

Wisconsin Great Lakes Chronicle
2023



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On the Cover

Whitefish Dunes State Park in
Door County, photo by Mike Friis.



FOREWORD

Governor Tony Evers

Dear Friends of Wisconsin's Great Lakes,

The Great Lakes stand among Wisconsin's most important natural resources, and my administration proudly carries on a legacy of stewardship begun by environmental leaders including Tony Earl. This



year, we celebrate Governor Earl's achievements, including the 40th anniversary of the Council of Great Lakes Governors, by continuing to protect and preserve the world's greatest freshwater ecosystem.

Work is underway on my administration's Clean Energy Plan to produce carbon-free electricity by 2050 and reduce the need for energy produced outside of Wisconsin. Going carbon-free will create new jobs supporting the green economy and reduce pollutants that enter our air and waters including the Great Lakes. I am particularly pleased our plan focuses on the health and economic well-being of disadvantaged populations, including in our coastal communities, who for too long have been overlooked by policymakers.

We continue to make progress on protecting and preserving our valuable coastal resources for future generations. In 2022, my administration partnered

with Ozaukee County to acquire the Clay Bluffs Cedar Gorge Nature Preserve, a 134-acre parcel along a three-quarter mile stretch of Lake Michigan. Together with adjacent lands, the public will now enjoy access to over two miles of coastal lands for wildlife viewing, beach activities, hiking and cross country skiing. I thank our many partners for collaborating with the state to make this one-of-a-kind coastal wonderland accessible in perpetuity.

We made similar progress along Lake Superior through a partnership with Bayfield County and the federal government. More than 2,000 acres of forest land surrounding the Sand River is now protected from development thanks to the Bipartisan Infrastructure Law (BIL) signed by President Biden. BIL's Climate Ready Coasts program provided funding for Bayfield County to acquire this unspoiled parcel near Cornucopia to protect habitat, store carbon and safeguard the Lake Superior coast. In addition to general public access, the Red Cliff Band of Chippewa Indians, which owns adjacent lands, will use the Sand River property to exercise their treaty rights for hunting and trapping.

We also focus on Green Bay where the Oneida Nation, UW-Green Bay, and Audubon Great Lakes are collaborating on bird monitoring,

public education, and outreach programs in the world's largest freshwater estuary. Additionally, the Wisconsin Coastal Management Program recently provided grant funding for a management plan that will guide the operation of the Bay of Green Bay National Estuarine Research Reserve (NERR) now under consideration for federal designation by the National Oceanic and Atmospheric Administration (NOAA).

Our work is not limited to large acquisitions and initiatives, but also includes dozens of smaller projects to help Wisconsin coastal communities grow and thrive. In June, I announced the Wisconsin Coastal Management Program made 34 Coastal Management grants totaling \$1.4 million to fight the harmful effects of climate change, improve resiliency, and provide greater access to our coastal resources. We will continue to work together with local partners to improve and sustain the health of our coastal communities and our abundant natural resources.

I am proud to continue Wisconsin's rich tradition of leadership and collaboration on Great Lakes issues. Please join me in thanking our partners in Wisconsin and beyond for helping us protect and preserve the irreplaceable coastal lands and waters of Lake Michigan and Lake Superior.

For over 180 years,
businesses and employees
have depended on
Milwaukee's maritime
economy for jobs, revenue
and transportation.

FOCUSING ON MILWAUKEE'S MARITIME FUTURE

Jackie Q. Carter

Milwaukee's lakefront, waterways and harbor boast a rich history of hard work, growth and opportunity in our city. For over 180 years, businesses and employees have depended on Milwaukee's maritime economy for jobs, revenue and transportation. As we focus on the future, that history guides us forward.

I am proud that Port Milwaukee has been a leader in Wisconsin for decades. The Port's team of experienced professionals will continue working to realize our full potential and expand our multimodal capabilities on Jones Island. 2022 provided opportunities for Port Milwaukee to show the world our capacity in meeting business needs throughout the region. We are witnessing new maritime commerce opportunities with an increase of diverse breakbulk and project cargoes, with more potential on the horizon.

Looking ahead, a major development project is nearing completion on Jones Island. The DeLong Co., Inc. Agricultural Maritime Export Facility at Port Milwaukee is beginning operations in 2023 and will generate new economic activity in the region. This new terminal will deliver Wisconsin-grown agricultural products to markets around the world, leveraging the Port's multimodal infrastructure of trucking, rail and vessels. Initial exports will begin with dried distillers grains with solubles (DDGS), and future service at the facility will include the export of commodities such as soybeans, corn and grain.

Thanks to a robust public-private partnership, this development is the largest one-time investment in Port Milwaukee since the 1950s when the St. Lawrence Seaway was built. The Wisconsin Department of Transportation has estimated the DeLong terminal will generate \$63 million in new statewide economic impact annually. Port Milwaukee looks forward to this facility becoming operational in the coming months and supporting our Made in Wisconsin economy in the years ahead.

We know well that Milwaukee is the economic engine for the State and a successful Milwaukee is imperative to a prosperous Wisconsin. While waterborne commerce is what established Milwaukee and fueled its growth, we are witnessing new recreational tourism opportunities at the Port that are advancing future economic growth and development in the region.

Following two years of pandemic-related cancellations, Milwaukee's Great Lakes cruise season returned with significant momentum and success in 2022. An unprecedented number of international passengers and cruise vessels traveled to or from Milwaukee last year. I'm pleased to report that we're just getting started.

In 2023, Port Milwaukee will welcome 31 port calls by various cruise ships bringing an estimated 12,000 passengers to the city. These international travelers stay in our local hotels, dine in our restaurants, visit our museums, learn about our

culture and enjoy all the great things Milwaukee offers, including our outdoor assets. By working with tourism and hospitality stakeholders, this effort is a wonderful example of how the Port's partnerships are creating new excitement and activity in Milwaukee.

The Port is also working to begin construction of South Shore Cruise Dock, located immediately east of the Lake Express High-Speed Ferry terminal in Milwaukee's Bay View neighborhood. This new asset will serve as the future port-of-call for the largest passenger vessels that can cruise the Great Lakes. Port Milwaukee received \$3.5 million in Capital Tourism grant funding from the State of Wisconsin to build this new infrastructure at South Shore Cruise Dock and continue growing Milwaukee's Great Lakes recreational cruise industry.

This is just one example of Milwaukee's strong partnership with the State of Wisconsin. Grant funding continues to create new opportunities for Port Milwaukee, and we are proud of our robust history and strong relationship with State-administrated initiatives like the Harbor Assistance Program (HAP) and Wisconsin Coastal Management Program (WCMP).

Because of HAP grants received by Port Milwaukee, the development of the Agricultural Maritime Export Facility is becoming a reality. The future South Shore Cruise Dock also received HAP funding and Port Milwaukee tenants continue benefiting from this critical harbor-centric grant program.



Thanks to WCMP funding, Port Milwaukee created its Capital Asset Renewal Plan (CARP), a comprehensive effort to guide present and future Milwaukee maritime leaders in planning for the Port's success over the next several decades. The CARP will inform our efforts to strategically manage needed infrastructure improvements and guide our funding strategy for long-term asset repair and replacement.

This is the type of innovative work that both the Harbor Assistance and Wisconsin Coastal Management Programs support, and the Port is grateful for our continued partnership with the State of Wisconsin in supporting improvements and upgrades in our city's harbor.

The future is bright in Milwaukee, throughout the State of Wisconsin and around the region. For those manufacturers, suppliers, farmers, consumers and other stakeholders interested in working in Milwaukee, the Port's team of trade development, marketing and freight planning professionals can help develop regional supply chain solutions, utilizing the Port's multimodal transportation, shipping and infrastructure assets.

We have the positive momentum to sustain our state's billion-dollar shipping industry, realize new economic opportunities, support our regional agriculture sector and move Wisconsin forward and into the future.

Jackie Q. Carter is the Director of Port Milwaukee. She can be reached at jqcarter@milwaukee.gov.

Bayfield's Sand River
Headwaters are vital
to the health and
functioning of Lake
Superior's coastal
resources.

CONSERVING BAYFIELD'S SAND RIVER HEADWATERS

Emily Rau and Jason Bodine

A private timberland investment management company offered about 2,000 acres of land for sale on the northern Bayfield Peninsula near unincorporated Cornucopia and the Towns of Bell and Bayfield. The land was divided into five parcels within the Sand and Siskiwit River watershed and comprised of forests, wetlands, a river and tributary streams that drain into two bays that are crucial estuarine habitats in Lake Superior.

This land is vital to the health and functioning of Lake Superior's coastal resources, but its ecological, economic, recreational and aesthetic value makes it an ideal location for development. If not conserved and protected, this land could be developed as individual parcels and thereby negatively impact watersheds and tributaries, wildlife habitat and travel corridors, forested landscapes and climate resiliency.

To protect it from development, Bayfield County sought to buy and manage the land as part of the Bayfield County Forest to ensure it is preserved in perpetuity. Acquiring this land would also complete a broader, mutually beneficial agreement with the Red Cliff Band of Lake Superior Chippewa (Red Cliff) for the County's reinvestment of proceeds from a previous land sale that repatriated nearby land formerly owned by the County to Red Cliff. However, the County did not have enough funds to buy the properties. This is where federal Bipartisan Infrastructure Law (BIL) funding comes into play.

Over the next five years, \$207 million in BIL funds, with \$44 million in funds leveraged from the Inflation Reduction Act (IRA) to support additional projects, will be administered by the National Oceanic and Atmospheric Administration's Office for Coastal Management (OCM) to fund habitat protection and restoration projects through the national Coastal Zone Management Program. These funds are part of a transformational moment for the nation's coasts to improve resilience like we have never seen before. "Climate Ready Coasts"—one of the major initiatives under BIL—will invest in natural infrastructure projects that build coastal resilience, create jobs, store carbon and restore habitat.

A competition hosted by OCM in 2023 made available approximately \$50 million to coastal zone management programs such as the Wisconsin Coastal Management Program (WCMP). All coastal programs could propose three projects with their project partner for consideration, with the top projects chosen to submit final applications. WCMP and Bayfield County proposed purchase of the approximately 2,000 acres of land as an acquisition project to supplement funds the County had to buy the property.

The Sand River Headwaters Acquisition Project is highly suitable for this funding competition because of its strong alignment with OCM's priorities: Restoration and Conservation, Climate Resiliency, and Equity and Inclusion. For instance, the ecosystems within this land provide



migratory bird stopover habitat and fish spawning areas for Great Lakes fish. Forest protection and management will provide slow-the-flow and water quality functions to stabilize stream banks, reduce runoff and prevent downstream water quality issues into Lake Superior. Direct habitat and public access connectivity will also increase the interconnected regional network of public and tribal lands that provide travel corridors for species movement and land and water-based recreational opportunities.

Further, protecting this land will enhance climate resiliency through carbon sequestration, habitat connectivity, watershed protection and sustainable forest management. Specifically, improving or enhancing carbon sequestration rates and the carbon storage capacity of a

forested ecosystem is one of the most effective ways to combat climate change. The project area is on the high end of carbon sequestration values, with up to 82 tons of carbon storage per acre in some areas.

Lastly, Red Cliff can exercise their treaty rights on this land and the roughly 1,450 acres of repatriated lands. The repatriated lands transferred to Red Cliff will continue to be protected by their long-term vision and strong land conservation ethics.

The suitability of this acquisition project led to it being one of the twenty projects awarded a Coastal Zone Management Habitat Protection and Restoration Grant in 2023. As a result, Bayfield County received \$1,965,000 in BIL funding to complete the roughly \$2,521,000 land purchase from Trust for Public Land, a nonprofit

organization that has a successful track record with land protection projects, that was holding the properties for the County. Additionally, receiving the BIL funds indirectly contributed to the protection of roughly an additional 1,580 acres of land in the Lake Superior watershed because the County could redirect funds to other acquisition projects, resulting in a combined total of over 3,500 acres of land that will now be managed as part of the Bayfield County Forest..

The investment of funds from the BIL, with additional funds leveraged from IRA, into NOAA's Coastal Zone Management Program helped make this acquisition and many other habitat restoration and protection projects possible. These investments and efforts are building on the important work done by states and territories over the past 50 years under the Coastal Zone Management Act to manage our nation's coastal areas. Fortunately, there are four more years of funding to continue this impactful work that will significantly benefit the resilience of coastal areas now and in perpetuity.

For more information on how WCMP is taking advantage of this opportunity, check out the Coastal Coordination tab at <https://doa.wi.gov/Pages/LocalGovtsGrants/CoastalInitatives.aspx>.

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CALM builds community capacity to address enduring hazards along Wisconsin's Lake Michigan coast.

COLLABORATIVE ACTION FOR LAKE MICHIGAN (CALM)

Lydia Salus

Lake Michigan experienced record low water levels in 2013, followed by record high levels persisting for eight months in 2020. A large coastal storm during this high water period in January of 2020 caused widespread flooding and erosion in Wisconsin's coastal communities. This one event exacerbated erosion and flooding hazards, and pressured infrastructure along Wisconsin's Lake Michigan shoreline resulting in a \$30 million Major Presidential Disaster Declaration for Milwaukee, Racine and Kenosha Counties.

Wisconsin has 70 coastal municipalities stretching across 407 miles of the western coast of Lake Michigan. With memories of record high water levels on Lake Michigan in 2021 still fresh, coastal communities were looking for ways to be more resilient to coastal hazards and future water level fluctuations. Their solution? Collaboration.

To build community capacity to address these enduring coastal hazards, the Wisconsin Coastal Management Program (WCMP), University of Wisconsin Sea Grant Institute (WSGI), Wisconsin State Cartographer's Office (SCO) and Wisconsin Department of Administration (DOA) are collaborating on a project funded by a NOAA Projects of Special Merit grant called the Collaborative Action for Lake Michigan (CALM) Coastal Resilience Project. CALM aims to increase collaboration between communities, support the development of local policies and plans, and coordinate the regional prioritization of coastal hazard needs.

This project formed a network which brings together more than 160 coastal communities, practitioners and decision-makers on Wisconsin's entire Lake Michigan coastline. This network works to reduce confusion, increase collaboration and build capacity at the regional level. CALM expands on the scope of the Southeastern Wisconsin Coastal Resilience Project, a multi-year effort by WCMP, WSGI, University of Wisconsin-Madison Department of Environmental Engineering and the Southeastern Wisconsin Regional Planning Commission to enhance community resiliency to coastal hazards in Ozaukee, Milwaukee, Racine and Kenosha Counties.

Leveraging the momentum generated by other local and regional efforts working towards collaborative, region-wide actions in Lake Michigan's coastal communities is central to this project. CALM has built upon the groundwork laid by the Southeast Wisconsin Coastal Resilience Project by sharing its successes across other regions of the Lake Michigan coastline. Establishing a firm connection between Southeastern and Northeastern Wisconsin is an added benefit that increases sharing between communities and generates the opportunity to standardize policies and processes through collaboration.

Improved geospatial data management and standardization is provided to the CALM network through the Wisconsin Coastal-Management Data Infrastructure (WICDI) project, a partnership between WCMP, DOA and SCO.

This infrastructure allows communities to prioritize and map data to inform decisions such as local planning and permitting, and emergency management in the wake of a hazard event.

Many coastal projects in Wisconsin's Lake Michigan region are tackling hazards and resilience challenges. Having a formal network through which to communicate reduces confusion of the roles of local, regional and state entities in coastal planning and preparedness, and provides a channel to share lessons learned across the region. The network also builds community capacity by sharing decision-making tools, resources, data and case studies to support the development, revision or adoption of local plans and policies that address coastal hazards and support community resilience.

The CALM network meets virtually to explore topics such as climate adaptation, resilience practices and comprehensive and hazard mitigation planning. For each topic, we explore how to connect funding and resources to support on-the-ground actions. We utilize internal presenters and expertise to support peer-to-peer learning.

A newsletter keeps CALM network members apprised of Lake Michigan water level conditions, Great Lakes resilience projects, timely funding announcements and training opportunities. The newsletter also contains a "Member-to-Member" section where members can share their own coastal project updates, requests for expertise and opportunities to collaborate with others in the network.




Field trips engage network members in a first-hand experience of coastal issues and the ways in which communities are tackling them. These field trips help increase members' confidence to implement risk-reduction strategies after exploring model projects implemented by their peers.

The Wisconsin Coastal Resilience website (<https://wicoastalresilience.org>) has resources to help coastal communities, practitioners and decision-makers. CALM received feedback from network members that funding and financing coastal resilience work is a barrier to action. As a result, a key feature of the website is a funding inventory of grants intended to address coastal hazards and build resilience. This easy to use, searchable database aims to keep the network informed of application due dates, project eligibility and funding providers in the region.

The website also features case studies about local initiatives to enhance coastal resilience in Wisconsin and throughout the Great Lakes to help build an internal knowledge base and provide inspiration to other communities. By coordinating stakeholders on the Lake Michigan coastline, we are leading members to frame Wisconsin's coastal needs in a region-wide, long-term context. Through planning and collaboration, communities will be more prepared to leverage available financial resources to enhance hazard plans, policies and coastal resilience projects.

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CHAOS is making
Lake Superior's coasts
more resilient through
coordination and
cooperation.

COASTAL HAZARDS OF SUPERIOR (CHAOS)

Sarah Brown

Due to fluctuating water levels in recent years, a need to increase coastal resilience has been felt by communities around the Great Lakes including Lake Superior. With issues such as flooding, coastal erosion and more frequent extreme weather events on the rise on Lake Superior shorelines, there is an urgent need for available education and resources on these issues within the region.

To support coastal resilience and provide a space for sharing knowledge and resources on coastal resiliency in the Wisconsin and Minnesota shores of western Lake Superior, the Wisconsin Coastal Management Program, University of Wisconsin Sea Grant, Minnesota's Lake Superior Coastal Management Program, Minnesota Sea Grant and the Lake Superior National Estuarine Research Reserve continue to collaborate on the coordination of the Coastal Hazards of Superior (CHAOS) community of practice.

CHAOS focuses on helping the coastal communities of Wisconsin and Minnesota's shores of western Lake Superior learn and prepare for coastal hazards through education, networking and resource sharing. The group works to expand knowledge on issues such as coastal erosion, flooding and extreme weather events, and brings together local officials, scientists, state, federal and tribal government, and others that share a concern about coastal hazards in the region.

The CHAOS project, which formed in 2020 under the coordination of a NOAA Coastal

Management Fellow with Minnesota's Lake Superior Coastal Management Program, has been led by a coordinator along with a steering committee made up of members representing project collaborators. In 2022, the coordination of the community of practice was led by a University of Wisconsin Sea Grant and Wisconsin Coastal Management Program J. Philip Keillor Fellow. As of January 2023, the network is being collectively coordinated by the steering committee.

The CHAOS community of practice steering committee plans and hosts regular in-person and virtual events and distributes a newsletter full of resources on coastal hazards and their impacts to approximately 250 network members. Over the last year, CHAOS hosted several educational opportunities and continued to provide resources relevant to dealing with coastal hazards on the Western shores of Lake Superior.

For example, steering committee members planned and held field trips in the summer of 2022 to give CHAOS members the opportunity to visit a site in-person and hear from speakers about a specific shoreline project or example of a coastal hazard impact. One field trip was held at Brighton Beach in Minnesota where updates to the Brighton Beach Park are planned, including the relocation of a road away from an eroding shoreline. This field trip was attended by eleven CHAOS members and speakers included staff and planners from the City of Duluth.

A second field trip was held at a private property on Lake Superior's south shore with a home that was relocated away from an eroding bluff. This event was also attended by eleven CHAOS members and speakers included a land records professional and a geologist. The visit provided a first-hand experience to better understand the practical impacts of erosion and steps taken to proactively protect an at-risk structure on a bluff.

Efforts have also been made to better understand how CHAOS can help fulfill the educational needs of members. In the summer of 2022, qualitative semi-structured interviews were conducted with CHAOS members to collect and understand their

opinions, critiques and suggestions regarding the community of practice. Additionally, the interviews hoped to gain feedback on specific topics that may be covered at future CHAOS events. The information collected from these interviews was used to inform and guide the steering committee in planning future CHAOS events. The interview results also helped to prepare for the general sustainability of CHAOS.

In January 2023, the CHAOS coordinator along with the CHAOS steering committee hosted two in-person game plays of The Watershed Game Coast Model with CHAOS members and local leaders in the Ashland and Superior areas. These


events introduced the updated version of The Watershed Game to coastal professionals in the region and gave attendees the opportunity to familiarize themselves with the tool and inquire about using it in their own communities. This event also provided an in-person networking opportunity for CHAOS members.

As the water levels within Lake Superior continue to fluctuate, coastal communities will be forced to adapt. The CHAOS community of practice provides a valuable space for information sharing and learning about how to reinforce the resiliency of coastal communities. In 2023, the CHAOS project, under the shared coordination of the steering committee, continues to reinforce the partnerships between Wisconsin Coastal Management Program, Wisconsin Sea Grant, Minnesota's Lake Superior Coastal Management Program, and the Lake Superior National Estuarine Research Reserve and provides information and networking opportunities related to coastal hazards and their impacts to members of the network and beyond.

Lake Superior's rugged coasts are vulnerable to threats from changing water levels and weather impacts. CHAOS is making our shores more resilient through coordination and cooperation along the world's greatest lake.

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The Wisconsin Clean Marina Program assists marinas in preventing pollution and improving water quality.

WISCONSIN CLEAN MARINA PROGRAM

Theresa Qualls and Todd Breiby

Wisconsin has over 160 marinas, yacht clubs and boatyards constituting an important sector of the state's recreation, marine and tourism economies. Marinas and boatyards contribute hundreds of millions of dollars annually to communities across Wisconsin and provide recreational opportunities for residents and tourists. More than 1 in 10 state residents own a registered boat and 61% of state residents boated at least once in 2019.

Since marinas are located directly on the water, they act as a final defense before pollution enters the waterways and are in a unique position to make a positive impact on water quality through the implementation of best management practices (BMPs). This is where the Wisconsin Clean Marina Program (CMP) comes into play. Developed in 2009, the CMP is a voluntary certification program that assists marinas in implementing BMPs to prevent pollution and improve water quality. In addition, the program provides guidance, training and technical assistance to Wisconsin marina and boatyard operators.

A Wisconsin Clean Marina is a marina or boatyard that has voluntarily adopted sufficient measures to reduce water pollution, protect public health, and improve fish and wildlife habitat. To become a certified Clean Marina, facilities must pass an onsite inspection by the CMP coordinator and technical team, which verifies the adoption of required BMPs. Examples of best management practices include preventing and cleaning up fuel spills, reducing hazardous waste generation,

proper storage and disposal of hazardous waste, recycling waste, managing storm water, treating boat pressure wash wastewater, preventing the spread of aquatic invasive species, and enhancing fish and wildlife habitat. Marinas also must educate their boaters on clean boating practices.

For the past five years, the Fund for Lake Michigan has provided two grants to support the CMP. The program is administered by the University of Wisconsin Sea Grant College Program in partnership with the Wisconsin Marine Association, the Wisconsin Coastal Management Program, and the Wisconsin Department of Natural Resources. Through the grant, the program was able to grow and increase the number of participating marinas. Currently, there are 21 certified Clean Marinas and 24 pledged marinas throughout the state, and through certification, over 1,600 BMPs have been implemented.

The program provides training for marina managers and staff annually through workshops and one-on-one technical assistance and over 50 marina managers and staff are trained each year. As a voluntary, nonregulatory program, the CMP provides technical assistance to marinas on regulations and permit requirements.

Recently, the program was able to update the program website and provide valuable information to marinas including videos and a brochure, boater education materials, the Wisconsin Clean Marina Program Guidebook, and other resources. In fall 2022, version 3 of the "Wisconsin Clean



Marina Best Management Practice Guidebook' was developed along with an updated checklist. This guidebook is a reference document for marina managers and operators and outlines practices required by law as well as practices required and recommended for certification. All Clean Marina materials, including the guidebook, are available on the program's website at <https://wisconsincleanmarina.org>.

In addition to certification, the CMP addresses other industry needs such as boater education, marine debris collection and shrink wrap recycling. The program provides marinas with boater education materials, such as clean boater rack cards and signage indicating BMPs for boaters to follow. During winters in Wisconsin, it is typical for boats to be wrapped in plastic when stored outside and then in the spring, the plastic boat wrap is removed and needs disposal. The CMP assists marinas in recycling plastic boat wrap to keep it out of landfills. Marine debris, in particular plastics, can accumulate in marina basins and the CMP helps marinas collect this plastic waste. From installing trash collecting technology to fishing line recycling receptacles, marinas can help collect and reduce plastic pollution in the waterways.

The CMP continues to work cooperatively with the Great Lakes and National Clean Marina Networks to share ideas and identify opportunities for project collaborations. Identifying and developing new partnerships to further the goals and impact of



the CMP continues to be a priority. This includes finding new ways to both provide technical assistance and implement projects at marinas.

Several local projects were recently completed including construction of a stormwater treatment wetland at Barker's Island Marina in Superior, development of a Wisconsin Great Lakes Marina Resilience Assessment to help marinas be prepared for coastal storms, flooding and fluctuating water levels, and development of conceptual designs and engineering plans for a boat wash station and stormwater improvements at Kewaunee Marina and boat launch. These projects are examples of what can be accomplished through partnerships with the CMP.

Clean Marinas keep oil, fuel, paints, cleaning products, plastics and nutrients out of the water, and create a safer and healthier place to work and recreate. Clean Marinas contribute to the local and state economies and enhance the positive image of the community. Boaters truly care about clean waterways and want to patronize Clean Marinas. As the CMP continues to expand and grow, it will play a vital role in improving water quality for the boating community and marine industry.

Theresa Qualls is a Wisconsin Clean Marina Program Coordinator with Wisconsin Sea Grant. She may be reached at quallst@uwgb.edu. Todd Breiby is a Program Coordinator with the Wisconsin Coastal Management Program. He may be reached at todd.breiby@wisconsin.gov.

Shipwreck preservation groups enrich our understanding of historical resources deep in Wisconsin's Great Lakes.

WISCONSIN HISTORICAL SOCIETY FIELD SCHOOL

Tamara Thomsen

A cornerstone of the Wisconsin Historical Society's Maritime Preservation & Archaeology Program is education and training in the form of archaeological field schools. Although field school opportunities are often thought as something exclusively for graduate students, basic and advanced field training opportunities have provided continuing education experiences for local avocational archaeologists and volunteer divers. Over the past 35 years of the program, Wisconsin Historical Society has offered more than twenty field schools reaching five to fifteen divers over each week-long session through funding support from the Wisconsin Coastal Management Program and University of Wisconsin Sea Grant Institute.

Ideal shipwreck sites for field training are typically in shallow water with easy access, on a lake bottom of sandy substrate, and in a protected location. During the training, avocational archaeologists learn techniques for documenting submerged cultural sites. These techniques include the basics of underwater survey and mapping to scale, taking measurements, ship anatomy, photography and videography. Recently, photogrammetry (3D modelling) has been introduced into the training.

Field school projects generate documentation and imagery for presentations, social and web media, educational materials, and resource management. Through the documentation of shipwreck sites, divers hone their skills in scaled drawing, complete a full archaeological site plan and

begin data analysis by evaluating a site according to National Register of Historic Places criteria established by the National Park Service.

Lack of public understanding, appreciation or support inevitably leads to inadequate preservation and decreased visitation of Wisconsin's submerged cultural resources. Fortunately, the best resources for exciting and informing the public lay in our over 780 shipwreck sites well-preserved beneath Wisconsin's cold Great Lakes waters. With hundreds of shipwrecks identified on state bottomlands, one important key to sparking public interest lies in the ability to bring glimpses of these unique resources to the public's attention.

The results of underwater archaeological investigations and historic research, coupled with underwater images and video, are powerful tools that can be used for public outreach. Shipwreck stewardship and preservation is not solely the diver's domain. Title to Wisconsin's historic shipwrecks is held in public trust by the State of Wisconsin for the benefit of all. Avocational archaeologists trained through field schools multiply the effectiveness of Wisconsin Historical Society's initiative to provide accessibility to these resources.

Training members of shipwreck preservation groups in Wisconsin allows the preservation ethic and educational initiatives of the Wisconsin Historical Society to permeate beyond the organization itself and reach diverse communities throughout the state and region. Preservation organizations such as the Wisconsin Underwater



Archaeological Association (WUAA), Great Lakes Shipwreck Preservation Society (GLSPS), Great Lakes Shipwreck Archaeology (GLSA) and the Underwater Archaeological Society of Chicago (UASC) are supported by an active and enthusiastic membership; however, that membership is often changing and requires retraining and updating of skills.

Wisconsin Historical Society-led field schools have proven to be one of the most effective methods in fostering a preservation ethic and personal involvement in the protection and promotion of historic shipwreck resources. Field schools leverage a grassroots preservation effort that comes from within the local recreational diver community and encourages preservation and sustainable use of these nonrenewable historical sites.

These groups conduct their own historical and archaeological surveys of Wisconsin shipwrecks and help the Wisconsin Historical Society in its effort to locate, document and preserve all of Wisconsin's submerged cultural heritage. Significantly, training divers in underwater survey methods has inspired local avocational organizations to implement their own archaeological survey projects. Their results are impressive and enrich our understanding of historical resources deep in the Great Lakes.

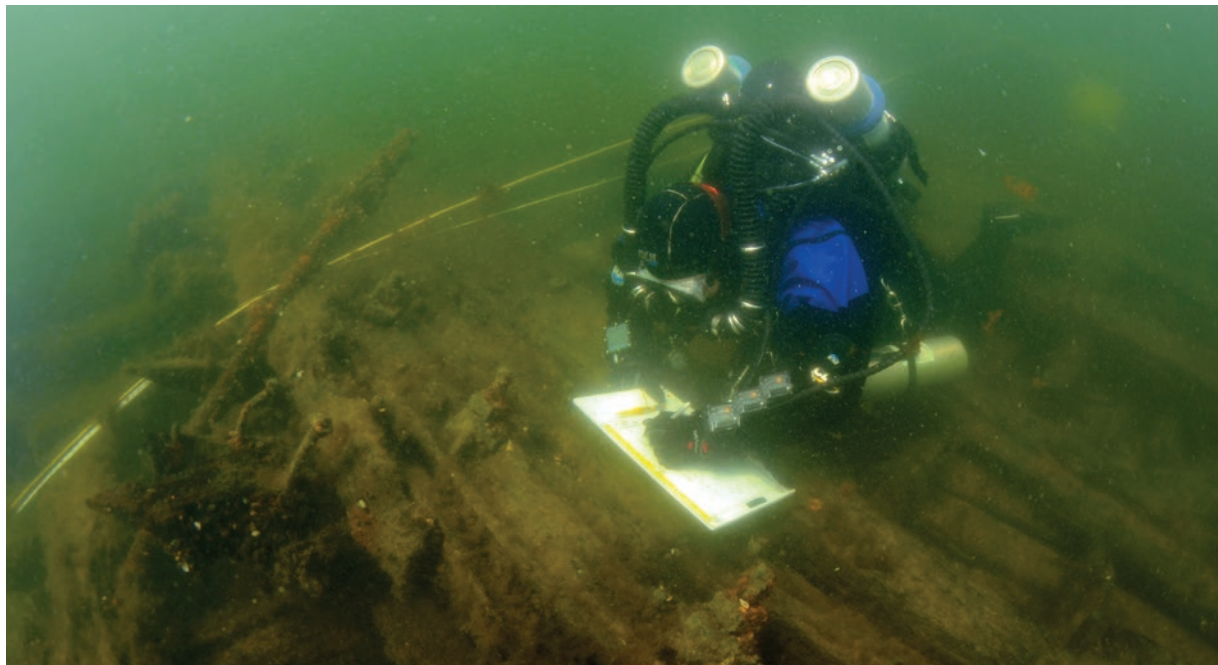
Currently, the Wisconsin Underwater Archaeological Association is writing a summary of its multiple years of underwater survey work on more than twelve shipwrecks and historic dock ruins in Baileys Harbor. Additionally, it has published an archaeological and historical survey

of Clay Banks, Door County, and conducted remote sensing surveys within the Fox River and in the Milwaukee River basin. The Great Lakes Shipwreck Preservation Society has completed archaeological surveys of the steamer *Harriet B.* and the scow *May Flower* shipwrecks in Minnesota. Both projects resulted in listing the sites on the National Register of Historic Places.

Great Lakes Shipwreck Archaeology (formerly Great Lakes Shipwreck Research Foundation, Inc.) completed and published archaeological surveys of the Milwaukee Fireboat #23 and the steamer Norland wreck sites and have conducted archaeological surveys of Milwaukee-area shipwrecks *Reliable*, *Hiram R. Bond* and *Ashtabula*. The Underwater Archaeological Society of Chicago is currently partnering with the Illinois State Historic Preservation Office to catalogue historic vessel losses in Illinois waters of the Great Lakes through a National Maritime Heritage Grant.

These spinoff projects are the direct result of volunteer diver involvement in Wisconsin Historical Society-led field schools. Support for field school opportunities has multiplied the effectiveness of shipwreck preservation efforts throughout the region. Avocational archaeologists and divers are important to creating a bright future for interpreting and protecting Wisconsin's historical maritime resources.

Tamara Thomsen is a Maritime Archaeologist with the Wisconsin Historical Society. She may be reached at tamara.thomsen@wisconsinhistory.org.



Tony Earl left a legacy of environmental and social justice accomplishments that continues to enrich the lives of citizens in Wisconsin, throughout the Great Lakes and beyond.



TONY EARL

Julia Earl

Tony Earl was well-known and respected for many things, and perhaps the greatest was an abiding love of the environment and especially the Great Lakes. I know based on first-hand experience as one of his four daughters. For as long as I can remember, we were loaded up in the family station wagon for annual trips through Wisconsin's farm fields to Lake Michigan's western shores and beyond to the eastern end of Michigan's Upper Peninsula. Once we spotted the Lake, our trips changed from hot and dreary to beautiful and anticipatory. As a great lover of history, our Dad chronicled our trip with factoids about lakeshore towns, islands where he camped as a Boy Scout and the immense power of the last ice age that carved out the Great Lakes.

Dad grew up in St. Ignace, Michigan, a small town on the Straits of Mackinac at the confluence of Lakes Huron and Michigan. Throughout the decades he shared his profound appreciation of the natural beauty of the area and the largely unpolluted Straits as evidenced by the Mackinac Bridge's tall white towers which Dad observed remain white year after year due to the area's clean air.

Our Dad carried that appreciation with him to the Wisconsin Legislature in 1969 where he worked with Gaylord Nelson to embrace state policies reflecting Earth Day, the Clean Air Act and Clean Water Act. He made further headway as Secretary of the Department of Natural Resources and as Governor from 1983-1987. Although his role as an elected official came to an end, he continued

working tirelessly for environmental protection through national and international organizations.

Dad understood regional cooperation was necessary to achieve a meaningful and lasting impact on the Great Lakes ecosystem. Within his first week as Governor, he began work with other Great Lakes leaders to establish an organization dedicated to meeting environmental and economic challenges through a coordinated, bipartisan approach. He facilitated the formation of the Conference of Great Lakes and St. Lawrence Governors and Premiers (now the Council of Great Lakes Governors) by the end of 1983.

As Chair from 1983-1985, he and his counterparts worked to coordinate regional water management policy throughout the basin. In 1985, they signed the Great Lakes Charter, an agreement that continues to guide state and provincial policies, cooperation and information-sharing. Among many things, the Charter led to the landmark Great Lakes Compact which continues to set strict standards for water diversions outside of the basin.

The Council also tackled water *quality* under his chairmanship. Great Lakes waters were heavily degraded due to industrialization, agriculture and urbanization and the Council took a major step toward improving water quality by signing the Toxic Substances Control Agreement (TSCA) in 1986. The TSCA set the stage for the U.S. Environmental Protection Agency's (EPA) Great



Lakes Water Quality Initiative providing better water policy coordination between federal and state governments.

Prior to leaving office in 1987, Dad called for funding to support projects that would restore and protect the Great Lakes and the seven basin states acted on his recommendation. In 1989, they endowed the Great Lakes Protection Fund with \$81 million that has since supported dozens of initiatives improving basin water quality including better ballast systems on ships to control invasive species and supporting best farming practices to prevent phosphorus from entering the lakes.

Our Dad's expertise in and dedication to the Great Lakes were well known to his successors. Despite their political differences, Tommy Thompson respected Dad's leadership on Great Lakes issues and appointed him as Wisconsin's representative on the Great Lakes Protection Fund when it launched in 1989. Dad chaired the Protection Fund's Board, served as Director for fourteen years and kept it focused on protecting and restoring the ecosystem through investments in legal, technical and policy frameworks.

His concern for Great Lakes communities also included social justice. Dad was a longtime board member of the Joyce Foundation, a Chicago-based nonprofit that advances racial equity and economic mobility policies in the Great Lakes region. The Foundation remembered Dad for his strong



commitment to the environment and democracy during his service on the Board dating back to 1997.

Additionally, he played an integral role in creating and chairing the Center for Clean Air Policy, a Washington, D.C. organization focused on climate change and air quality policy in the United States and internationally. He also co-chaired the EPA's Clean Air Act Advisory Subcommittee on Energy, Clean Air and Climate Change to advance best practices that reduce greenhouse gas emissions.

Our Dad passed away in February 2023 leaving a lifetime legacy of environmental and social justice accomplishments that continue to enrich the lives of citizens in Wisconsin, throughout the Great

Lakes and beyond. One of his favorite quotes from Aldo Leopold's "Land Ethic" states, "All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals..." Dad leaves all of us with a challenge to be passionate about and care for our communities and the environment.

Whenever I am on the shores of one of the Great Lakes, I bear witness to his legacy and feel his presence.

Julia Earl is the eldest daughter of Tony Earl, Wisconsin Governor from 1983-1987 and lifetime champion of the Great Lakes.



2023 WISCONSIN COASTAL MANAGEMENT PROGRAM GRANTS

Project Name
Grantee
WCMP Award
Project Description
Contact

Coastwide

Coastal Hazards Fellowship

University of Wisconsin Sea Grant Institute
\$56,456

Sponsor a one-year fellowship focused on tackling science and policy challenges related to increasing coastal community resilience across the Great Lakes region.

Dr. Jennifer Hauxwell, jennifer.hauxwell@aqu.wisc.edu

Bay of Green Bay National Estuarine Research Reserve

University of Wisconsin-Green Bay
\$49,866

Complete the third phase of the NERR designation process including the creation of the Draft Management Plan to guide the NERR's first five years of operation.

Ms. Emily Tyner, tyner@uwgb.edu

Regional Natural Areas and Critical Species Habitat Plan Update

Southeastern Wisconsin Regional Planning Commission
\$40,000

Update the Southeastern Wisconsin Plan with recent changes to the regional natural areas inventory and communicate to municipalities, government agencies and conservation organizations.

Dr. Thomas Slawski, tslawski@sewrpc.org

Technical Assistance

Bay-Lake Regional Planning Commission
\$30,000

Provide public information and outreach on issues affecting coastal resources through presentations, support, newsletter articles, social media posts and technical assistance.

Mr. Brandon Robinson, brobinson@baylakerpc.org

Technical Assistance

Northwest Regional Planning Commission
\$30,000

Provide technical assistance to the Wisconsin Department of Administration in the implementation of the Wisconsin Coastal Management Program.

Mr. Jason Laumann, jlaumann@nwrpc.com

Technical Assistance

Southeastern Wisconsin Regional Planning Commission
\$30,000

Provide technical assistance to the Wisconsin Department of Administration in the implementation of the Wisconsin Coastal Management Program.

Dr. Thomas Slawski, tslawski@sewrpc.org

Small Business Engagement

Southeastern Wisconsin Watersheds Trust, Inc
\$27,500

Develop an outreach program including best management practices for small business stormwater pollution prevention.

Mr. Jacob Fincher, fincher@swwtwater.org

Refining Bryophyte Community Assessment Protocols

University of Wisconsin-Green Bay
\$25,318

Field-test a bryophyte (moss, liverwort and hornwort) floristic quality assessment protocol for Wisconsin minerotrophic peatlands in northeastern Wisconsin.

Dr. Keir Wefferling, wefferlk@uwgb.edu

Updating Coastal Hydrography Data

Wisconsin Department of Natural Resources
\$19,000

Develop updated rivers, lakes and streams hydrography geospatial data for Oconto and Marinette Counties to support nonpoint pollution planning.

Ms. Ruth Person, ruth.person@wisconsin.gov

Ashland County

Wastewater Treatment Plant Facility Plan

Madeline Sanitary District
\$36,000

Review the District's wastewater system and prepare a Wastewater Treatment Plant Facility Plan.

Mr. Zach Montagne, zachmontagne@yahoo.com

Parks Master Plan

City of Ashland
\$29,500

Develop a Parks Master Plan with a framework for improving parks and recreational facilities, strategic plan and budget.

Ms. Sara Hudson, shudson@coawi.org

Bayfield County

Brownstone Trail Restoration Design

Landmark Conservancy
\$48,000

Create a final restoration design plan including construction documents, budget, materials, contractors and a list of potential funding sources.

Ms. Erika Lang, erika@landmarkwi.org

Brown County

East River Flood Mitigation Planning Project

City of Green Bay
\$39,000

Engage in a planning process to develop feasible flood mitigation strategies at City-owned and managed properties on the East River.

Ms. Melissa Schmitz, melissa.schmitz@greenbaywi.gov

East River Recreational Trail Community-Driven Planning

Village of Allouez
\$30,000

Develop a master plan for the East River Recreational Trail including designs to address flood mitigation, water quality and habitat along the eight miles of trail.

Mr. Chris Clark, chris.clark@villageofallouezwi.gov

Door County

A Short Survey off of Long Piers: Settlement-Era Piers of Door County

Wisconsin Historical Society
\$29,434

Locate, investigate, map and evaluate submerged and associated shoreline cultural resources associated with historic lumber and quarry piers.

Ms. Amy Rosebrough,

amy.rosebrough@wisconsinhistory.org

Village of Sister Bay: Vision 2044

Village of Sister Bay
\$14,700

Update four elements of the comprehensive plan: Natural, Agricultural, and Cultural Resources; Housing and Economic Development; Land Use/Future Land Use; and Implementation.

Ms. Julie Schmelzer, julie.schmelzer@sisterbaywi.gov

Town of Washington: Planning for the Island Community

Town of Washington
\$9,500

Prepare four elements of a comprehensive plan: natural, agricultural and cultural resources, housing and economic development, land use/future land use, and implementation.

Mr. Hans Lux, chairman@washingtonisland-wi.gov

Town of Egg Harbor Long-Range Planning

Town of Egg Harbor

\$9,000

Update four elements of the Town's plan including fluctuating water level impacts, coastal area development, invasive species control and economic impacts of tourism.

Mr. Paul Peterson,

townchairman@townofegg harbor.org

Manitowoc County

Education and Access for People of All Abilities

City of Two Rivers

\$25,408

Provide Great Lakes education programs with training, an adaptive kayak launch, a fleet of fourteen recreational kayaks and the addition of "mobi-mats" for the city beach.

Mr. Mike Mathis, mikmat@two-rivers.org

Marinette County

Peshtigo River Boat Launch Improvements

City of Peshtigo

\$92,000

Upgrade the existing boat landing to accommodate larger boats and relieve congestion during the busy spring walleye run.

Ms. Lori Tonn, lorit@cityofpeshtigo.us

Milwaukee County

Greenseams Acquisition

Milwaukee Metropolitan Sewerage District

\$140,000

Acquire the 40-acre Ulma property as an addition to an existing preserved corridor under development pressure.

Ms. Kristin Schultheis, kschultheis@mmsd.com

Milwaukee Kinnickinnic Riverwalk

Milwaukee Metropolitan Sewerage District

\$88,000

With Harbor District, Inc., construct a public access pathway along the Kinnickinnic River including 330 linear feet of access in an area that is not currently accessible.

Mr. Kevin Shafer, kshafer@mmsd.com

Youth & Community Watershed Education

Riveredge Nature Center, Inc

\$49,600

Engage students and community members across the Greater Milwaukee Area in their local watersheds with River Connections, Testing the Waters, and Community Rivers programs.

Ms. Anna Jean Hallmann, ajhallmann@riveredge.us

Klode Park Ecological Design for Upslope

Runoff Management

Village of Whitefish Bay

\$45,000

Complete a multi-phase initiative to improve ecological, educational and recreational opportunities and enhance resiliency at Klode Park.

Mr. John Edlebeck, j.edlebeck@wfbvillage.gov

Water-Based Experiential Learning

Urban Ecology Center

\$45,000

Engage Milwaukee area youth in educational water-based learning through the Preschool Environmental Education Project (PEEP) and Neighborhood Environmental Education Project (NEEP).

Ms. Gillian Spence, gspence@urbanecologycenter.org

30th Street Industrial Corridor Green

Infrastructure

Clean Wisconsin

\$43,323

Work with Milwaukee's Roosevelt Grove and Lincoln Creek neighborhood residents on opportunities for green infrastructure installations through education, outreach and modeling.

Mr. David Tipson, dtipson@cleanwisconsin.org

Water Stories Series Illuminating

Milwaukee Estuary

Reflo

\$30,000

Develop videos, maps and feature-length articles for the online publication *Urban Milwaukee* to illuminate environmental topics of public interest in and around the Milwaukee Estuary Area of Concern.

Mr. Michael Timm, mtimm@refloh2o.com

Ozaukee County

Clay Bluffs Cedar Gorge Nature Preserve Restoration

Ozaukee County Planning and Parks Department
\$166,700

Conduct coastal wetland and prairie habitat restoration activities and make public access improvements at Clay Bluffs Cedar Gorge Nature Preserve County Park.

Mr. Andrew Struck, astruck@co.ozaukee.wi.us

Upper Lake Park and North Beach Access Improvements

City of Port Washington
\$40,000

Complete pedestrian pathways engineering, grade and re-vegetate the unstable bluff face, install a paved pedestrian pathway and buried revetment, and support beach nourishment.

Mr. Robert Vanden Noven,
rvandenoven@portwashingtonwi.gov

Vegetation Effects on Bluff Stability in Ozaukee County

University of Wisconsin-Madison Geography Department

\$30,000

Assess bluff destabilization rates and the structural properties of bluff vegetation and their effects on erosion rates in Ozaukee County.

Dr. Christian Gerardo Andresen, candresen@wisc.edu

Racine County

Meachem Stormwater Pond Constructed Wetland Conversion

Root-Pike Watershed Initiative Network (Root-Pike WIN)

\$28,127

Develop and complete engineering and design plans to transform the Meachem Stormwater Pond in Racine County into a constructed wetland.

Mr. Dave Giordano, dave@rootpikewin.org

Samuel Myer Park Scenic Platform

City of Racine

\$26,400

Install a public viewing platform at Samuel Myers Park allowing the public to view wetland plants and animals at the recently restored site.

Mr. Adrian Koski, adrian.koski@cityofracine.org

Sheboygan County

Bookworm Gardens Green Infrastructure and Master Plan

Bookworm Gardens

\$36,900

Develop a master plan implementing green infrastructure to address stormwater runoff concerns from the site to the Sheboygan River to improve water quality and habitat.

Ms. Elizabeth Wieland, elizabeth@bookwormgardens.org

Willow Creek Preserve Regenerative Stormwater Conveyance

Glacial Lakes Conservancy Inc.

\$10,063

Develop engineering and design plans for a regenerative stormwater conveyance system on Willow Creek Preserve's southernmost outfall.

Ms. Isabel Mueller, isabel@glaciallakes.org

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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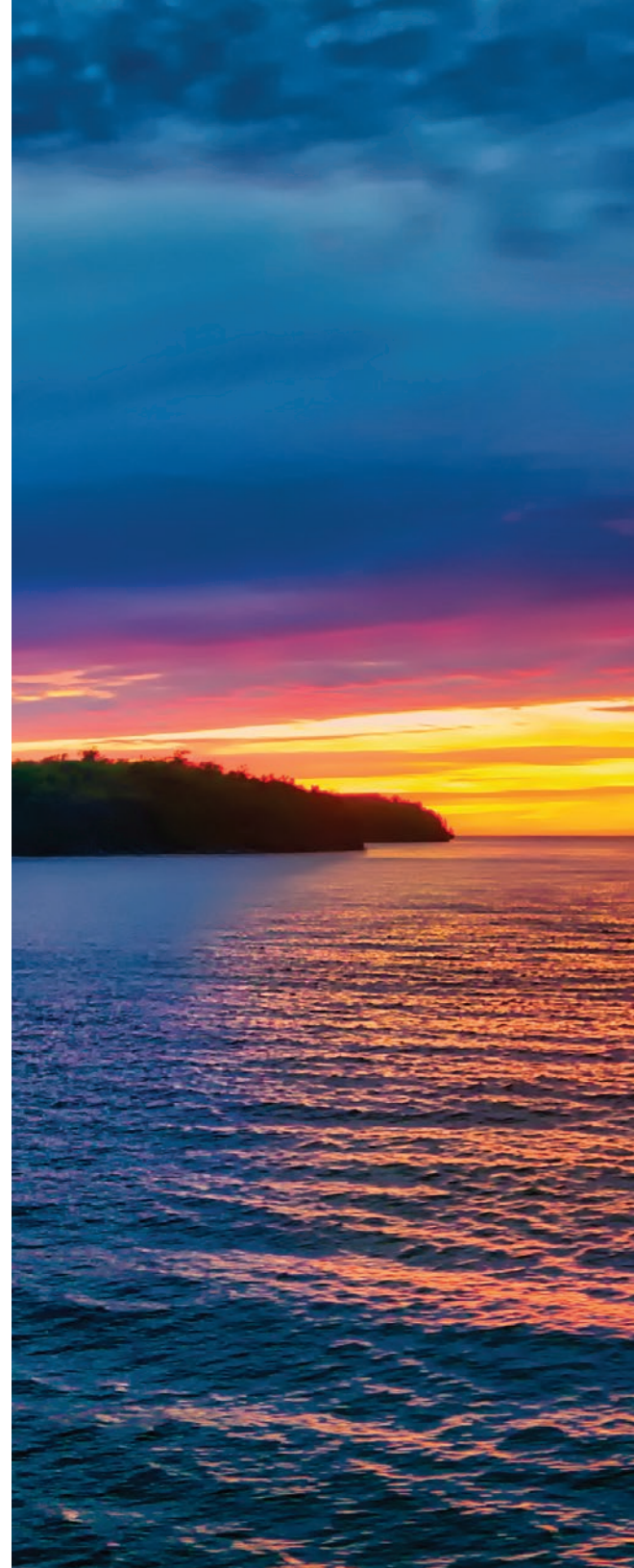
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Wisconsin Great Lakes Chronicle 2023 is dedicated to Governor Tony Earl.
Governor Earl's leadership on Great Lakes, environmental
and social justice issues continue to enrich Wisconsin and the nation.

 WISCONSIN COASTAL
MANAGEMENT PROGRAM