural Resources
$88,715
Update the Wisconsin Wetland Inventory for all coastal counties and convert aerial photographs to digital files for southeastern Wisconsin and Sheboygan County.
Ms. Lois Simon, (608) 266-8852

Ashland County

North Shore of Madeline Island Public Access
Town of La Pointe
$18,568
Construct a trail and a rock crib pier to provide public access from the north shore of Madeline Island to Lake Superior.
Mr. Greg Nelson, (715) 747-6913

Bayfield County

Bayfield County Elevation Data Collection
Bayfield County
$87,016
Use light detection and ranging (LIDAR) to gather elevation data along 86 miles of shoreline to determine shoreline setbacks for construction in a manner that protects the shoreline.
Mr. Scott Galetka, (715) 373-6156

Wave Climate Observation System in the Apostle Islands
University of Wisconsin-Madison
$29,995
Create a real-time wave climate observation system for the Meyers Beach area of the Apostle Island National Lakeshore.
Dr. Chin Wu, (608) 263-3078

Flood Flow and Sediment Erosion Reduction in North Fish Creek
University of Wisconsin-Madison
$22,421
Develop and implement a methodology and model for controlling and simulating the volume and rate of upland runoff from ditches to North Fish Creek.
Mr. John Hoopes, (608) 262-2977

Land Use and Land Cover Change Effects on Lake Superior Tributary Streams
University of Wisconsin-Madison
$22,314
Analyze forest composition and stream flows in the Northern Great Lakes region and incorporate the hydrological link between forest type and snowmelt into the LANDIS-II framework.
Mr. David Mladenoff, (608) 262-1992

City of Bayfield Washington Avenue Ice Road Improvement
City of Bayfield and Town of La Pointe
$21,531
Improve the winter ice road approach from Bayfield to Madeline Island to provide safer access, improved water quality and more summer recreational benefits.
Mayor Larry MacDonald, (715) 779-5712

Historic Bayfield Courthouse Stormwater Management Project
City of Bayfield
$10,000
Develop improvements to the turf areas and landscaping at the Historic Bayfield Courthouse to reduce run-off to the City of Bayfield's storm sewers.
Ms. Billie Hoopman, (715) 779-5712

Brown County

Green Bay Waterfront Plaza and Wetlands Restoration
City of Green Bay
$100,000
Complete landscaping along a 15-foot wide continuous wood boardwalk at the edge of the Fox River/Bay of Green Bay.
Mr. Carl Weber, (920) 448-3094

Fox River Trail Signage Project
Brown County Facility & Park Management
$12,500
Design and install twelve educational signs along six miles of the Fox River State Recreational Trail.
Mr. Douglas R. Hartman, (920) 448-4464

Door County

Door County Public Beaches
Door County Soil & Water Conservation Department
$50,000
Provide Door County municipalities with a cost-share incentive for the construction of practices to reduce the amount of contaminants from entering beaches.
Ms. Amanda Brown, (920) 746-2214

Door County Coastal Terrestrial Invasive Species Control
Door County Soil & Water Conservation Department
$24,300
Support a part-time coordinator to develop and implement invasive species control education/outreach programs and workshops for private landowners.
Ms. Amanda Brown, (920) 746-2214

Douglas County

Superior Municipal Forest Assessment
University of Wisconsin-Superior
$19,026
Field test the Wisconsin floristic quality assessment and Wisconsin wetland plant biotic index of biotic integrity for two state natural areas within a proposed National Estuarine Research Reserve.
Mr. Kurt Schmude, (715) 394-8421

Collection and Disposal of Unwanted Household Medications
City of Superior
$7,500
Pilot two citywide unwanted medication collection events in the City of Superior.
Ms. Amber Westerbur, (715) 394-0392

Milwaukee County

Southbranch Creek Riparian Restoration
Village of Brown Deer
$99,000
Restore woodlands, wetlands and stream habitat along 500 feet of Southbranch Creek near its confluence with the Milwaukee River.
Mr. Nate Piotrowski, (414) 371-3061

Public Access at the Milwaukee County Lakefront Parks
$90,000
Create public access and site enhancement elements that will be integrated with the construction of an open-air picnic shelter on Milwaukee's Lakefront.
Mr. James Keegan, (414) 257-4775

Menomonee Valley Airline Yards Design Development
City of Milwaukee Redevelopment Authority
$30,000
Design a 23-acre park with 2,600 feet of river frontage as part of a $50 million effort to redevelop a 140-acre former rail yard.
Mr. David Misky, (414) 286-8682

Atwater Beach Ecological Study and Management Plan
Village of Shorewood
$26,000
Conduct an ecological study and management plan for the restoration and revitalization of Atwater Beach.
Ms. Erika Lang, (414) 847-2647

Little Menomonee Creek Wetland Restoration
Milwaukee Metropolitan Sewerage District
$25,000
Restore 75 acres of wetland and 28 acres of upland habitat at a site along the Little Menomonee Creek in Ozaukee County.
Mr. Robert Schermeister, (414) 225-2053

Lakeshore State Park Signage
Friends of Lakeshore State Park
$15,800
Design and install information signs at the new Lakeshore State Park and support a public event.
Mr. Todd Montgomery, (414) 273-1173

Ozaukee County

Milwaukee River Dam Natural Fishway
City of Mequon
$100,000
Complete the design and engineering of a fish passage structure at the Thiensville dam to address safety-related maintenance of the dam and allow for movement of fish up and downstream.
Mr. William Hoppe, (262) 236-2933

Engineering and Design of Coal Dock Areas
City of Port Washington
$80,000
Conduct plan and design work at the WE Energies North Dock including recreational trails, fishing areas, boat docking, a roadway, parking lots, lighting, sewer and water, landscaping and a proposed public beach.
Mr. Mark Grams, (262) 284-5585

Racine County

Water Quality Improvements through Seasonal Assessments and Education
City of Racine Health Department
$29,562
Expand water quality testing on the Root River in the City of Racine to investigate sources of non-point pollution and provide information to organizations and individuals interested in reducing their environmental footprint.
Dr. Julie Kinzelman, (262) 636-9501

Sheboygan County

Fisherman's Creek Restoration and Natural Area Design
Sheboygan River Basin Partnership
$14,000
Prepare a concept plan for the Fisherman's Creek corridor to ensure future development is sustainable and well-coordinated
Mr. Peter Pittner, (920) 458-6164

ACKNOWLEDGEMENTS

The Wisconsin Coastal Management Program (WCMP) in the Wisconsin Department of Administration (DOA) publishes *Wisconsin Great Lakes Chronicle*. It welcomes but is not responsible for the opinions expressed by contributing authors.

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Photographs

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20, St. Louis River, Michael Anderson

21, Quarry Bay Sunset, National Park Service

DOA-9743-P 09/2008

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Funded by the Wisconsin Coastal Management Program and the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management under the Coastal Zone Management Act, Grant NA08NOS4190431.

The Wisconsin Coastal Management Program, part of the Wisconsin Department of Administration, was established in 1978 to preserve, protect and manage the resources of the Lake Michigan and Lake Superior coastline for this and future generations.

WISCONSIN COASTAL MANAGEMENT PROGRAM

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