Wisconsin Great Lakes Chronicle
2011

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FOREWORD

Governor Scott Walker

Dear Friends of the Great Lakes,

Promoting economic development and jobs is a top priority for my administration. Our Great Lakes are a tremendous natural resource that gives people reason to live in, visit and do business in our state. As such, Lakes Michigan and Superior are economic and job drivers for Wisconsin.

Tourism. Wisconsin's $13 billion annual tourism industry is a significant part of our state's economic foundation. Tourism supports nearly 300,000 jobs and generates hundreds of millions of dollars in tax revenues for needed public services. Beaches, water recreation and related water activities contribute to $5 billion of tourism spending in coastal counties. We must ensure that travelers and recreational tourists choose Wisconsin for fun and relaxation. To that end, we will continue to market and invest in the health of our coastal resources.

Fishing. Whether for sport or commercial, fishing is big business in Wisconsin. With 1.4 million licenses issued annually, sport fishing generates $2.75 billion in economic impact and 30,000 jobs. The approximately 70 licensed commercial fishers on Lake Michigan and Lake Superior recently took in harvests with a wholesale value of around $5 million. Clean and healthy waters for fish habitat are good business. We are improving our fish habitats and further promoting sport fishing.

Marinas. Over 240 marinas and hundreds of boat dealerships in Wisconsin generate thousands of jobs and millions of dollars of economic activity annually. Designated "Clean Marinas" attract boaters who prefer businesses that protect the environment. Participating marinas benefit from cost savings from reduced hazardous waste disposal, fewer pollutant clean-ups, lower insurance rates and reduced potential for violations and fines.

Beaches. Each beach visitor can bring up to $50 per person per day to the local economy. Therefore, one beach closure can cause thousands of lost revenue. Beach health is critical for our economy, and during my tenure as Milwaukee County Executive Milwaukee's Bradford Beach—and three Apostle Islands beaches on Lake Superior—joined Racine's North Beach as Blue Wave certified, the national environmental certification for beaches.

Commerce and Shipping. Great Lakes shipping connects Wisconsin and interior United States companies to world markets. More than $8 billion of commerce move through Wisconsin's Great Lakes and Mississippi River ports. In 2010, US flag shipping on the Great Lakes rebounded 35% over 2009 levels, a trend that will continue to support thousands of port related jobs in Wisconsin.

Shipbuilding. Wisconsin is home to world famous ship builders and dozens of smaller builders that contribute over $1 billion in economic output and 3,500 maritime jobs. Two large projects underway in Marinette include the building of the *Sikuliaq* for the National Science Foundation and two US Navy combat ships. Wisconsin companies will continue to be leaders in commercial and military ship building.

The Great Lakes are central to our social and economic development and are a natural resource of irreplaceable value. Wisconsin continues to enhance the natural and economic potential of its coastal resources through local, state, federal and private organizations and resources. This year's *Wisconsin Great Lakes Chronicle* details projects that benefited from the collaborative efforts of numerous partners dedicated to Lake Michigan and Lake Superior.

Wisconsin's commercial ports move commodities to world markets and support thousands of jobs for Wisconsin families.

WISCONSIN PORTS ARE STRONG ECONOMIC ENGINES

Jason Serck

A 2007 report issued by the US Army Corps of Engineers estimates that over $8 billion of cargo pass annually through Wisconsin's Great Lakes and Mississippi River ports. Wisconsin's commercial ports are economic engines that move commerce from the United States to world markets and support thousands of jobs for Wisconsin families.

The Wisconsin Department of Transportation (WisDOT) cites industry data demonstrating the efficiency of maritime commerce. A barge uses a single gallon of fuel to move one ton of freight 576 miles. In contrast, railroads can transport at a rate of only 413 ton-miles per gallon; trucks are estimated at 155 ton-miles per gallon.

Wisconsin's location on two Great Lakes provides significant advantages that have structured our history and economy. The same WisDOT report estimates that Wisconsin commercial ports in 2008 supported nearly 10,000 jobs and $462 million in wages and salaries. In total, Wisconsin ports created over $1.6 billion of economic activity in 2008.

In addition to scores of small marinas and harbors, Wisconsin's Great Lakes infrastructure is based on six major ports on Lake Michigan and Superior: Milwaukee, Manitowoc, Sturgeon Bay, Green Bay, Marinette and Superior.

Milwaukee. The Port of Milwaukee handles an average of 3.64 million tons of cargo annually. The Port connects two railroads, the Interstate highway system, over 300,000 square feet of warehouse space and acres of storage areas with domestic and international shipping. Milwaukee handles the third largest volume of grain on the Great Lakes, and also moves coal, general cargo, iron, cement, sand, salt and limestone.

The Port of Milwaukee offers more than general cargo handling. The Port is emerging as a major transport point for high-tech wind energy equipment. In addition, the *Lake Express* high speed ferry makes seasonal trips between Milwaukee and Muskegon, Michigan. The *Lake Express*, offers two and one-half hour trips for passengers and automobiles across Lake Michigan.

Manitowoc. The Port of Manitowoc plays a smaller, but critical, role for Great Lakes commerce. Manitowoc handles more than 350,000 tons of cement, rock, stone, coal and wood annually, and provides 91,000 square feet of warehouse space.

Manitowoc is home to Burger Boat Company, a manufacturer of custom yachts serving customers around the world. Burger is the oldest yacht builder in America with a history dating back to 1863. Manitowoc is also the home port of the *S.S. Badger*, a 410 foot passenger and car ferry that makes seasonal trips to Ludington, Michigan. The *S.S. Badger* is the only coal-fired steamship operating in the United States.

Sturgeon Bay. The Port of Sturgeon Bay is known worldwide for its ship building and ship repair facilities. Bay Shipbuilding is a leading manufacturer of Great Lakes bulk and cargo ships; many of the 1,000 self-unloading carriers in operation on the Lakes were constructed by Bay Shipbuilding at its Sturgeon Bay yards.

Palmer Johnson builds luxury yachts in Sturgeon Bay for domestic and international customers. The company—which began as a builder of wooden fishing boats—has been in operation for more than ninety years.

Green Bay. The Port of Green Bay connects domestic and international markets through maritime, rail and highway shipping. Several major trucking firms are located in the Green Bay area and offer direct links to the Port for the movement of regional commerce.

The Port annually handles more than 2.5 million tons of cargo including coal, limestone, iron, cement salt and bulk liquids. In addition, Green Bay operates 400,000 square feet of warehouse space and 100 acres for the storage of general and bulk shipments. The Port can also handle 30,000 tons of agricultural commodities in its silo facilities.

Marinette. The Port of Marinette provides both cargo handling and ship building operations. The Port annually handles 350,000 tons of cargo including iron, salt, coal, limestone and wood pulp.

The Port is also home to Marinette Marine Corporation, a manufacturer of large, customized ships used around the world. Marinette Marine builds high-tech ships for government customers including the US Navy and US Coast Guard. The Navy Littoral Combat Ship, Coast Guard Great Lakes Icebreaker *Mackinaw* and Staten Island ferries were all built in Marinette.

Superior. The Port of Duluth-Superior is the largest port on the Great Lakes. The Port annually handles more than 45 million tons of cargo including iron ore, coal, grain, cement, limestone and salt. More than 1,100 ships annually make port in Duluth-Superior to transport goods and commodities around the world.

The Port is connected to the Interstate highway system, four major railroads and two shipyards.

Duluth-Superior is a regular port of call for foreign and domestic cruise ships. Duluth-Superior is among the 20 largest cargo handling ports in the United States, and more than 2,000 jobs in the region are tied to Port operations.

Wisconsin's economy has developed since before statehood because of its abundant natural resources and commercial routes. The state's commercial ports remain economic engines that serve not only Wisconsin communities, but also the iron mines of Minnesota, coal fields of Montana and wheat farmers of the Great Plains and Canada.

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Like the entire state, Wisconsin's coastal counties experienced slowing population growth during the 2000-2010 period.

WISCONSIN'S COASTAL COUNTIES: DEMOGRAPHIC TRENDS

David Egan-Robertson

Like the entire state, Wisconsin's coastal counties experienced a slowing of population growth during the 2000-2010 period. Overall, the fifteen counties that abut Lakes Superior and Michigan grew by 57,500 residents, or 2.9%, from 2000-2010, while these counties gained 4.4% in the prior ten years. In comparison, Wisconsin grew by 6.0% during the 2000s and by 9.6% during the 1990s.

Clearly, the coastal counties are not a homogeneous grouping. Four counties have a preponderance of seasonal-use housing, smaller average household sizes and older populations dominated by relocated retirees. A second group of four counties represent a composite of seasonal housing and smaller-sized cities. Finally, seven counties are characterized by large cities and denser development.

Recreational/Seasonal-Use Counties: Natural Decrease, Out-Migration

In a reversal of the 1990s, the total population for Bayfield, Door, Iron and Marinette Counties declined in the 2000s. Perhaps most strikingly, the net migration was negative last decade after a period of strong in-migration in the 1990s.

Collectively, these four counties lost three percent of their population, declining from 93,219 to 90,464, with a range from 0% (Bayfield) to -14% (Iron). The pattern of natural decrease common to recreational/seasonal counties continued with all four counties having more deaths than births, accounting for 2% of the population loss. In addition, all four counties had decadal birth rates under 10 per 1,000, well below the state rate of 12.8.

Both Bayfield and Door Counties experienced positive migration in the 2000s (each +1.4%), but Iron and Marinette experienced net out-migration (-2.2% and -8.7%, respectively) in numbers large enough to more than offset Bayfield and Door's gains. In the 1990s, all four counties gained population through migration, ranging from 8% to 17%.

These reductions and reversals in migration beg two questions: First, who left and/or who didn't move in? The percentage of children in these counties declined by -3.6%, more than the state decline (-2.0%) and that for all coastal counties (-1.8%), indicating that some net out-migration of families with children occurred.

Second, was there an alteration in migration flow among retirees? Typically, recreational/seasonal use counties gain "young" retirees (ages 55-74), then lose "old" retirees who either move to Sunbelt states or Wisconsin's metropolitan areas, usually due to family ties and increasing health care needs. Is it probable that fewer retirees—than in the previous decade—decided not to move on a permanent basis to these counties? Planners should pay attention to more refined Census data that becomes available in the next two years to examine the age-specific migration patterns in these four counties.

Small Cities/Transitioning Counties: A Mix of Demographic Results

Four coastal counties—Ashland, Douglas, Kewaunee, and Oconto—have a mix of seasonal-use housing and year-round residents; the occupancy rates range from 65% in Oconto to 87% in Kewaunee. In addition, the percentages of population under 18 ranged from 21.4% to 23.6%.

Collectively, these four counties gained slightly more than 2% in population, increasing from 115,992 to 118,550, although this growth represented less than one-quarter of the percentage change of the 1990s. All four counties had gains in natural increase, and all had decadal birth rates over 10 per 1,000.

Regarding migration, Ashland County experienced net out-migration of -4.7% of its population. Kewanuee had a slight loss, and Douglas and Oconto posted positive migration gains. Comparatively, in the 1990s all four counties gained population through migration, ranging from 3% to 16%.

It is somewhat surprising that Kewaunee County did not post a migration gain as it did in the 1990s (4.8%). Following the 2000 Census, Kewaunee and Oconto Counties were added to the Green Bay metropolitan area because of increased commuting ties. In contrast, Oconto County's growth both in natural increase and migration remained steady, almost equaling the state's percentage increase.

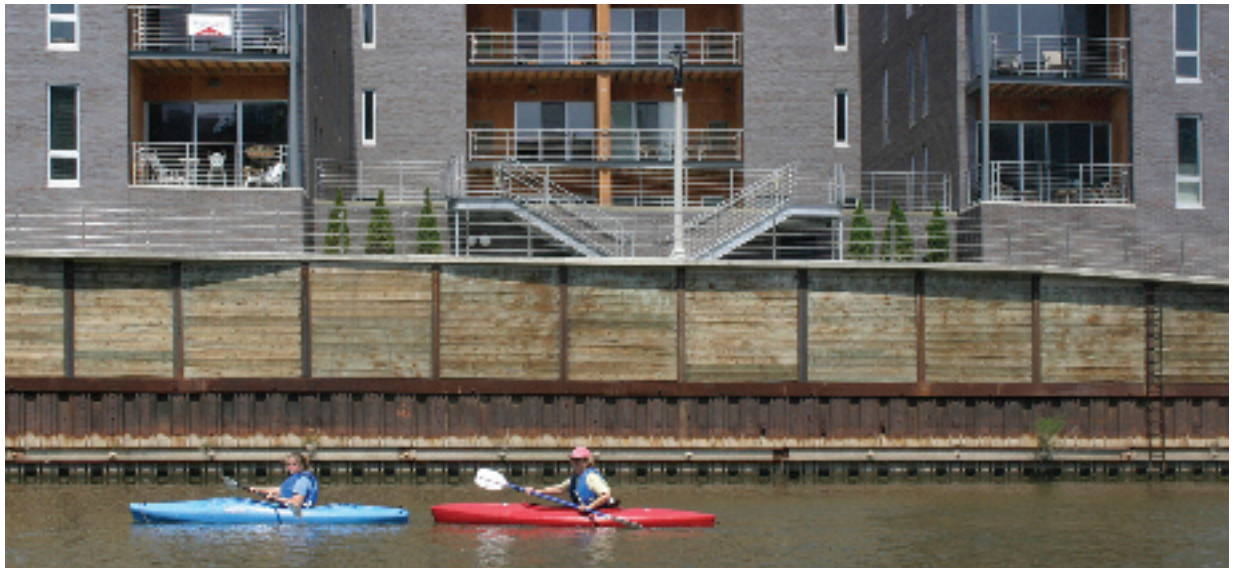
Large City/Densely Settled Counties: Continued Growth

The seven most populous coastal counties—Brown, Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine and Sheboygan—all with densities well above the state average of 105 persons per square mile and occupancy rates over 90%, generally saw increases in population in the 2000s. With the exception of Manitowoc County (-1.8%), these counties grew from 0.8% (Milwaukee) to 11.3% (Kenosha).

As a group, these counties added 58,000 residents, or 3.2%. This rate was only slightly below the 4% growth of the 1990s. Nearly one-fourth of the population is under age 18, and birth rates were higher than the state average in Brown, Kenosha, Milwaukee and Racine counties.

All of the counties exhibited strong gains in natural increase during the 2000s. However, migration in the most recent decade was a mixed situation. Four of the seven counties—Manitowoc, Sheboygan, Milwaukee and Racine—experienced net out-migration. In the 1990s, only Milwaukee did.

After three decades of losses, it is interesting to note greater stabilization in Milwaukee County's population. The county lost a net 150,000 people from 1980 until 2000 due to migration. In the past decade, about 57,000 more people moved out than moved in, but the excess of births over deaths compensated for this loss.



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The Clean Marina Program encourages marine businesses to protect coastal waters through certification and environmentally sound procedures.

WISCONSIN'S CLEAN MARINA PROGRAM

Victoria Harris and Jon Kukuk

Wisconsin is home to over 240 marinas, including more than 140 located in Great Lakes coastal waters and tributaries. Over 635,000 boats are registered in Wisconsin and the state boasted the highest growth in the number of registered boats in the nation between 1999 and 2007.

Marinas, yacht clubs and boat yards that provide recreational boating services are important assets of most waterfront communities. These facilities offer public access to the water, harbors of refuge for vessels in distress and substantial recreational and economic benefits.

Spending on boats and boating activities in the Great Lakes states totaled nearly $16 billion in 2003 and directly generated 107,000 jobs. Taking secondary effects into account, recreational boating supported 244,000 jobs, $19 billion in sales, $6.4 billion in personal income and $9.2 billion in value added revenues. Benefiting businesses include marine manufacturers, retailers, marinas, boatyards, restaurants, lodging accommodations and charter boat operators. (*Great Lakes Recreational Boating's Economic Punch*, Great Lakes Commission, 2003)

Coastal communities and marine related businesses depend on clean waters and a healthy coastal environment for their continued prosperity. Clean water is as essential for a quality boating experience as it is for other human and aquatic life uses. And marina operators recognize that good stewardship and environmental protection are in their best interest.

While marinas contribute many millions of dollars to Wisconsin coastal community economies, the waters surrounding them can become contaminated with pollutants derived from boating activities. Chemical runoff from boatyards, toxic metals from anti-fouling paints, petroleum from fuel docks, solvents, anti-freeze, sewage, fish waste and litter can all be released into the water. Even small releases from the growing number of marinas and boats can add up to serious pollution potential. This is especially true when large numbers of boats congregate in small embayments and harbors.

Marina construction and maintenance dredging can destroy or degrade important aquatic habitat. In addition, boaters may advance the spread of aquatic invasive species and diseases via boat trailers, live wells or bait buckets.

The Wisconsin Marina Association (WMA) and University of Wisconsin (UW) Sea Grant are helping marinas around the state stay shipshape while protecting the water resources that their customers enjoy. In July 2008, the Wisconsin Coastal Management Program funded two projects to organize a Wisconsin Marina Association and develop a Wisconsin Clean Marina Program. These concurrent projects were intentionally intertwined to advance Wisconsin's marine industry and improve Wisconsin's valuable Great Lakes.

The WMA is the voice of its members in working with government agencies and affiliated national and local organizations on issues affecting recreational boating. The Clean Marina Program encourages marine businesses and recreational boaters to protect coastal water quality by engaging in environmentally sound operating and maintenance procedures. The program provides guidance, training and technical assistance to marina and boatyard operators on best management practices (BMPs) that prevent or reduce pollution. The voluntary program aims to be a win-win for marine businesses, boaters and the environment.

UW Sea Grant worked with a steering committee representing seven marinas, the Wisconsin Coastal Management Program, the Wisconsin Department of Natural Resources, the UW-Extension Solid and Hazardous Waste Education Center, the US Coast Guard and leaders from other Clean Marina programs to develop criteria for Clean Marina certification. The partners also produced outreach and education materials including a Clean Marina best management practices guidebook and Clean Boater tip sheets. These materials are available on the program's Web site at www.wiscosnincleanmarin.org.

The guidebook outlines practices required by law as well as additional BMPs for siting new and expanding marinas, marina design, stormwater management, vessel maintenance, petroleum control, sewage handling, waste disposal and marina management. Facilities that follow the recommended practices and pass onsite inspections may become certified as Clean Marinas in recognition of their environmental stewardship, and they are encouraged to use the designation to promote their businesses.

In July 2010, the newly formed Wisconsin Marina Association (www.wisconsinmarinas.org) received an additional grant from the Wisconsin Coastal Management Program to manage the Wisconsin Clean Marina program and launch the Clean Marina certification process with technical support from UW Sea Grant. As of May 2011, nearly fifty-five marine businesses have joined the WMA, five Clean Marina training workshops have been attended by more than sixty marina managers, eleven marinas have become certified "Clean Marinas" and more than 240 BMPs have been adopted collectively by the certified marinas. We anticipate certifying an additional six marinas by July 2011. Seventeen marinas have also signed pledges and are taking steps toward certification.

Surveys of marinas participating in other state Clean Marina programs show clear benefits to certified marinas. Marinas can improve their bottom line by reducing hazardous and solid waste generation and disposal, recycling shrink wrap and antifreeze, minimizing spill clean-up costs, increasing marina occupancy and slip fees for boaters who prefer to patronize Clean Marinas,

and qualifying for reduced insurance premiums. Additionally, boaters appreciate the efforts and results of these environmentally-friendly marinas.

The commitment by the Wisconsin Marina Association and marine businesses to Wisconsin's Great Lakes waterways—with support of the partners of the Wisconsin Clean Marina Program—shows great promise for sustaining the recreational boating industry, improving Great Lakes water resources and helping in the recovery of Wisconsin's economy.

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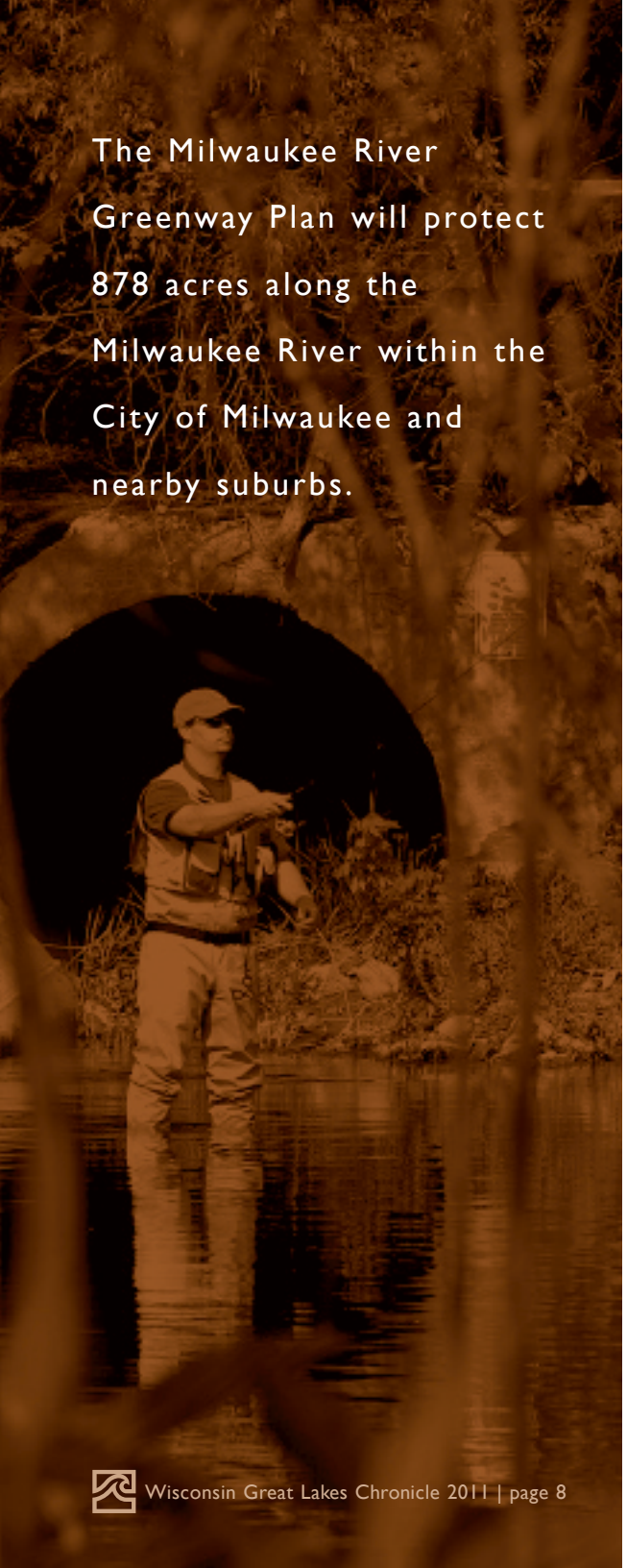

The Milwaukee River Greenway Plan will protect 878 acres along the Milwaukee River within the City of Milwaukee and nearby suburbs.

MILWAUKEE'S SECOND SHORELINE: THE MILWAUKEE RIVER GREENWAY

Ann Brummitt

The Milwaukee River Greenway is a seven mile section of the Milwaukee River that has shaped much of Milwaukee's development. Home to Native Americans followed by European settlers, the River has supported diverse communities with sustenance, industrial power and recreation. Unfortunately, industrialization took its toll and the Milwaukee River—like so many urban rivers in North America—became a trash river unsuitable for most types of recreation or enjoyment.

The removal of the North Ave Dam in 1997 sparked a turnaround in the River's fortunes as urban dwellers and wildlife returned to this resilient shoreline in the most densely populated municipality in the state. Water quality improved and fish diversity jumped sixfold. The River became a destination for anglers from around the Midwest, and a flyway and home for over 200 species of birds, numerous mammals, amphibians, reptiles and unique flora, including several threatened species.

In 2006, a grass-roots collaborative called the Milwaukee River Work Group (MRWG) formed to protect 878 acres along the Milwaukee River within the City of Milwaukee and nearby suburbs. The initial gathering was in response to development pressure, clear-cutting and a lack of protective shoreline regulation. MRWG grew to include citizens and riparian owners, over twenty non-profits, neighborhood associations, businesses and government agencies all dedicated to improving this resource.

With Wisconsin Coastal Management Program funding, MRWG worked with the Village of Shorewood and the City of Milwaukee to craft protective ordinances that passed in 2006 and 2010, respectively. These ordinances resulted in permanent protection of river natural areas including building height restrictions and setbacks to preserve scenic beauty and protect wildlife habitat, strict standards for stormwater management, noise and light pollution guidelines and landscaping provisions for native plants.

The University of Wisconsin-Milwaukee Foundation was the first to put these measures into practice with the design of the Cambridge Commons dorms. Project architects re-oriented the building to the River, lowered its front to protect the River's scenic beauty, and added two greens roofs and a 20,000 gallon rain water collection tank under the building's courtyard. Seven hundred students now live trailside to the River in a LEED Gold certified building and can join a Living Learning Community dedicated to sustainability and the environment.

The Wisconsin Coastal Management Program also funded the Milwaukee River Greenway Master Plan: A Vision for Recreation and Restoration, released in May 2010. The plan provides a comprehensive vision for a restored urban wilderness and shared recreational

opportunities in three communities. The plan recommends the formation of the self-funded Milwaukee River Greenway Coalition to implement a work plan that features a thirteen mile trail for non-motorized recreational users.

The plan prioritizes a branding and signage program for the Greenway at four gateway entrances and eleven access points. Trailheads will be marked with maps and interpretive signage. Trails will be designed to protect wildlife habitat and provide stronger links to the surrounding neighborhoods.

Hundreds of stakeholders provided input to the plan through public meetings and committee work. The plan spells out a habitat framework for restoration and preservation of the natural resources within the Greenway and recommends a complete biotic inventory to inform decisions about recreational improvements, habitat restoration and species management. The Milwaukee River Greenway Plan is already producing important projects.

Rotary Centennial Arboretum. The prime gateway to the Greenway, the region's first Arboretum has been envisioned by Rotary Club of Milwaukee on donated industrial lands. The Club, in partnership with the River Revitalization Foundation, the Milwaukee Urban Rivers Foundation and the Urban Ecology Center, broke ground and planted the first tree last summer. The Arboretum will feature 1,000 trees native to southeastern Wisconsin, universally accessible trails and outdoor learning areas for children.

Thirteen Miles of Trails. A branding and signage campaign is underway with a goal of opening a thirteen-mile trail system simultaneously with the Rotary Centennial Arboretum in September 2013. The first ever sustainable trails workshop was held and crews began working on trail improvements. Trail acquisition, building and improvements will continue through 2013 to close gaps, avoid sensitive plant locations and improve sustainability.

Cambridge Woods Nature Sanctuary. A plant inventory is underway throughout the Greenway and signs of Emerald Ash Borer are being monitored. The Wisconsin Coastal Management Program is funding work that will formally designate Cambridge Woods a nature sanctuary with vegetative screening to route bicyclists to the Oak Leaf Trail and improved access routes to the river.

Greenway Gateway. MRGC's partner, the River Revitalization Foundation, has begun work on another former industrial site to develop the southern gateway featuring native plants, a children's play area, and a canoe and kayak launch.

PCB Removal. At the northern end in Lincoln Park, the Wisconsin Depatment of Natural Resources, the US Environmental Protection Agency, Milwaukee County and the Milwaukee Metropolitan Sanitary District are continuing removal of mud containing PCBs in the Lincoln Park lagoon and channel. The project is expected to be complete in 2012 and is an important step to improving recreation and fish health in the river.

The Milwaukee River Greenway is shaping up to be an exceptional place to play, learn and recreate within a renewed urban wilderness that will serve Milwaukeeans and visitors alike for generations to come.

Ann Brummitt is Director of the Milwaukee River Greenway Coalition. She may be reached at (414) 763-6199 or ann@protectmilwaukeeriver.org.

Mitigating the causes of beach closures is central to the long-term economic security of the Chequamegon Bay area.

CHEQUAMEGON BAY AREA PARTNERSHIP

Ed Morales

From her office in the Larson-Juhl Center for Science and the Environment at Northland College in Ashland, Dr. Wendy Gorman, Professor of Biology, is coordinating an ambitious new effort to establish baseline data on the health of the Cheuqamegon Bay shoreline. Throughout the summer, a team of student researchers will survey previously unmonitored beaches in the Bay region. Samples collected by researches will return to Northland's state-certified lab where students working under the direction of Dr. Gorman will analyze the results for evidence of E. coli contamination.

Dr. Gorman says that although many of the region's beaches have been monitored for several years, shorelines on the area's reservations—which are targeted specifically by this new initiative—have been largely overlooked. Using the baseline values Dr. Gorman's team establishes, researchers will then be able to track E. coli levels over time and work with local municipalities to create shoreline management plans to mitigate the impact of beach contaminants and reduce the frequency of beach closures.

The project is an initiative of the Chequamegon Bay Area Partnership (CBAP), a collaboration of fifteen municipalities, tribal governments, non-profit organizations and government agencies formed in 2009 to address environmental issues facing the Bay area. The partnership represents a complex melding of philosophies and politics, with national and regional stakeholders meeting to work toward their mutual benefit.

At the center of the partnership stands the Sigurd Olson Environmental Institute (SOEI), Northland's research and outreach arm and the coordinating partner of CBAP. As the SOEI Program Director, Mike Gardner plays a key role in managing the on-the-ground efforts of the Partnership. This summer, Mr. Gardner is leading a team of students on a mission to clean and protect shoreline across the Chequamegon Bay.

Mr. Gardner says that the general health of regional beaches is closely tied to the overall health of the regional economy. His opinion is backed by an analysis from the University of Michigan suggesting the Great Lakes directly support more than 1.5 million US jobs and generate $62 billion in wages annually.

The link between the health of the Great Lakes and the health of regional economies across the basin was one of the driving forces behind the establishment of the Great Lakes Restoration Initiative (GLRI), a $475 million effort to target the greatest threats facing the Great Lakes basin.

"Lake Superior is the world's largest lake," says Lissa Radke, the United States Coordinator of the Lake Superior Binational Forum, one of the organizations involved in CBAP, "but that doesn't mean you can't topple it."

Ms. Radke's office at the SOEI is bursting at the seams with evidence of a professional career dedicated to advocacy for Lake Superior. Since 2003, Ms. Radke has served as the stateside coordinator for the Binational Forum, a collaboration of Canadian and American stakeholders representing municipalities, governmental agencies, First Nations and non-profit organizations around Lake Superior. Together with Jim Bailey, her Canadian counterpart, Ms. Radke works to further collaboration among these stakeholders on the restoration and protection of the Lake.

In October 2010, CBAP received word that it secured GLRI funding for the first three of its grant applications. The Binational Forum received funds to develop and distribute new educational materials around the Lake, while a larger group of five CBAP partners received support to restore habitat for fish and other wildlife throughout the Chequamegon Bay. The third grant provided funding to conduct the shoreline health surveys that Dr. Gorman coordinates, helping researchers better understand beach health and areas impacted by nonpoint pollution.

Mr. Gardner says understanding and mitigating the causes of beach closures is central to the long-term economic security of the Bay area and beyond, and emphasizes the importance of tackling environmental issues now.

"The Chequamegon Bay is known for its pristine beaches," he says. "People drive from all over the Midwest to spend time on the Lake, but no one wants to drive 300 miles to find a 'beach closed' sign."

Historically, there has been a clear distinction between protecting the environment and developing local economies, and support for each effort often broke along ideological lines. Today, the link between the environment and regional economies is well established, and there is significant evidence suggesting a modest investment in the restoration of the Great Lakes now can provide tremendous economic benefit in the future. A recent study published by economists at Grand Valley State University in Allendale, Michigan demonstrates that GLRI funding can provide nearly a 6-1 return on the initial investment.

"In the 21st century, the conversation is no longer about jobs or the environment," says Ms. Radke, "but how we protect the environment while providing jobs in our communities."

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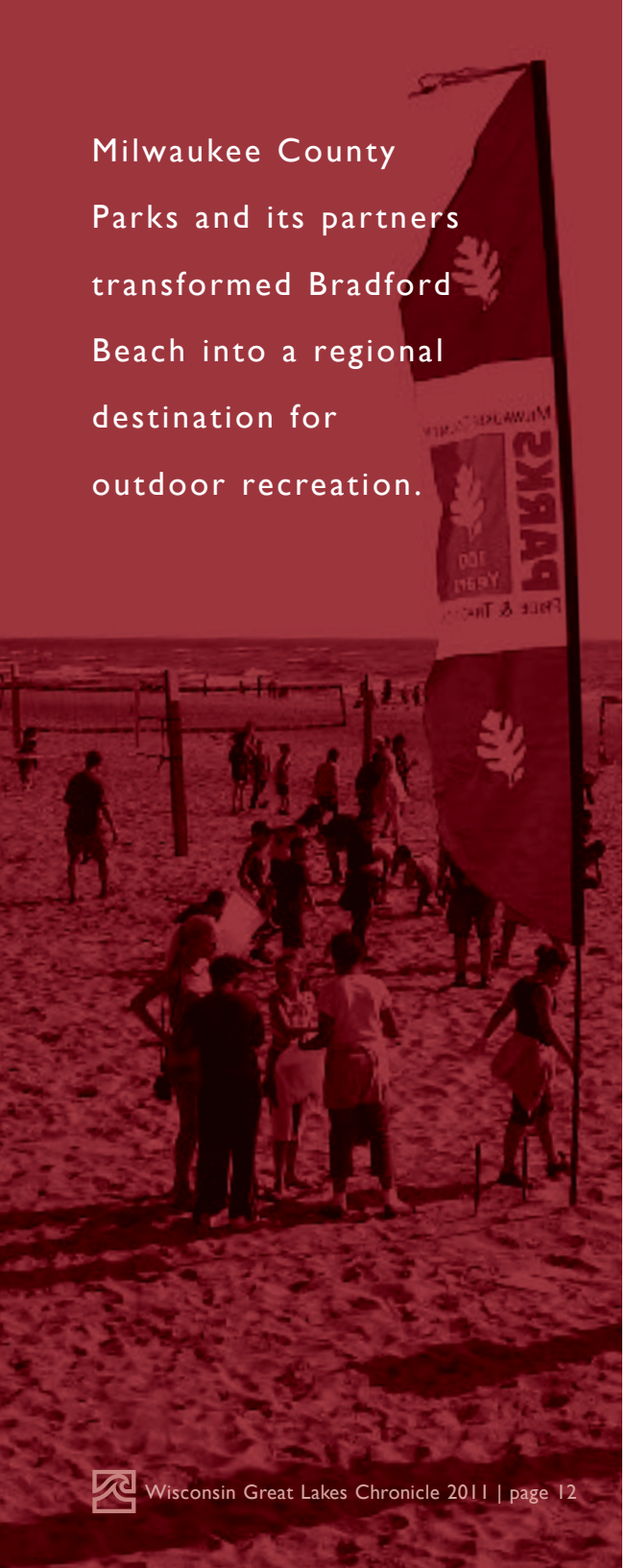


Milwaukee County Parks and its partners transformed Bradford Beach into a regional destination for outdoor recreation.

BRADFORD BEACH: JEWEL OF MILWAUKEE'S EMERALD NECKLACE

Laura Schloesser

On a hot June afternoon in 1931, Milwaukee County Parks' beaches were packed with people trying to escape the summer heat. According to the *Milwaukee Sentinel*, over 4,000 people enjoyed a day along Lake Michigan at Bradford Beach. By this account, Milwaukee's lakefront was a welcoming, vibrant place where people gathered for recreation and relaxation.

Fast forward seventy years to a similar day, but at a very different Bradford Beach. At the end of the century, Bradford was a desolate, wasted half-mile of sand in the heart of downtown Milwaukee used by only few diehard sunbathers and dog walkers. But while the beach saw little activity, there were people working behind the scenes who had a vision of returning the beach to its heyday.

Milwaukee's beaches—and in particular Bradford Beach, the jewel of its Emerald Necklace—became a civic priority for the community. Corporate partners, philanthropists, advocacy groups and the Milwaukee County Parks Department, led by Director Sue Black, shared a common desire to revitalize Bradford Beach by forming a powerful partnership. These like-minded individuals came together to forge a plan to transform the lakefront property under the jurisdiction of Milwaukee County Parks into a regional destination for outdoor recreation.

In 2007, MillerCoors took the lead with a generous five-year, $500,000 donation directed toward improving the environmental health of beaches. One-quarter of the MillerCoors donation was earmarked for the University of Wisconsin-Milwaukee Great Lakes WATER Institute for research on Lake Michigan beach water quality. The Institute's research included water monitoring devices, web cams and an assessment of stormwater management.

The WATER Institute's timely research on beach E. coli contamination and its mission to support sustainable activities were critical to the long-term health and preservation of the beach and near shore Lake Michigan. The Institute played a critical role in developing the scientific data needed to restore Bradford Beach.

MillerCoors presented the remaining $375,000 of its grant to the Milwaukee County Parks Department to apply the WATER Institute's research findings to Bradford Beach and integrate recommendations into daily operational plans. Migratory Bird Management, Inc. of Brookfield was hired to patrol the beaches daily with Border Collies to help reduce E. coli in the sand from gull droppings. In addition, local at-risk youth were hired through the Milwaukee Community Service Corps to remove *Cladophora* from the beach. Each activity dramatically improved the health and aesthetics of the beach.

Other key components of the Bradford revitalization plan improved beach and water safety and beach cleaning:

- Private donations were given for the first two years to cover additional lifeguard staffing at the beach
- Local philanthropic foundations donated funds to procure a jet ski and sled for water rescue and patrol
- A local energy company purchased a beach cleaner used daily to groom and clean the sand
- A local waste hauler donated 40 enclosed garbage containers and 20 enclosed recycling containers for use along the lakefront
- Eight beach rain gardens were constructed by Milwaukee County to direct and naturally filter storm water from the adjacent roadway and parking lots
- Educational signage was provided by the local sewerage district

Other Milwaukee corporations and philanthropic groups joined in the commitment to revitalize Bradford Beach with the goal of achieving national Blue Wave certification. The prestigious Blue Wave status is awarded by the Clean Beaches Council based on meeting 28 rigorous criteria for marine and freshwater beaches. Bradford Beach was awarded this certification within one year of implementing the revitalization plan.

In addition to Blue Wave certification, Bradford Beach, the Milwaukee County Parks and the numerous partners and friends that restored Bradford Beach to the jewel it once was have been recognized with several awards:

- Bradford Beach received a 2008 Silver Star award for Outstanding Aquatic Facility from the Wisconsin Park and Recreation Association
- The Milwaukee County Department of Parks, Recreation & Culture received a 2009 Salute to Local Government Public-Private Cooperation Award from the Public Policy Forum for the revitalization of Bradford Beach
- Bradford's stormwater controls project was recognized by the American Council of Engineering Companies of Wisconsin with a 2009 Engineering Excellence Award
- The Bradford Beach Stormwater Treatment Project was awarded the 2009 Public Works Project of the Year award by the American Public Works Association

The Milwaukee County Parks Department continues to educate visitors to Bradford Beach and its five other Lake Michigan beaches on their personal responsibility to maintain the health and vibrancy of all beaches. Public awareness and support remain the most important tools we have to preserve Bradford and all of Milwaukee's beaches.

Preserving Milwaukee's Emerald Necklace—and Bradford Beach particularly—is a responsibility Sue does not take lightly. Our forefathers such as Charles Whitnall, Alfred Boerner and the famed Frederick Law Olmsted were dedicated to making Milwaukee great by designing and developing vast recreational spaces for the community. Today's generation will be held accountable by tomorrow's. We are therefore committed to leaving this great parks system better than we found it.

Laura Schloesser is the Safety, Security and Training Manager with the Milwaukee County Department of Parks, Recreation and Culture. She may be reached at (414) 257-7143 or laura.schloesser@milwcnty.com.

Wild Rice is an important cultural and ecological species in the western Great Lakes.

RESTORING WILD RICE IN ALLOUEZ BAY

Amy Eliot

My dad, Frank Gotelaere, and his thirteen siblings grew up on Allouez Bay in Superior where they hunted, fished and no doubt got into other quagmires. Dad said the ducks tasted great then because they fed on wild rice, which he remembers was thick all across Allouez Bay.

Northern wild rice *(Zizania palustris)* is an aquatic grass that has tremendous wildlife value because of its nutritious seed; an acre of good rice bed can yield well over 500 pounds of seed. Dad also recalls that the wild rice seemed to disappear many years ago when the Bay was dredged for fill for the re-construction of the US 2/53 road bed. After that, he said the wild rice never came back.

Many historic rice beds have been lost in the western Great Lakes region over the decades, although no one is certain how many acres have vanished or what caused the disappearance. Wild rice beds can be destroyed by grazing geese or they can be out-competed by exotic species or opportunistic native plants.

In addition, large wakes can destroy beds when the ribbons of leaves laying flat on the water are buoyant and easily uprooted. Particularly damaging are changes in hydrology—such as reduced flows and increased water levels—where even small increases in depth can destroy wild rice habitat. It is estimated that the St. Louis River has lost 7,700 acres of wetland and open water habitat since settlement.

The loss of wild rice beds in Allouez Bay started a turn-around in 2009 when the Douglas County Land and Water Conservation Department—under the supervision of Christine Ostern—joined with the National Oceanic and Atmospheric Administration (NOAA) and the Great Lakes Commission Habitat Restoration Partnership (GLC HRP) to restore fish and wildlife habitat in the lower St. Louis River estuary.

Because wild rice requires the right conditions, we sought the expert advice of Peter David, a wildlife biologist with the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and wild rice restoration expert. During a boat tour, we showed Mr. David patches of wild rice growing near the mouths of Bear Creek and an unnamed creek; he was able to locate single stems of wild rice that were in rough shape but present.

Mr. David thought the creek mouths would be good places to put in test plots since the conditions that wild rice prefer were present: clear water so sunlight can reach the young plant, flowing water, soft organic muck with optimal depths of 1-2 feet and other marsh vegetation to mitigate water level fluctuations caused by boats and high winds.

The team selected two sites approximately 1.5 acres in size. Mr. David helped us obtain the wild rice seed from a local harvester. Financial support from GLIFWC, NOAA and GLC HRP made it possible to purchase three hundred pounds of wild rice in the late summer of 2010. However, to minimize loss to waterfowl, the team waited until after the fall migration and just before ice-up to seed the plots.

The rice had to be stored in running water to keep it from drying out and spoiling. We worked with Bill Gobin at the WDNR Brule River Fish Hatchery to put the 50-pound bags of wild rice in the Little Brule River. The flowing water of the Little Brule kept the rice from freezing.

With the help of resilient volunteers—including my dad, Mike Savage, Valerie Kozlovsky and Philip Anderson— we located the restoration areas with GPS units and started to broadcast the seed. We mastered the technique of tossing the seed into the strong wind where it separated and drifted onto the water.

We will fence off four small areas in the spring to keep geese and carp from the seeded plots. Anthony Havranek, Water Resources Manager at the St. Croix Tribal Environmental Department, provided the design for the exclosures that used in a similar project. This extra step may help us determine if water conditions or grazing are causing a problem for wild rice regeneration.

We will monitor progress over the growing season, although it may take longer than one year to evaluate the project since wild rice seed can remain dormant for five or more years after seeding. This adaptation allows rice to survive an occasional crop failure. If the wild rice grows, we will spread seed again this fall. For now, all we can do is wait to see if wild rice reaches the surface sometime in mid-June.

Native Americans consider wild rice or *manoomin* a gift from the Great Spirit; wild rice has been central to their culture for hundreds of years.

Our team is very pleased to be part of a growing interagency effort to restore this important cultural and ecological species in the western Great Lakes. It is especially gratifying to me that my father is participating as well, and that the restoration project is taking place where my own family grew up.

Amy Eliot is an Associate Researcher at the Lake Superior Research Institute, University of Wisconsin-Superior. She may be reached at (715) 394-8313 or aeliot@uwsuper.edu. More information on the wile rice restoration project is available at www.glifwc.org.

2011 WISCONSIN COASTAL MANAGEMENT PROGRAM GRANTS

Project Name
Grantee
WCMP Award
Project Description
Contact

Coastwide

Gikinoo'wizhiwe Onji Waabang (Guiding for Tomorrow) Coastal Climate Change & Culture
University of Wisconsin-Extension
$60,000
Create a multicultural climate change educational initiative for Lake Superior to increase climate change literacy and public engagement.
Ms. Suzanne Samuelsen, (608) 265-5917

Lake Superior Estuaries: Closing the Knowledge Gaps
Department of Natural Resources
$53,764
Collect information about Lake Superior freshwater estuaries including 21 estuaries not covered by previous assessments.
Ms. Rebecca Schroeder, (608) 266-5244

Champions of Their Rivers
River Alliance of Wisconsin
$35,400
Conduct a workshop for and provide support to coastal stakeholders on riverfront revitalization, stormwater enhancements and stream restoration.
Ms. Helen Sarakinos, (608) 257-2424

Mapping Wisconsin's Lake Superior Shoreline Changes
Association of State Floodplain Managers
$27,482
Map oblique photographs of the Wisconsin Lake Superior shoreline from the mid-1970s and 2007-2008 into a GIS database.
Dr. David Mickelson, (608) 257-1825

Integrated Wetland Outreach to Coastal Communities
Wisconsin Wetlands Association
$15,300
Provide training and education to property tax assessors on wetland valuation, organize field trips to coastal Wetland Gems sites and conduct outreach to new audiences.
Ms. Becky Abel, (608) 250-9971

Regional Environmental Corridors Data and Mapping Update
Bay-Lake Regional Planning Commission
$14,943
Update and support the Commission's environmental corridor GIS dataset including navigable waters, wetlands and other significant natural features.
Ms. Angela Pierce, (920) 448-2820

Wisconsin Beach Health Website Water-Quality Nowcasts
Department of Natural Resources
$11,438
Enhance the Wisconsin Beach Health website to integrate nowcast modeling with routine data collection and reporting procedures.
Mr. Adam Mednick, (608) 261-6416

Chequamegon Bay Sustainable Ecosystem Management
Northland College, Sigurd Olson Environmental Institute
$10,000
Develop a plan to guide and prioritize ecosystem management efforts in the Chequamegon Bay area and a website-based clearinghouse for regional management initiatives.
Dr. Randy Lehr, (715) 682-1261

Stormwater Outreach Campaign
Southeastern Wisconsin Watersheds Trust (Sweetwater)
$10,000
Launch a public information campaign to reduce pollution from urban stormwater in the five watersheds of the Greater Milwaukee area.
Mr. Jeff Martinka, (414) 382-1766

Technical Assistance to Local Governments
Bay-Lake Regional Planning Commission
$20,000
Support coastal management activities and provide technical assistance to local governments in the Bay-Lake region.
Ms. Angela Pierce, (920) 448-2820

Technical Assistance to Local Governments
Northwest Regional Planning Commission
$20,000
Support coastal management activities and provide technical assistance to local governments in the Lake Superior region.
Mr. Jason Laumann, (715) 635-2197

Technical Assistance to Local Governments
Southeastern Wisconsin Regional Planning Commission
$20,000
Support coastal management activities and provide technical assistance to local governments in the Southeast region.
Dr. Don Reed, (262) 547-6721

Coastal Wetland Inventory
Department of Natural Resources
$90,691
Convert aerial photographs to digital files for Manitowoc and Marinette Counties and update wetland map changes in other coastal counties.
Ms. Lois Simon, (608) 266-8852

Technical Assistance to Local Governments
Department of Natural Resources
$389,230
Support core waterway and wetland permitting staff and local government technical assistance in the three coastal regions.
Ms. Lois Simon, (608) 266-8852

Bayfield County

Village of Cornucopia Breakwater Access Enhancement
Town of Bell
$26,000
Develop public access to the existing outer breakwater that protects Cornucopia's harbor entrance.
Mr. Bill Sloan, (715) 742-3470

Brown County

East River Trail Connection
City of Green Bay
$44,000
Develop engineering studies to complete the East River Trail and connect three major trails in downtown Green Bay.
Mr. Dan Ditscheit, (920) 448-3381

Brown County Shoreland and Environmentally Sensitive Area Toolkit
Brown County Planning Commission
$29,968
Create a GIS maps toolkit, a best-practices report and a pamphlet to ensure compliance with updated state shoreland development standards.
Mr. Aaron Schuette, (920) 448-6486

Door County

Beach Park Public Access Enhancement Project
Village of Egg Harbor
$2,500
Purchase markers for swimming and non-motorized boat launch sites at the Village of Egg Harbor's new beach and marina.
Mr. Josh Van Lieshout, (920) 868-3334

Douglas County

Douglas County Shoreline Recession Analysis
Douglas County
$34,095
Identify appropriate building setbacks, promote public awareness of bluff erosion and provide the framework for the development of future shoreline setback standards.
Mr. Steve Rannenberg, (715) 395-1389

Iron County

Iron County Shoreline Recession Analysis
Iron County
$20,340
Identify appropriate building setbacks, promote public awareness of bluff erosion and provide the framework for the development of future shoreline setback standards.
Mr. Tom Bergman, (715) 561-5414

Kenosha County

Pike River Watershed Nonpoint Source Pollutants
City of Kenosha
$29,192
Develop a baseline assessment of the water quality of the Pike River watershed and examine multiple pollution sources along Lake Michigan.
Ms. Shelly Billingsley, (262) 653-4149

Water Conservation Plan
Kenosha Water Utility
$20,000
Develop a water conservation plan for the communities served by the Kenosha Water Utility.
Mr. Steven Mills, (262) 653-4304

Southport Beach House
City of Kenosha
$15,000
Prepare plans for the restoration of the historic Southport Beach House.
Ms. Shelly Billingsley, (262) 653-4149

Manitowoc County

Riverwalk Trail and Museum Commons Project
City of Manitowoc
$64,000
Improve publicly owned walkways on the Manitowoc River and provide a link to the Mariners Trail.
Mr. Paul Braun, (920) 686-6930

Harbor Master Plan Development
City of Two Rivers
$30,000
Develop a Two Rivers Harbor Master Plan that will guide future strategic harbor improvements.
Mr. James McDonald, (920) 793-5540

Lakeside Boulevard Bluff Erosion Study Plan
City of Manitowoc
$15,000
Update the 1989 bluff erosion study to recommend stabilization alternatives for Lake Michigan shoreline.
Ms. Valerie Mellon, (920) 686-6910

Milwaukee County

Milwaukee River Bulkhead Survey
Port of Milwaukee
$40,000
Conduct a survey of the Milwaukee River estuary shoreline to update property records that have remained unchanged for 80 years.
Mr. Larry Sullivan, (414) 286-8139

Milwaukee Lakefront Gateway Master Plan
City of Milwaukee
$34,000
Develop a plan focused on connecting the eastern edge of downtown Milwaukee with the recreational and cultural amenities of the lakefront.
Mr. Robert Harris, (414) 286-5654

Take a Hike! Milwaukee River Watershed Education Program
River Revitalization Foundation
$28,030
Establish a training program for teachers and students to lead hikes using RiverQuest and its web-based lesson plans.
Ms. Kimberly Gleffe, (414) 271-8000

Menomonee River Watershed Stream Passage Impediments
Milwaukee Riverkeeper
$25,000
Identify and inventory stream impediments along the Menomonee and Little Menomonee Rivers, and prioritize barrier removals.
Ms. Cheryl Nenn, (414) 287-0207

Our Great Lakes – the Cradle of Life for Man & Birds Alike
Schlitz Audubon Nature Center
$24,571
Develop and implement courses highlighting the Lake Michigan flyway and the Great Lakes as a critical water resource.
Ms. Elizabeth Cheek, (414) 352-2880

Public Access and Resource Protection at Cambridge Woods
Milwaukee County Parks
$19,400
Designate the Cambridge Woods parcel on the Milwaukee River as a nature sanctuary, support planting of vegetative screening and improve access to the river.
Mr. James Keegan, (414) 257-4775

Building Connections to the Kinnickinnic River
City of Milwaukee
$15,000
Construct and improve a trail head and trails that connect to the Kinnickinnic River Trail, and provide education and recreational programming.
Mr. David Misky, (414) 286-8682

Great Lakes Model School Integration
Alliance for the Great Lakes
$15,000
Develop a plan to field test and integrate Great Lakes education into district level curriculums.
Ms. Stephanie Smith, (773) 486-9059

Ozaukee County

Critical Habitat in Cedarburg Bog
Friends of the Cedarburg Bog, Inc.
$34,783
Identify critical areas for protection of groundwater that support habitat for rare species including the Hine's emerald dragonfly and eastern prairie fringed orchid.
Ms. Carl Schwartz, (414) 446-9501

Ozaukee County Coastal Fish and Wildlife Habitat
Ozaukee County
$29,983
Map existing and potential wetland and wildlife habitat and generate data to prioritize county planning, landowner outreach, habitat protection and restoration.
Mr. Andrew Struck, (262) 238-8275

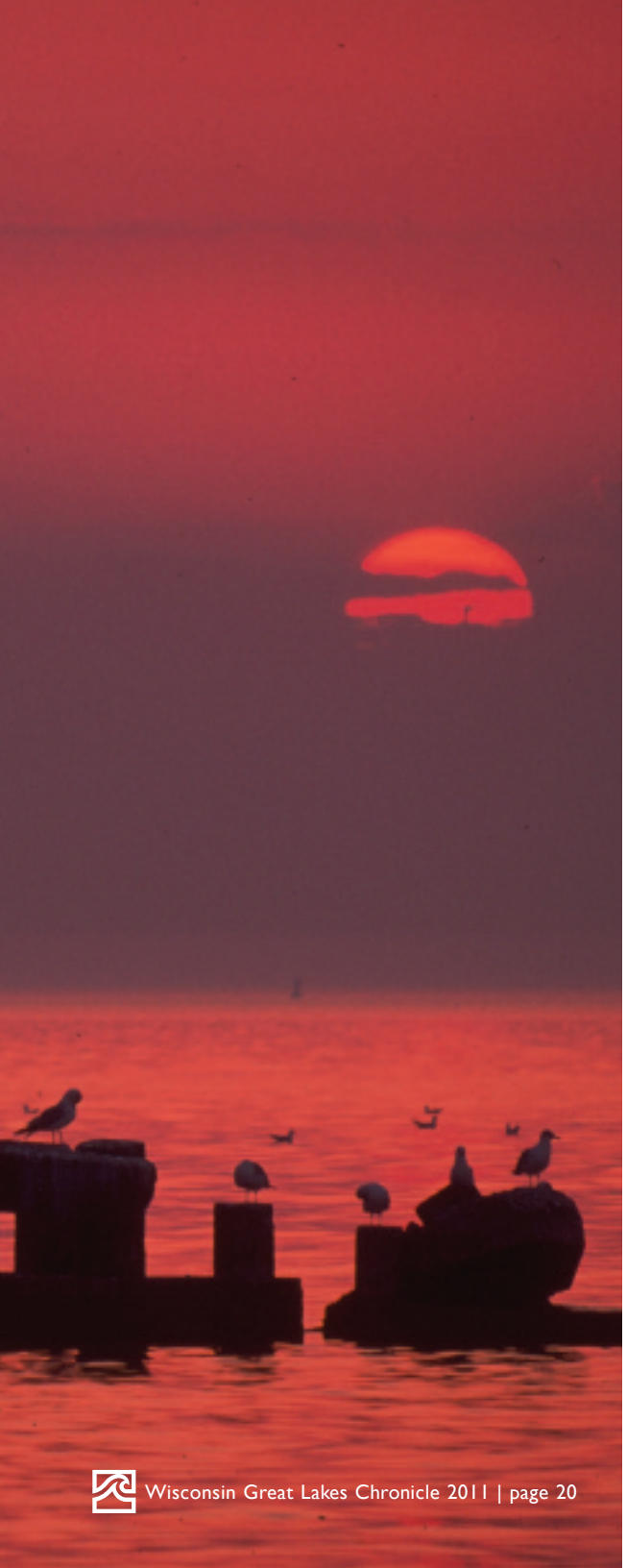
Racine County

Root River Watershed Restoration Plan
Racine County
$58,050
Develop a restoration plan including recommendations to improve water quality and natural habitat, and intergovernmental cooperation to meet discharge permit requirements.
Mr. William McReynolds, (262) 636-3273

Root River Industrial Corridor Re-development Standards
Root River Council
$46,016
Develop site-specific engineering standards to create an overlay zoning district along the Root River corridors identified in the Racine Downtown Plan.
Mr. Ben Lehner, (272) 488-1277

Sheboygan County

Wetlands Assessment and Improvement Plan
Village of Howards Grove
$12,020
Assess and inventory sixteen acres of wetlands along six miles of the Pigeon River and Fisher's Creek and develop a plan for future wetland protection actions.
Mr. James Schuette, (920) 565-3051



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Wisconsin Coastal Management Program

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2, Twin Ports, Harald "Jordy" Jordahl

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5, Milwaukee, Eddee Daniel

6, Milwaukee, Courtesy of Visit Milwaukee

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10, Houghton Falls, Travis Olson

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13, Bradford Beach, Courtesy of Milwaukee County Parks

14, Sowing Wild Rice, Amy Eliot

15, Wild Rice Enclosure, Amy Eliot

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20, Racine, Courtesy of Dept. of Tourism

21, Lake Superior, Diane Daulton

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WISCONSIN COASTAL MANAGEMENT PROGRAM

Wisconsin Coastal
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