

Wisconsin Great Lakes Chronicle 2015



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Sturgeon Bay Ship Canal Lighthouse



FOREWORD

Governor Scott Walker

Dear Friends of the Great Lakes,

Wisconsin Great Lakes Chronicle was created in 2002 to provide citizens and community leaders with insightful articles about economic, environmental and cultural issues impacting Wisconsin's Lake Michigan and Lake Superior coasts. I am pleased that the 2015 edition includes the 100th such article. Progress toward healthier, more vibrant coastal communities is demonstrated in several important areas.



Commerce. State agencies worked with the Wisconsin Commercial Ports Association to create the Wisconsin Commercial Ports Master Plan. This initiative—funded in part by the Wisconsin Coastal Management Program (WCMP)—outlines ways Wisconsin ports can promote domestic and international shipping based on recommendations of the Council of Great Lakes Governors' Great Lakes Maritime Task Force.

Coastal Tourism. WCMP has funded water trails that provide canoe and kayak access to our coastal waterways, such as those on Lake Superior tributaries and the Milwaukee River. These trails encourage active recreationalists to visit coastal communities and contribute to Wisconsin's tourism economy.

Working Together. The Wisconsin Harbor Towns Association (WHTA)—a non-profit organization representing Wisconsin Great Lakes towns—was formed in 2000 with assistance from WCMP and achieved sustainability in cooperation with the Department of Tourism. A recent WCMP grant funded the Wisconsin Harbor Towns Travel Guide available at wisconsinharbortowns.net.

Promotion. WCMP has funded Discover Wisconsin television programs promoting Lake Michigan, Lake Superior, the Apostle Islands and Door County. WCMP worked with Discover Mediaworks, Inc., the Department of Tourism, WHTA and communities to educate viewers on the importance of Great Lakes resources, sustainable travel and premiere tourist destinations. Learn more at discoverwisconsin.com.

Safety. The Apostle Islands National Lakeshore sea caves are a popular—but often hazardous—place for visiting kayakers. Even when conditions appear calm from the shoreline, waves may be higher and more treacherous at the caves. WCMP funding helped create a Real Time Wave Observation System that allows visitors to review conditions before entering the sea caves. Current wave conditions are available online at wavesatseacaves.cee.wisc.edu.

Public Health. Wisconsin is restoring, enhancing and monitoring Great Lakes beaches to improve public health and provide recreational opportunities.

WCMP, Great Lakes Restoration Initiative, Department of Natural Resources, Fund for Lake Michigan and communities are funding beach restoration projects at Egg Harbor, Sturgeon Bay, Ellison Bay, Milwaukee, Racine and Washburn.

Community revitalization. The Menomonee River Valley was declared a brownfield in 1990, but a public-private partnership led efforts to clean up contamination and redevelop the valley with new businesses. Public places like Three Bridges Park and the Hank Aaron State Trail encourage people to bike, fish and kayak in this once neglected stretch of river. WCMP has helped fund this renaissance.

Government collaboration. The City of Milwaukee, Milwaukee County and the State of Wisconsin are improving public access and increasing connections among the lakefront, downtown and Historic Third Ward. WCMP funded initial planning and design efforts for the Milwaukee Lakefront Gateway Project. The final four entries from the Lakefront Gateway Plaza National Design Competition can be viewed at milwaukee.gov/lakefrontplaza.

Enjoy this year's *Chronicle* celebrating the work and creativity of those who make Wisconsin Great Lakes coasts great.

The Wisconsin
Commercial Ports
Development Initiative
is a first step toward
leveraging greater
freight movement
through Wisconsin's
commercial ports.

COMMERCIAL PORTS: WISCONSIN'S COMPARATIVE ADVANTAGE

Ernie Perry, PhD

A renewed interest in maritime freight movement is underway. State-level marine freight leadership, regional marine freight partnerships and reduced costs to shippers are driving a renaissance in marine freight shipping. And for good reason.

The Federal Highway Administration reports that more than 54 million tons of freight valued at over \$48 billion moves across the country every day, and freight tonnage moved is expected to increase by over 40 percent by 2040. With highways at capacity and railroads at similar levels of saturation, marine freight movement is a sensible, economic approach to expanding and managing the transportation system, which in turn supports our economy and port communities.

Increased logistics and transportation activity at Wisconsin ports support quality jobs as well as sustainable community and economic development. The National Oceanic and Atmospheric Administration, Office of Coastal Management estimates that Wisconsin's marine sectors employ more than 38,000 workers. These are well-paying jobs. The US Bureau of Labor Statistics reports median pay of positions classified as water transportation occupations was 29 percent higher than the median for all jobs.

Established freight corridors also provide access to resources and businesses—as well as economic efficiencies—that attract and cluster businesses. Consider that 30 percent of Wisconsin's total

businesses and 35 percent of total employment fall within three miles of just three of Wisconsin's major highway freight corridors: Interstates 90, 94 and 43. Freight corridors—highway, marine or rail—benefit and thus attract business and industry.

Wisconsin is naturally endowed with resources and access to marine corridors necessary to leverage marine freight development. Wisconsin ports are transportation and economic engines that support business and industry, moving 30 million tons of freight worth more than \$2.4 billion and generating more than \$1.6 billion in economic activity annually. With commercial ports on Lake Superior, Lake Michigan and the Upper Mississippi River, Wisconsin enjoys a comparative advantage in business and logistics.

However, after decades of near-exclusive focus on highway infrastructure, the road and rail systems are at capacity and will simply not be able to move the increasing loads of freight. In Wisconsin, only five percent of freight moves on waterways while highway and rail congestion continue to increase.

Wisconsin's Great Lakes ports have only partially taken advantage of opportunities for increasing freight activity and the economic benefits that arise from marine freight development. And only six commodities—wheat, cement, nonmetallic minerals, limestone, iron ore and coal—constitute 96% of the waterways tonnage moved across the state's Great Lake ports.

The Wisconsin Commercial Port Development Initiative (WCPDI) produced a strategic plan for increasing freight movement through Wisconsin ports to stimulate economic activity and create high quality jobs. The Wisconsin Commercial Port Association (WCPA) teamed up with the Wisconsin Economic Development Corporation (WEDC), the Wisconsin Coastal Management Program (WCMP), the Wisconsin Department of Transportation, the Wisconsin Department of Natural Resources, Brown County, the Wisconsin Transportation Development Association and the University of Wisconsin-Madison to conduct the project. The initiative also leveraged funding from the WCMP, WEDC, WCPA and UW-Madison.

Based on the project's infrastructure and market inventories, freight data and stakeholder input, the project team identified four key strategic areas and 22 distinct strategic initiatives to support freight development at Wisconsin ports.

The four areas of strategic action are:

- Increased awareness and advocacy for port and waterways development.
- Increased market share of marine capable commodities.
- Increased funding for port and waterway infrastructure.
- Increased cooperation, planning and collaboration to further develop Wisconsin's marine presence and network.

The WCPDI represents the first steps in supporting continued advancement of Wisconsin ports as logistics and business hubs. Infrastructure and market inventories provide the baseline for planning and investment. Stakeholder participation and input reflect a more collaborative network of ports and industries working to ensure the marine freight system supports their needs.

Based on this results of the WCPDI, the project team continues to work with ports and industry stakeholders to advance freight development at Wisconsin ports. In addition to continued agency collaboration—and work to increase awareness through presentations at the state and national levels—WCPDI kicked off Phase II in July 2015. Phase II is designed to identify commodities, cargo or other goods that could move more efficiently across Wisconsin's commercial ports—but are not currently doing so. The project team will assess the feasibility and benefits of moving these commodities and cargo through Wisconsin ports.

The WCPDI is a first step toward leveraging transportation infrastructure, burgeoning freight loads and national marine development momentum toward greater freight movement through Wisconsin's commercial ports. With solid community, agency and industry participation, increased freight activity at Wisconsin commercial ports will bring quality jobs and long-term economic stability to port and harbor communities across the state.

For more information or to access the entire WCPDI report, visit cfire.wistrans.org/research/projects/09-02.

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The NOAA Coastal Storms Program has enabled Great Lakes communities to become safer and more resilient.

NOAA COASTAL STORMS PROGRAM

Julia Noordyk

Intense storms are increasingly having a negative impact on our coastal communities. Flooding, agricultural and urban runoff pollution, coastal erosion and hazardous swimming conditions are all problems associated with greater intensity and more frequent coastal storms in the Great Lakes.

According to research by the Wisconsin Initiative for Climate Change Impacts (2011), Wisconsin may receive two to three more extreme precipitation events—of at least two inches—per decade, or roughly a 25% increase in frequency by the mid-twenty-first century.

Cue the Great Lakes Coastal Storms Program (CSP)—a regional effort led by the National Oceanic and Atmospheric Administration (NOAA)—to make Great Lakes communities safer by reducing the loss of life and negative impacts of coastal storms.

Since 2012, CSP has provided manpower and funding to help the region become more resilient to extreme weather hazards and climate change. In Wisconsin, University of Wisconsin (UW) Sea Grant, University of Wisconsin-Madison and Wisconsin Coastal Management Program (WCMP) have been working with CSP to assist coastal communities in planning for and mitigating the increasing risks associated with coastal storms.

One of the most inspiring projects is spearheaded by UW-Madison coastal engineering scientist Dr. Chin Wu. Dr. Wu sprang into action after

the death of a high school student at Port Washington's North Beach in 2012. Since 2005, at least 26 swimmers have died at Wisconsin beaches from dangerous currents, high waves and piers.

Dr. Wu was awarded a \$200,000 CSP grant to pilot test innovative, real-time rip current detection technology at North Beach and Bradford Beach in Milwaukee. Video imaging will provide critical information to beach managers and swimmers about current swimming conditions and risk levels. UW Sea Grant and WCMP also serve as project partners and are providing outreach to the communities with the goal of improving public safety management at the beaches.

UW Sea Grant and WCMP also received CSP funds to participate in a regional beach safety collaborative along with Minnesota, Illinois, Indiana and Michigan. The primary mission of the collaborative is to increase public awareness on how to recognize and respond to dangerous currents and waves at Great Lakes beaches. The collaborative is using Great Lakes-specific social science research to create new, consistent messaging about dangerous currents and waves. This includes a new water safety campaign—www.currentsmart.org—and awareness messages like *When the Waves Are High, Stay Dry*.

Along with new messaging, the collaborative is distributing beach safety and emergency rescue equipment—youth life jackets, throw rings, rescue stations, warning signs and others—to local

beaches around Lake Michigan and Lake Superior. Working with NOAA's National Weather Service, UW-Oshkosh and the Wisconsin Department of Natural Resources, UW Sea Grant and WCMP distributed much needed safety equipment to 41 Wisconsin beaches for the 2015 season.

In addition to beach safety, CSP is supporting efforts in Wisconsin to improve decision making on the design and placement of coastal structures such as offshore breakwaters, retaining walls, piers and docks. Upshore structures can exacerbate shoreline erosion at adjacent, downshore properties by blocking sand from drifting down the coast.

While it has long been known that coastal structures can greatly influence how sand travels along the shoreline, the downdrift impacts of these structures—groins, jetties and solid docks—have not typically been examined when designing, permitting or building them along the shore. The loss of sand that would otherwise be deposited at downshore properties has resulted in conflicts among landowners.

In response, UW Sea Grant is working with a UW-Madison engineering graduate student to develop a web-based decision making tool that will visualize the impacts of placing coastal structures on Wisconsin shorelines. The tool will provide science-based information to property owners and regulatory agencies to improve permitting decisions for the replacement or

construction of new shoreline structures leading to fewer delays and faster processing.

CSP is also focused on reducing the negative effects of climate change on Wisconsin coastal communities through hazard mitigation planning. As average annual temperatures in Wisconsin continue to rise, there will be shorter, warmer winters, decreased lake ice cover and an increased frequency in heat waves, severe rainstorms and drought.

Currently, local hazard mitigation plans—required by FEMA to receive pre- and post-disaster funding—rely on historical hazard occurrence to calculate risk. Climate change may make past trends unreliable sources for predicting future impacts, frequency, probability and vulnerabilities.

In fall 2014, UW Sea Grant partnered with the Bay-Lake Regional Planning Commission to help the Oconto County Hazard Mitigation Planning Committee consider the possible impacts of climate on natural hazards. The County's hazard mitigation plan now includes recommendations for mitigating climate impacts on water resources, tourism and recreation, infrastructure and maintenance activities.

Great Lakes communities are faced with unique challenges under a changing climate. Fluctuating lake levels, more intense storms and increasing development all put Wisconsin's coastal communities at risk for flooding, shoreline erosion and hazardous swimming conditions.



It is often up to local communities to figure out how to identify, prepare and mitigate these risks. By connecting federal resources to local needs, the NOAA Coastal Storms Program has enabled Great Lakes communities to become safer and more resilient to the negative impacts caused by coastal storms.

Julia Noordyk is the NOAA Coastal Storms Program Outreach Coordinator at the University of Wisconsin Sea Grant Institute. She can be reached at (920) 465-2795 or noordykj@uwgb.edu.

The Cat Island Chain restoration has produced improved water quality, re-vegetation of near shore areas and an increase in waterfowl species.

CAT ISLAND CHAIN RESTORATION

Mark A. Walter

The southern edge of Green Bay contains a wetland habitat complex that was once one of the largest and most diverse in the Great Lakes. In the bay, shallow waters and extensive beds of submergent and emergent aquatic vegetation provide a major stopover for waterfowl and other migrating birds—as well as habitat for varied populations of water birds, furbearers, invertebrates and native fishes. Geographically, the west shore of Green Bay also provides a leading line that guides and concentrates migrating birds from a broad northern opening to the southern tip of the bay.

These wetlands were historically protected from high energy wave and storm actions by the Cat Island chain of barrier islands. According to US Fish and Wildlife Service (USFWS) surveys conducted in the 1990s, the Cat Islands provided nesting habitat for thirteen species of colonial nesting water birds—the highest species diversity of any island in the Great Lakes.

During extremely high water levels in the mid-1970s, a series of severe storms during ice breakup resulted in catastrophic erosion and ice damage to the islands. While remnant islands and wetland habitat remained, most was lost or degraded due to erosion negatively affecting both habitat and water quality.

Local officials took note of negative impacts of the lost habitat and went to work. In 1988, the Lower Green Bay Remedial Action Plan identified rebuilding the Cat Island chain as the top priority for habitat restoration in the bay. In 2005, Brown County received a Lake Bed Grant (2005 Wisconsin Act 390) from the Wisconsin Legislature to allow for reconstruction of the Cat Islands.

In 2012—after nearly 25 years of planning and searching for funding—the Brown County Port & Resource Recovery Department began reconstruction of the Cat Island chain through funding provided by a \$1.5 million US Environmental Protection Agency (EPA) Great Lakes Restoration Initiative (GLRI) grant. Brown County completed the initial phase of the project through construction of a wave barrier extending 3,900 feet into the bay. Additional phases have been funded through a cooperative effort between Brown County and the US Army Corps of Engineers (Corps).

The remainder of the wave barrier—as well as the side dikes for the three islands and an offloading facility—was completed by the Corps from 2012 to 2014. The project has been designed as three open-backed islands with a connecting dike that serves as a wave barrier. The islands will be filled over the next twenty to thirty years by the Corps using clean dredge material from maintenance of the Green Bay Harbor.



The 2.5-mile long wave barrier along the remnant Cat Island shoals will protect and restore approximately 1,225 acres of shallow water and wetland habitat. The wave barrier provides the base for filling the three islands with beneficially reused fine sands dredged from the outer navigation channel.

By blocking wave energy, the 272-acre islands and wave barrier are recreating island habitat and reestablishing aquatic plant beds in the lower bay. Restoring the islands will lead to recovery of much of the important lower bay habitat that benefits sport and commercial fisheries, colonial nesting water birds, shorebirds, waterfowl, marsh

nesting birds, amphibians, turtles, invertebrates and furbearing mammals. The wave barrier will provide long term protection to the barrier islands and restored wetlands from future storm and ice damage.

While the total project was originally estimated at \$35 million, the final cost estimate is just under \$17 million with Brown County providing 35%—or about \$6 million—as match for the construction phases completed by the Corps. The project is a partnership between the Port of Green Bay, Brown County, the Corps, the EPA, the USFWS, the Wisconsin Departments of Transportation (DOT) and Natural Resources

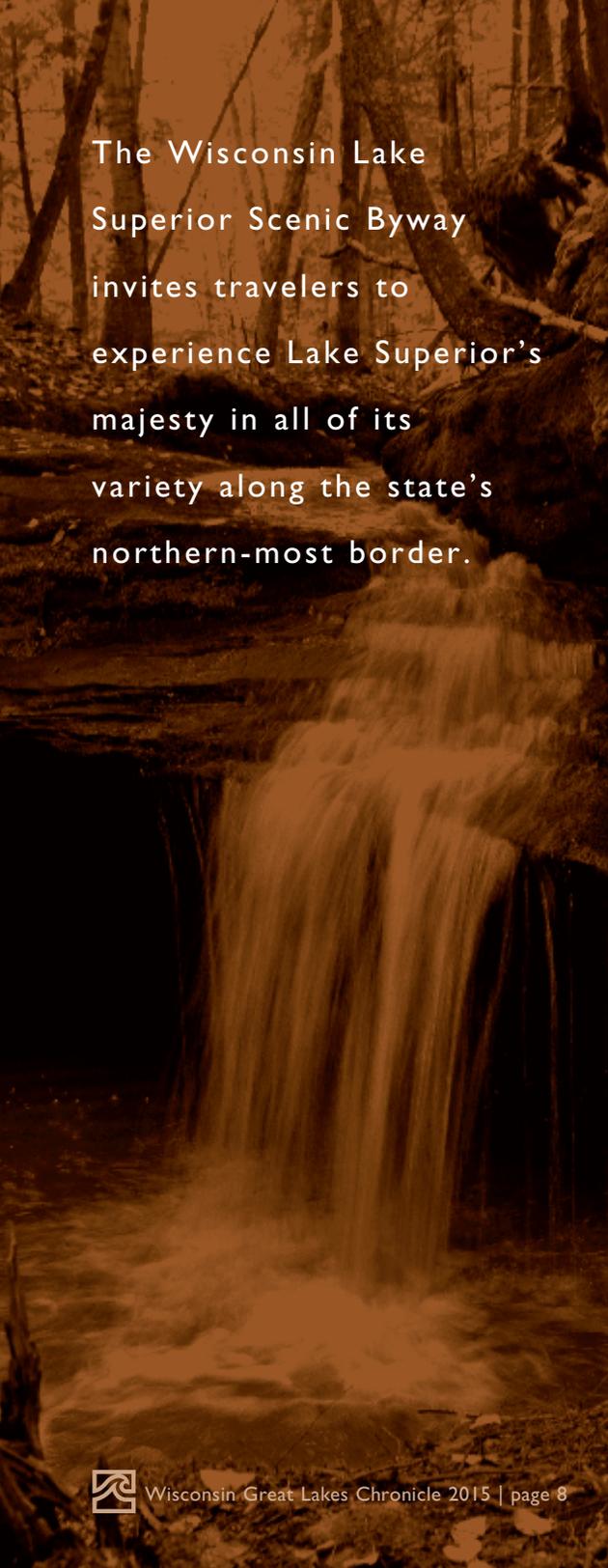
(DNR), the Lower Fox River/Green Bay Natural Resources Trustee Council, University of Wisconsin (UW) Sea Grant, University of Wisconsin-Green Bay and fourteen Port terminal operators. Funding has been provided from GLRI grants, a DOT Harbor Assistance Program grant, a DNR Damages Assessment grant and funds collected by the Port of Green Bay.

Oversight for the project and future management decisions are provided by the Cat Island Advisory Committee (CIAC) which was established by the DNR as part of its Water Quality Permit for the project. The permit establishes the CIAC as a five-member committee with one representative each from the DNR, the Port of Green Bay, the Corps, the USFWS and a citizen member. In addition, advisory members from UW-Green Bay, UW Sea Grant and other organizations provide input to the committee on a variety of issues dealing with management of the islands.

Impacts of the Cat Island Chain restoration have already been seen in improved water quality, re-vegetation of near shore areas and an increase in waterfowl species. The project is also seen as a model for beneficial reuse of dredge material. We expect to see impacts well into the future.

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The Wisconsin Lake Superior Scenic Byway invites travelers to experience Lake Superior's majesty in all of its variety along the state's northern-most border.

WISCONSIN LAKE SUPERIOR SCENIC BYWAY

Mary Nowakowski

The story behind the founding of the Wisconsin Lake Superior Scenic Byway (WLSB) has as many twists, turns, hills and valleys as the 72-mile route that follows the shoreline of the Bayfield Peninsula. It is a compelling story that unfolded over 27 years when the dream of establishing a scenic byway predated both the National Scenic Byway and the State of Wisconsin's Scenic Byway programs.

The chronicle starts in 1986 when Bayfield Mayor Larry MacDonald and a group of local citizens envisioned a special designation for Wisconsin State Highway 13 along the Bayfield Peninsula. The informal group discussed how the highway could be promoted to showcase the unusual combination of geologic, historic, cultural and recreational features on the route.

The Apostle Islands National Lakeshore was established in 1970 and anchors the scenic route. The Apostle Islands archipelago includes 22 islands located just off of the Bayfield Peninsula. The Gaylord Nelson Wilderness Area was added in 2004. Sandstone cliffs—carved out by the wave action of Lake Superior—are a prominent geological feature along the Byway.

The riches of natural resources along the route are almost embarrassing. The Chequamegon-Nicolet National Forest, Frog Bay Tribal National Park, Bark Bay Slough, Houghton Falls, Lost Creek Bog, Apostle Island National Lakeshore Caves at Meyers Beach, Nourse Sugarbush and Port Wing Boreal Forest Natural Areas, Moquah Barrens

Wildlife Management Area, and the Whittlesey Creek National Wildlife Refuge are all accessed from the Byway.

Historic and cultural sites are plentiful. There are ten historic sites, three historic districts and seven shipwrecks on the National Register of Historic Places. Within the boundaries of Apostle Islands National Lakeshore is the largest single collection of lighthouses in the country—seven of which are listed on the National Register.

The Red Cliff Band of Lake Superior Chippewa Reservation is also located along the Byway. The Tribe migrated from the eastern United States in the mid-1600s and followed the south shore of Lake Superior to a prophesized place where *food grows on water*—the plentiful crop of wild rice that is still harvested in the Kakagon Sloughs. Small towns linked by the route reflect the rich cultural heritage of immigrant lumberjacks, fishermen and brownstone quarry workers who came to the area in the late 1800s.

With this depth of resources, the establishment of a scenic byway should have been easy. But the process ebbed and flowed for years as different groups picked up the process only to have it lose momentum. In the meantime, the National Scenic Byway program was established in 1995 and provided a clear framework for the designation process. The State of Wisconsin program mirrored the national guidelines and was established by the Department of Transportation in 1999.

In 2011, a new committee was formed with guidance from University of Wisconsin-Extension Community Resource Development Agent Tim Kane. A group of community leaders and interested citizens met regularly to hammer out the details necessary to submit a formal application to the State of Wisconsin.

Phase 1 of the process required a mile-by-mile inventory of the present condition of scenic resources and assessment of complementary resources. This process allowed the committee to scrutinize the route using a standard set of guidelines and establish a baseline of current conditions as the starting point for writing the Corridor Management Plan (CMP).

The CMP addresses the goals, protection, promotion strategies, action schedule and responsible entities by which the WLSB is managed. The committee completed a very detailed CMP with five major goals, multiple objectives under each goal and specific activities that support each objective. Each objective and activity lists a lead entity, potential partners and deadlines for completion. The CMP serves as a clear road map for managing the Byway.

The state program requires that resolutions supporting the Byway be signed by every local government through which the route passes. But the WLSB took this one step further and established an Intergovernmental Council to help oversee the Byway. Each of the eleven



communities—plus Bayfield County and the Red Cliff Tribal Council—has a designated representative. The Council meets monthly to implement the CMP, talk about common issues and work to ensure that local ordinances do not compromise the long term goals of the Byway.

The WLSB was officially dedicated on April 18, 2013—27 years after the initial efforts began. Since then, the Council has assembled an impressive array of accomplishments. The Wisconsin Coastal Management Program (WCMP) awarded the Byway a grant to produce a printed map identifying recreational, cultural, historical and geological places of interest.

The map will be a complementary resource to the Lake Superior Water Trail Map that was funded

by WCMP and produced by the Northwest Regional Planning Commission. The WLSB's website—www.lakesuperiorbyway.org—averages almost 2,000 visits per month and contains a wealth of information about the route. A 2015 WCMP grant will provide funding to construct ten interpretive kiosks along the route.

The WLSB combines promotion, protection and preservation along one of Wisconsin's most beautiful highways. The Byway invites travelers to experience Lake Superior's majesty—in all of its variety—along the state's northern-most border.

Mary Nowakowski is the Chair of the Wisconsin Lake Superior Scenic Byway Intergovernmental Council. She can be reached at (715) 301-0819 or marycaroline1850@gmail.com.

Wisconsin's proposed sanctuary contains an extraordinary collection of shipwrecks including fifteen on the National Register of Historic Places.

THE NATIONAL MARINE SANCTUARY SYSTEM

Ellen Brody and John H. Broihahn

For the past 40 years, national marine sanctuaries have protected special places in America's ocean and Great Lakes waters—from the site of a single Civil War shipwreck to a vast expanse of ocean surrounding remote coral reefs. The National Oceanic and Atmospheric Administration's (NOAA), Office of National Marine Sanctuaries serves as the trustee for this system of fourteen marine protected areas encompassing more than 170,000 square miles of ocean and Great Lakes waters.

Within these protected waters, whales feed and migrate, coral reefs flourish and shipwrecks reveal secrets of our maritime history. Through public engagement, research, management and education programs, national marine sanctuaries protect and interpret these special places.

The first and only designated national marine sanctuary in the Great Lakes is the Thunder Bay National Marine Sanctuary (NMS) off the coast of Alpena, Michigan in Lake Huron. Jointly managed by NOAA and the State of Michigan, the sanctuary was designated in 2000 to protect and conserve a nationally significant collection of shipwrecks. The sanctuary—which recently expanded to 4,300 square miles—now protects and interprets nearly 100 known shipwrecks. Thunder Bay NMS has played a significant role in the region's economy by promoting tourism and recreation in northeast Michigan.

In response to ongoing and widespread interest from the public in the value of sanctuaries to protect treasured places and enhance local economies, NOAA has launched a new, locally-driven sanctuary nomination process. For the first time in two decades, NOAA invites communities across the nation to nominate places in marine and Great Lakes waters for consideration as national marine sanctuaries.

The nomination process will result in an inventory of areas NOAA will consider for national marine sanctuary designation, taking into account input and support from local, regional and national interests and organizations. Consideration will also be based on a proposed area's national significance and the feasibility of managing it. The nomination process will not result in the automatic designation of any new national marine sanctuaries—designation occurs as a separate process that is highly participatory and often takes years to complete.

In December 2014, Governor Scott Walker submitted the State of Wisconsin's sanctuary nomination to NOAA. The nomination—which is focused on protecting and interpreting a nationally significant collection of shipwrecks—proposes an 875-square-mile area encompassing Lake Michigan waters adjacent to Port Washington, Sheboygan, Manitowoc and Two Rivers. The nomination package includes over 100 letters of support from a variety of businesses, community organizations, agencies, elected officials and units of local government.



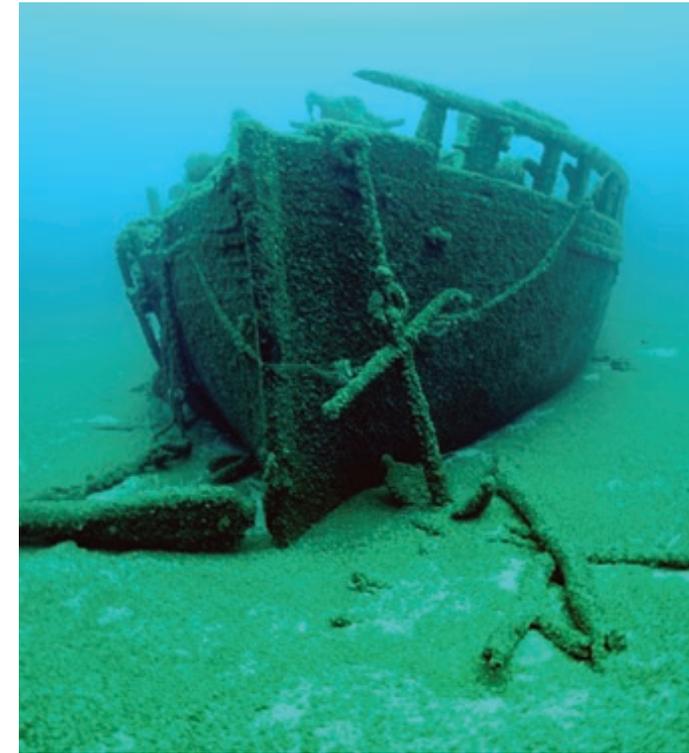
The proposed sanctuary contains an extraordinary collection of shipwrecks as demonstrated by the listing of fifteen wrecks on the National Register of Historic Places overseen by the Wisconsin Historical Society and State Review Board. Archival and archaeological research indicates that the proposed sanctuary includes 122 reported vessel losses. Currently, 34 of the shipwrecks are known.

Fourteen of the known shipwrecks are intact with a high degree of hull integrity. Three vessels—the *Tennie and Laura*, the *Gallinipper* and the *Silver Lake*—possess standing masts, a rarity in the Great Lakes. The proposed sanctuary includes Wisconsin's two oldest shipwrecks discovered to date—the *Gallinipper* (1833) and the *Home* (1843)—both of which remain largely intact. The *Rouse Simmons*, often referred to as the Christmas Tree ship, is also in the proposed sanctuary.

In the spirit of regional cooperation, Two Rivers, Manitowoc, Sheboygan and Port Washington support a regional partnership to obtain a national marine sanctuary. Each community has developed a local stakeholder group to provide information and insights on the nomination process, and they have formed a joint Community Working Group that includes key representatives from each of the cities and counties. Their support and enthusiasm is indicated by resolutions passed by each community and county.

The nomination highlights several goals of the proposed sanctuary:

- Preserve and expand on the nearly 60-year investment the citizens of Wisconsin have made in the identification, interpretation and preservation of shipwrecks and other maritime resources.
- Build and expand on state and local tourism initiatives and enhance job opportunities.
- Create a heightened appreciation of Great Lakes' maritime heritage resources.
- Increase both physical and virtual access to the proposed sanctuary's maritime heritage resources and promote their recreational use.
- Promote a regional approach in establishing a Wisconsin national marine sanctuary with the cities of Port Washington, Sheboygan, Manitowoc and Two Rivers.
- Partner with other NOAA programs in the Great Lakes region—including the Thunder Bay National Marine Sanctuary, the Wisconsin Coastal Management Program and the University of Wisconsin Sea Grant Institute—to sustainably manage Wisconsin's maritime heritage resources and stewardship of the Great Lakes.
- Enhance educational programming and public outreach through partnerships with local, state and regional agencies and organizations to create innovative maritime heritage and Great Lakes educational programs, including science, technology, engineering and math (STEM) programs.



In February 2015, NOAA accepted Wisconsin's nomination into the inventory of places that will be considered for national marine sanctuary designation. As of August 2015, NOAA has not made a decision about initiating the sanctuary designation process in Wisconsin. However, NOAA applauds Wisconsin for advancing its proposal to protect and preserve its maritime resources.

Ellen Brody is the Great Lakes Regional Coordinator at the NOAA Office of National Marine Sanctuaries. She can be reached at (734) 741-2270 or ellen.brody@noaa.gov. John H. Broihahn is the State Archeologist at the Wisconsin Historical Society. He can be reached at (608) 264-6496 or john.broihahn@wisconsinhistory.org.

The Friends of Plum
and Pilot Islands support
the preservation and
restoration of maritime
structures and other
historic resources.



NEW HOPE FOR ISLANDS AT DEATH'S DOOR

Tim Sweet

Plum Island is located in the middle of the Porte des Morts—Death's Door—Passage where Green Bay and Lake Michigan meet off the northern tip of Wisconsin's Door Peninsula.

The Island encompasses only 325-acres, but it has a very rich maritime history. Dating back to 1848, its importance as a shipping crossroads became apparent when Congress then set aside \$3,500 for the construction of a lighthouse along Plum Island's southeastern shore. Unfortunately, it was built in the wrong location—after just ten years the station was abandoned and a new light was built on nearby Pilot Island to help guide ships through Death's Door.

Prompted by an increasing number of wrecks in the area, a Duluth-style life-saving station was constructed on Plum Island's northeastern shore in 1896. On the opposite side of the Island, a front and rear range light and a steam-powered fog signal were added to mark the shipping channel between the bay and the lake. Keeper Martin Knudsen first lit the new Plum Island lights in May 1897.

Manned by members of the US Life-Saving Service—which was later absorbed by the US Coast Guard—the Plum Island station housed men charged with the role of protecting mariners and commerce in these waters. The range lights were cared for by members of the US Lighthouse Service

until the late 1930s when the US Coast Guard took over responsibility of those facilities as well.

In 1969, the range lights were automated. Four years later, budget cuts led to only seasonal staffing of the Plum Island station. Finally, in the early 1990s a decision was made to permanently close the station on Plum Island.

For many years the historic maritime structures on Plum Island received very little attention and were not maintained. The future of the Island seemed to be in limbo. The Bureau of Land Management became the government real estate agent of sorts in 1999 when it tried to find a new steward for the property. Once the Coast Guard completed a mandated clean up of lead paint and contaminated soil, both Plum and Pilot Islands were transferred to the jurisdiction of the US Fish and Wildlife Service (USFWS) in 2007. These two islands—along with nearby Hog Island—now form the Green Bay National Wildlife Refuge.

The islands were acquired to protect migratory bird and endangered species habitat. However, the USFWS also formed a partnership with the non-profit Friends of Plum and Pilot Islands (FOPPI). FOPPI's mission is to support the goals of the preservation, restoration and maintenance of the maritime structures and other historic resources on Plum and Pilot Islands while providing opportunities for quality wildlife-dependent recreation on Plum Island.

Over the past seven years, FOPPI has helped the USFWS put a new roof on the Pilot Island lighthouse, repainted the Plum Island boathouse, restored the front porch of the historic life-saving station, replaced rotten boards on the Plum Island pier, cleared and established trails, erected trail signs and built an informational kiosk. The organization has also received grants to fund a building stabilization plan, a dock and breakwall engineering study, and a long-term planning study.

The USFWS announced at the FOPPI 2015 Winter Board Meeting the hiring of a full-time employee who will oversee seven Lake Michigan islands under its jurisdiction. In April, the FOPPI Board met with the USFWS to further discuss plans for the buildings on Plum and Pilot Islands that are listed on the National Register of Historic Places. These plans will stabilize the buildings and protect them from further deterioration. The USFWS has obtained funding to send an eight to ten member Action Team to the islands in the summer of 2015 to stabilize the buildings with the greatest needs.

In addition, Plum Island was open to day-use by the public in 2015 from Memorial Day weekend through Labor Day. Kayakers access the Island by landing at the designated area next to the pier by the boathouse. The dock and breakwall were



closed due to safety issues and must be repaired before they are opened for public use. Larger boats may moor offshore and use a dinghy, or the like, to land on the Island at the kayak entry point.

Many special events and workdays were offered during the spring and summer of 2015 for those who visit Plum Island or become actively involved in making a difference there.

For more details, visit the Friends of Plum and Pilot Islands website at www.plumandpilot.org or its Facebook page www.facebook.com/plumandpilot. More information on the Green Bay National Wildlife Refuge may be found at www.fws.gov/refuge/green_bay.

Tim Sweet is the President of Friends of Plum and Pilot Islands. He can be reached at (715) 823-6873 or tjsweet@charter.net.

Three Bridges Park
in Milwaukee's
Menomonee Valley
offers a place of
respite in the heart
of the city.

THREE BRIDGES PARK

Corey Zetts

Many knew the Menomonee Valley by the smell that greeted them as they drove into Milwaukee—the combination of the Valley's yeast, tanning and foundry industries. But the reputation of the Valley has changed. The Valley is now nationally known as a model of revitalization, with thousands of jobs and millions of visitors to entertainment destinations, and as a place where more than 22,000 people this year will enjoy nature on a secluded slice of land along the river.

These visitors include thousands of children from neighborhood schools who will study environmental restoration. They sample macroinvertebrates from the Menomonee River—indicators of water quality—watch for birds, check for snakes, listen for bats. These are ways the community is learning about restoration in their city's backyard—and helping develop an understanding of what works in urban land restoration in the process.

Located just outside downtown Milwaukee and within sight of the Miller Park Stadium is Three Bridges Park. Opened in July 2013, this 24-acre parcel is nestled along a one-mile stretch of the Menomonee River. As straightforward as its name is, the history of these 24 acres is complex.

This land was historically a wild rice marsh and a gathering place of Native Americans for the annual harvest. In the late 1800s, the marsh was filled and the land developed by the Milwaukee

Road as a 140-acre railroad manufacturing complex. After the company went bankrupt, the large tract of abandoned factory and rail yards became a detriment to both the industrial Valley and residential neighborhoods on the bluffs above.

The land sat vacant for 30 years with the unstable bluffs eroding, collapsing and sending contaminated sediment into the Menomonee River. Kids grew up in the surrounding neighborhoods without knowing there was a river below because the Menomonee was separated from the surrounding city by railroad lines and steep bluffs.

Years of planning and dozens of partner organizations have brought a vision of a restored Valley to life. The development of Three Bridges Park was part of a comprehensive effort to improve job accessibility, science education, environmental and public health, and neighborhood vitality. Projects included transforming a vacant railyard into Three Bridges Park, turning a vacant bar into an environmental community center and reconnecting communities that had been separated for more than a generation by expanding the Hank Aaron State Trail.

With the support of the Wisconsin Coastal Management Program, conceptual designs were developed to create public access to the river, restore the riverbank and develop a public park. After a decade-long planning effort, Three Bridges Park opened in 2013.

The park includes two miles of accessible biking and walking trails that are part of the Hank Aaron State Trail. Twenty-four acres of native landscape for wildlife habitat provide a peaceful respite in the heart of the city that offers access to the Menomonee River for fishing and canoeing.

Three bike/pedestrian bridges provide access from surrounding neighborhoods to the park as well as to Valley jobs. A re-created glacial landscape of kames, eskers and drumlins—an adaptive reuse of material from a nearby highway reconstruction—are used to teach about ice age formations. Community gardens provide space for neighbors to grow food. And bluff-side locales offer panoramic views of Milwaukee.

The opening ceremony built upon the community's enthusiasm for the park and what it symbolized for a generation of Milwaukeeans who grew up knowing the Menomonee Valley as a dividing line. More than 1,000 people formed processions from each of the park's three bridge entrances—symbolically uniting north and south side neighborhoods that had been divided for decades—meeting in the middle to walk down to the Menomonee River together.

Three Bridges Park established an outdoor classroom for the Urban Ecology Center, an environmental community center that provides kids attending neighborhood schools with hands-on science education along with

community and family nature-based programs. The Wisconsin Coastal Management Program also supported efforts to engage the community in the development of Three Bridges Park through experiential educational programming, citizen science and participatory land stewardship.

Urban Ecology Center programs engage the community in studying the impacts of restoring what had long been a degraded natural resource—tracking changes in the migratory bird species seen on site, winter hibernations of snakes, bat physiology and more. Residents come to plant native plants in the park, weed invasive species and learn about changes that are happening through the restoration process. This community engagement is creating a sense of ownership of and pride in Three Bridges Park.

Today, the park offers a place for people to come together in what was once widely thought of as the dividing line in our community. Three Bridges Park itself is bridging nature and the city, allowing neighbors to cross over the industrial Valley and access a place of respite in the heart of Milwaukee. The park's programming is bridging the past and the future, educating about the rich history of this land and connecting people to its restoration through ongoing volunteer activities.

Corey Zetts is the Executive Director of Menomonee Valley Partners, Inc. She can be reached at (414) 274-4655 or corey@RenewTheValley.org.



2015 WISCONSIN COASTAL MANAGEMENT PROGRAM GRANTS

Project Name

Grantee

WCMP Award

Project Description

Contact

Coastwide

Leveraging our Comparative Advantage, Phase II: Wisconsin Port Market Scenarios

Brown County Port and Solid Waste
\$48,000

Identify commodities and goods that could be shipped in greater quantity on Great Lakes maritime routes.

Mr. Mark Walter, (920) 492-4965

Wetland Information and Guidance to Private Landowners

Wisconsin Wetlands Association
\$29,855

Develop a sustainable model for disseminating wetland information and guidance to private landowners and build an infrastructure to serve as a resource for wetlands throughout the region.

Ms. Katie Beilfuss, (608) 250-9971

WOJB-FM Multi-Media Outreach Campaign

Lac Courte Orielles Ojibwa Public Broadcasting,
WOJB-FM
\$22,556

Produce fifteen podcasts featuring interviews on successful Wisconsin Great Lakes restoration and protection initiatives.

Ms. Sydnee Kellar, (715) 643-2100

Regional Planning in Northeast Wisconsin

Bay-Lake Regional Planning Commission
\$20,000

Update the natural, agricultural, cultural resource, housing, land use and implementation elements of the Commission's Regional Comprehensive Plan.

Mr. Brandon Robinson, (920) 448-2820

Technical Assistance

Bay-Lake Regional Planning Commission
\$20,000

Support coastal management activities and technical assistance to local governments in the Bay-Lake region.

Ms. Angela Pierce, (920) 448-2820

Technical Assistance

Northwest Regional Planning Commission
\$20,000

Support coastal management activities and technical assistance to local governments in the Northwest region.

Mr. Jason Laumann, (715) 635-2197

Technical Assistance

Southeastern Wisconsin Regional Planning Commission
\$20,000

Support coastal management activities and technical assistance to local governments in the Southeast region.

Mr. Thomas Slawski, (262) 953-3263

Wisconsin Lake Superior Byway Kiosk Project

Town of Barksdale
\$8,808

Install ten informational kiosks along the Wisconsin Lake Superior Scenic Byway featuring a map and points of interest.

Ms. Mary Nowakowski, (414) 698-5479



Ashland County

Ashland County Agriculture and Natural Resource Planning
Ashland County Land & Water Conservation Department
\$22,305
Update the Ashland County Farmland Preservation Plan and Comprehensive Plan.
Mr. Tom Fratt, (715) 682-7187

Bayfield County

Bayfield Waterfront Trail, Phase II
City of Bayfield
\$55,000
Implement portions of Bayfield's Waterfront Trail including reestablished walkways, a history marker and an overlook on Wilson Avenue.
Ms. Billie Hoopman, (715) 779-5712

Brown County

Wequiock Creek Watershed Nonpoint Source Pollution and Riparian Habitat
University of Wisconsin-Green Bay
\$28,372
Develop a sustainable stream monitoring program and a collaborative outreach and education effort to support watershed protection.
Dr. Robert Howe, (920) 465-5032

Brown County Agricultural Watershed Management

Alliance for the Great Lakes
\$27,509
Engage agricultural landowners in a Brown County sub-watershed in a participatory planning process with the goal of meeting water quality standards.
Mr. Todd Brennan, (312) 445-9749

Village of Bellevue Accessible Boat Launch

Village of Bellevue
\$21,575
Develop an accessible boat launch on the East River at Manderly Park.
Ms. Candice Mortara, (920) 209-7789

Door County

Bradley Lake Stormwater Swale and Biofiltration System
City of Sturgeon Bay
\$50,000
Create a series of swales and biofiltration cells to convey up to 100-year storm events, treat water during common rain events and prevent direct drainage into Bradley Lake.
Mr. Robert Bordeau, (920) 746-6922

Sturgeon Bay Festival Waterfront Phase 2

City of Sturgeon Bay
\$50,000
Support construction of the Festival Waterfront Promenade and Walkway, a concrete event stage, public seat walls, public space lawn, sidewalks and an access driveway.
Mr. Marty Olejniczak, (920) 746-6908

Scattered Like Grape Shot

Wisconsin Historical Society
\$28,849
Direct a field school to conduct an underwater Phase II archaeological survey of the *Grape Shot*, an unsurveyed canal schooner, and incorporate fieldwork into the Maritime Trails education initiative.
Mr. John H. Broihahn, (608) 264-6496

Douglas County

Brule River Watershed Vegetative Cover Analysis

University of Wisconsin-Superior

\$57,000

Establish a baseline for measuring impacts of climate change on the Lake Superior basin by conducting Botany Blitzes to collect species lists and provide community outreach.

Mr. Paul Hlina, (715) 394-8477

Iron County

Iron County Comprehensive Plan Update

Iron County

\$40,000

Update the County's Comprehensive Plan with connections to existing community development initiatives, updated planning policies and a coastal resource element.

Mr. Tom Bergman, (715) 561-5414

Kenosha County

Southport Marina Seawall/Harbor

Entrance Redesign

City Kenosha

\$50,000

Complete a feasibility study for structures at the entrance to Southport Marina that will control sedimentation and reduce dredging costs.

Mr. Michael Lemens, (262) 653-4000

Chiwaukee Prairie Habitat Restoration & Species Inventory

Department of Natural Resources

\$30,000

Restore 100 acres of rare coastal wetlands through the removal of invasive plants and prescribed burns at a Chiwaukee Prairie site recently donated by The Nature Conservancy.

Ms. Sharon Fandel, (608) 275-3207

Manitowoc County

East Twin River Waterfront

Public Access Planning

City of Two Rivers

\$13,000

Prepare a redevelopment plan for the former Hamilton Industries property on the west bank of the East Twin River.

Mr. Greg Buckley, (920) 793-5532

Milwaukee County

Milwaukee Harbor District Waterway Plan

Redevelopment Authority of the

City of Milwaukee

\$50,000

Create a Waterway Plan with recommendations for public access, stormwater management, habitat restoration and other issues.

Mr. David Misky, (414) 286-8682

Atwater Beach South Boardwalk

Village of Shorewood

\$39,750

Construct a 410-foot raised boardwalk to connect the landings of a 114-stair staircase at the end of a 1,100-foot paved switchback trail.

Ms. Ericka Lang, (414) 847-2647

Milwaukee Riverfront Revitalization

City of Milwaukee

\$30,000

Create a public park with a 38 x 115 foot former railroad pier including new landscaping, pier re-decking and new railings and lighting.

Ms. Alyssa Remington, (414) 286-5802

Neighborhood Environmental Education Ways to Our Watersheds Project

Urban Ecology Center

\$10,000

Expand and enhance the delivery of water-based programming and exploration to elementary and middle school students through the Ways to Our Watersheds Project.

Ms. Demetria Smith, (414) 964-8505



Taking Green Infrastructure to Scale in Milwaukee's 30th Street Industrial Corridor

Clean Wisconsin
\$10,000

Create neighborhood-scale green infrastructure goals and provide recommendations on how to encourage widespread adoption of green infrastructure in the area.

Mr. Mark Redsten, (608) 251-7020

Ozaukee County

Lake Michigan Basin Fish Passage Inventory

Ozaukee County Planning & Parks Department
\$20,000

Complete an inventory of riparian habitat and barriers to fish passage in the Lake Michigan basin of Ozaukee County.

Mr. Andrew Struck, (262) 238-8275

Racine County

Stormwater Harvesting on Machinery Row

City of Racine

\$75,000

Implement stormwater harvesting infrastructure within Machinery Row to reduce the volume of discharged stormwater runoff.

Mr. Matthew Sadowski, (262) 636-9152

Improve Nearshore Coastal Water Quality

City of Racine Health Department

\$54,730

Install a 0.35-acre bio-infiltration cell to retain, infiltrate and clean surface runoff and nonpoint source pollution at Samuel Myers Park.

Dr. Julie Kinzelman, (262) 636-9501

Machinery Row Connections Design

Racine County Economic Development Corporation

\$25,000

Create schematic designs and preliminary cost estimates for an area on the Root River in the City of Racine.

Ms. Jenny Trick, (262) 898-7412

Training WATERshed Educators

River Bend Nature Center

\$15,595

Develop a sustainable system to integrate Great Lakes education into all 4th and 7th grade classrooms in the Racine Unified School District.

Ms. Nancy Carlson, (262) 639-1515

Sheboygan County

Sheboygan Harbor Wave Surge Mitigation Study

City of Sheboygan

\$32,000

Study wave damage at the Harbor Centre Marina, develop alternatives for construction that could prevent future wave damage and prepare a cost-benefit analysis.

Mr. Chad Pelishek, (920) 459-3383





ACKNOWLEDGMENTS

The Wisconsin Coastal Management Program was established in the Department of Administration (DOA) in 1978 under the Federal Coastal Zone Management Act. The program and its partners work to achieve balance between natural resource preservation and economic development along Wisconsin's Great Lakes coasts. The program thanks its principal federal partner, the National Oceanic and Atmospheric Administration, Office for Coastal Management, for the technical and financial support it provides on behalf of Wisconsin's coastal communities.

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- Contents, Bayfield, Wis. Department of Tourism
- 1, Gov. Scott Walker, Governor's Press Office
- 2, Green Bay Harbor, Wisconsin Sea Grant
- 3, *M/V James R. Barker*, Carol Wolosz
- 4, Bradford Beach, Wis. Department of Tourism
- 5, Ashland Safety Equipment, Wisconsin Sea Grant
- 6, Cat Island Chain, Brown County Port & Resource Recovery Dept.
- 7, Cat Island Chain, Brown County Port & Resource Recovery Dept.
- 8, Houghton Falls, Mary Nowakowski
- 9, Wisconsin Lake Superior Scenic Byway, Donald Albrecht
- 10, *Rouse Simmons*, Wisconsin Historical Society
- 11, *Home*, Wisconsin Historical Society
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- 13, Plum Island, Friends of Plum and Pilot Islands
- 14, Three Bridges Park, Troy Freund
- 15, Three Bridges Park, John Suhar
- 16, Ashland Marina, Wis. Department of Tourism
- 20, Washington Island, Kathy Johnson
- 21, Sunset Beach, Bayfield Chamber and Visitor Bureau

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 WISCONSIN COASTAL
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