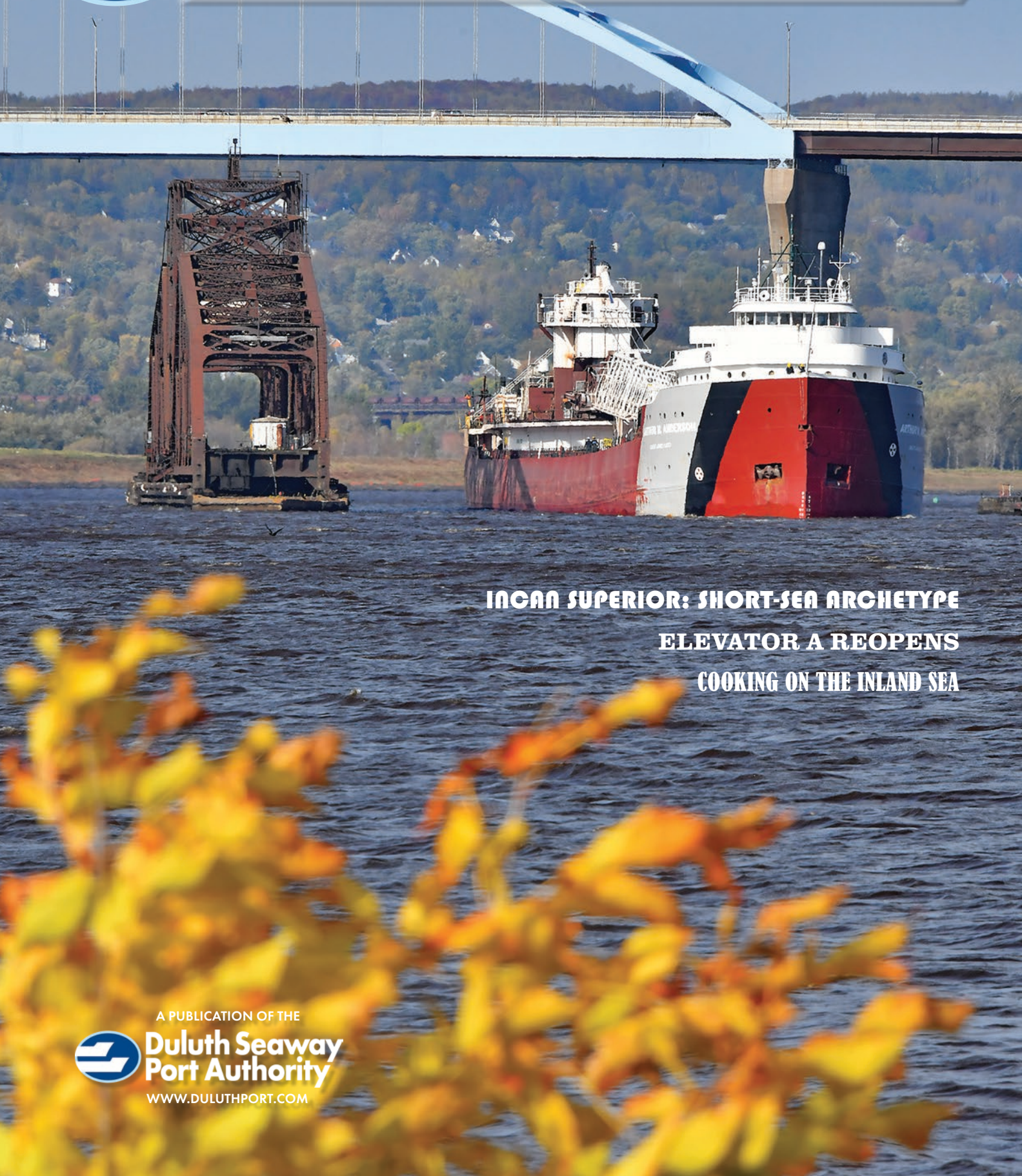




NORTH STAR PORT

FALL 2022



**INCAN SUPERIOR: SHORT-SEA ARCHETYPE
ELEVATOR A REOPENS
COOKING ON THE INLAND SEA**

A PUBLICATION OF THE



**Duluth Seaway
Port Authority**

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THE HARBOR LINE

Energy transition is gaining momentum. This is true across industries and around the world. Around corporate boardroom tables, in shareholder meetings, in procurement and acquisition departments, and at trade conferences, the “greening” of supply chains, manufacturing processes, and materials production dominates discussions. This is true for the maritime sector as well, where some progress has already occurred, but much work remains.

There are a few concepts to keep in mind. First, the key word is “transition,” as in, it’s a process and it won’t happen with a flip of the switch. There will be multiple steps, and winning and losing technologies. There will be vanguard trade lanes or “corridors” that establish the necessary infrastructure early, and those that trail. Secondly, we need to acknowledge that maritime shipping is already the most energy efficient way to move goods long distances: a thousand-foot Great Lakes vessel can move a ton of cargo over 600 miles on a single gallon of diesel fuel. That same gallon of fuel will move a ton of cargo only about 60 miles via truck, or 200 miles via rail. From a nationwide carbon footprint basis, we should be seeking to maximize the use of our inland waterways, our “marine highways,” to the fullest extent possible.

For maritime shipping, the first step has been seeking mechanical and operational efficiencies to reduce the amount of energy used to move a given amount of freight

over a given distance. The next step is more challenging. While cars can switch to electrification, battery technology is not currently capable of powering large ships long distances, although it may be promising for short voyage, closed-loop routes.

For the most part, the next step for maritime will involve progressively replacing fossil fuels with alternative, carbon-neutral or renewable fuels. While there are multiple possibilities, each alternative fuel displays benefits and drawbacks in the areas of engine technology, supply chain, infrastructure, and production costs. Possibilities include liquified natural gas (LNG), hydrogen, ammonia, methanol, and biofuels. Most of these contenders will require vessel repowering or new builds. Some of these, such as LNG and biofuels, may serve as “bridge fuels” on the way to zero-emission fuels of the future. Biofuels may also be “drop-in fuels,” capable of being used in existing vessels without retrofitting. While some large international fleets and terminals are committing to specific long-term solutions now, most shipping stakeholders are assessing risks and deciding how to invest and position for the future.

Great Lakes shipping stakeholders are stepping up to identify a system-specific solution. The short and mid-term solution for the Great Lakes will likely be some form of drop-in biofuel that doesn’t require repowering and that will work for fresh- and saltwater fleets. To their immense credit, Canada Steamship Lines recently completed a six-month test of a specific biodiesel product made from agricultural waste products on a fleet of eight vessels. The results were very promising, demonstrating significant (over 80 percent) reduction of carbon emissions. Further



Deb DeLuca, Port Director

DeLUCA continued on Page 11



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About North Star Port

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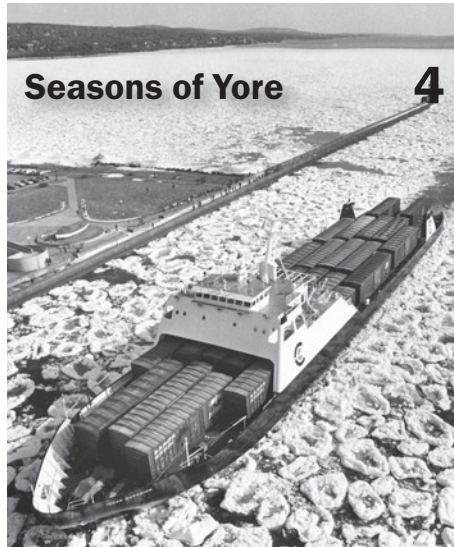
Jayson Hron



The *Mark W. Barker* enters the Duluth-Superior harbor Sept. 6, 2022, on its maiden voyage to the Twin Ports. The new laker from Interlake Steamship Company delivered salt to Envirotech Hallett Dock 8 in Superior, Wis.

Inside your
NORTH STAR PORT

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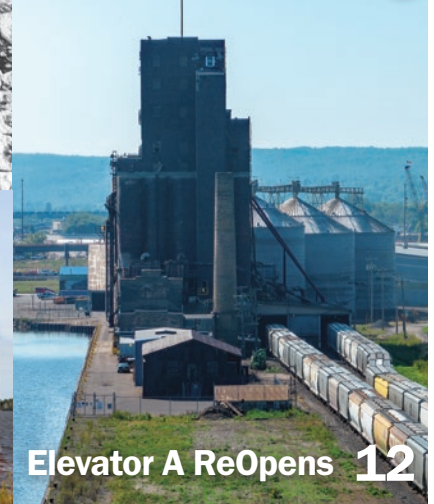
Seasons of Yore 4



Tools of the Trade 6



Season Update 10



Elevator A ReOpens 12



Around the Port 15



In Focus: Stephanie Judd Irwin 19

On the covers



David Schauer

On the front:

The *Arthur M. Anderson* sails past the Grassy Point Bridge with a load of limestone for C. Reiss in West Duluth on Oct. 11, 2022.

On the back:

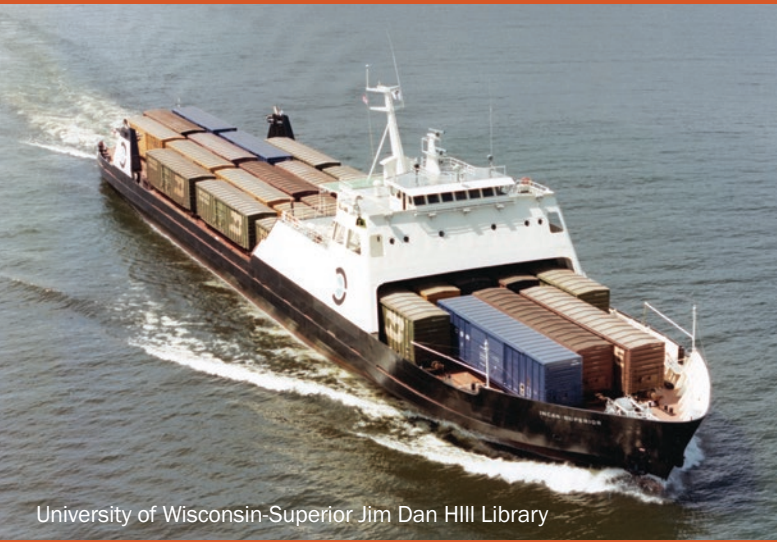
Interlake Steamship Company's *Mark W. Barker* sails through the port. Launched earlier this year, the vessel is the first U.S.-flagged laker built on the lakes since the early 1980s.



David Schauer

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University of Wisconsin-Superior Jim Dan Hill Library

Last call for the *Incan Superior* Short-sea shipping set for a comeback?

BY JAYSON HRON

This month marks the 30th anniversary of a gloomy farewell in the Port of Duluth-Superior, as the M/V *Incan Superior* departed Nov. 19, 1992, on the last of its 2,386 sailings between the Twin Ports and Thunder Bay, Ontario.

Sail off into the sunset she did not. Rather, the *Incan Superior* shrank slowly into a cold, grey sky, garnished with lake breezes that carried her final salute far up the leafless Duluth hillside. The colorful splendor of autumn was gone too soon, and Lake Superior's profitable paradigm of short-sea cargo transport followed it into a long, dark hibernation.

Pacific Import

Built at a cost of \$5.2 million and launched from British Columbia in 1974, the 385-foot ro-ro ferry arrived in the Great Lakes after circumnavigating the United States with a trip through the Panama Canal. Her twin 12-cylinder diesel engines made *Incan Superior* one of the fastest freight-carrying vessels on the Great Lakes, but her look was even more distinctive than her speed. Rakish and flat-decked, with an angular pilothouse amidships, she was built to carry rail cars for the Canadian Pacific Railway between Duluth-Superior and Thunder Bay. The *Incan Superior* featured five rail tracks on her deck, which could accommodate up to 32 40-foot railcars or 26 50-footers. During her heyday, most of those railcars were filled with newsprint, lumber and wood pulp, primarily from Thunder Bay's Great Lakes Paper Company. That payload would make the 200-mile journey across western Lake Superior in slightly less than 13 hours.

According to Zenith City Online, "CP had no direct rail route into Duluth or Superior to ship those products to the U.S., so instead of building a new railroad line, CP created a direct rail-water link using a car ferry system between Thunder Bay and Superior." CP Rail served the vessel in Thunder Bay; Burlington Northern held the

honors in Superior.

In later years, the *Incan Superior* added tanker cars, specialty grain cars and fertilizer cars to its manifest, typically leaving Thunder Bay at 8 p.m. and arriving in Duluth-Superior by noon the next day. Between 1974 and 1992, the vessel repeated this journey more than 100 times annually, often becoming the Twin Ports' first arrival and last departure of the season. During her 19-year run, *Incan Superior* made more calls to Duluth-Superior than any other commercial vessel. She typically docked in Superior at what is known today as Envirotech Hallett Dock 8.

Changing economic conditions ended the *Incan Superior* era with a vicious one-two punch. The first blow came in 1991 with a tripling of the U.S. Harbor Maintenance Tax on cargo value. This bulged the *Incan Superior* Limited share from approximately \$68,000 to \$220,000. Then, in 1992, the Canadian National Railway, a competitor to the CP, reduced rail rates between Thunder Bay and the Twin Ports. This led to a 45 percent year-over-year plunge in newsprint and wood pulp for the *Incan Superior*, which drove the vessel's owners to withdraw her from the route.

"Every effort has been taken to reduce terminal and operating costs, including voluntary actions by the employees, (but) there is no prospect of the kind of turnaround we need to ensure the future viability of the operation," said Bill Scott, then-general manager of *Incan Superior* Limited, in a news release dated Nov. 9, 1992.

New Beginnings

Relieved of her Lake Superior duties, the *Incan Superior* retraced her route back to the Pacific Northwest during Thanksgiving week in 1992, arriving at a shipyard on Vancouver Island where she was renovated for \$1 million to carry semi-trailer trucks and railcars. Renamed the *Princess Superior*, the vessel serves yet today as a truck-and-rail ferry between mainland Vancouver and Vancouver Island.

Meanwhile, demand is rising anew on the Great Lakes and beyond for short-sea shipping activity like that performed by the former *Incan Superior*. Catalysts for this rise include a desire for greater and greener cargo transport efficiency.

“Short-sea shipping on the Great Lakes is one of those ideas that’s been simmering for a long time, but recently, the stars are starting to align,” said Larissa Fenn, director of public affairs for the Hamilton Oshawa Port Authority (HOPA). “Population growth and highway congestion, driver shortages and fuel costs are all part of the equation making marine a more appealing alternative to road transportation. And of course, organizations are looking to lessen the carbon footprint of their supply chain. Short-sea shipping helps tackle all those problems.”

HOPA has a study forthcoming on the short-sea topic, and separately, the Duluth Seaway Port Authority is exploring trade lanes, freight mode and optimization of the modal mix for environmental efficiency and travel time. One thousand-foot maritime vessel can carry the cargo equivalent of approximately 2,800 trucks and do so at a small fraction of the carbon emissions per ton-mile, making it an attractive prospect indeed. A modern equivalent of the *Incan Superior* carrying cargo between the Twin Ports and Thunder Bay would emit 80 percent less carbon dioxide compared to driving that cargo on a truck. Even comparisons to rail transport tilt strongly in favor of waterborne cargo movement, and especially so in this particular instance, since there’s no direct rail route between the two ports.

Examining more broadly the comparison of lake versus land, use of Marine Highway 90 across the Great Lakes would help cargo circumvent some of the nation’s most congested highways and inland chokepoints, making transport safer, greener and more efficient.

One newly launched vessel, the CG Railway’s *Cherokee*, is demonstrating those benefits and more on a 956-mile route between Mobile, Alabama, and Coatzacoalcos, Mexico. Rather than shipping goods across the border

via rail—a winding 2,200-mile journey—the company is sailing those railcars on the *Cherokee*, which is said to be the world’s largest railcar ferry vessel. Bill Stephens detailed the operation for *Trains* magazine in October 2022, explaining how the double-decked *Cherokee* moves exactly 135 57-foot railcars per trip while lowering carbon emissions 44 percent per ton-mile compared to an all-rail route.

The CG Railway told Stephens that it also gains a cost advantage in reduced railcar maintenance, “since they don’t turn a wheel while making a 1,912-mile round trip aboard a ferry.”

The future for *Cherokee* could also include carrying intermodal containers and automobiles, which would further increase the economic and environmental payoff of the short-sea shipping alternative.

“It’s all about finding the optimal balance of each mode for cargo transport, but lengthening the waterborne leg of the journey makes it the most economically and environmentally efficient outcome for most cargoes,” said Deb DeLuca, executive director of the Duluth Seaway Port Authority. “With North America looking to create more resilient, efficient and environmentally friendly supply chains, there’s no doubt that short-sea shipping can play a role, and should play a larger role.”

Ferry vessels like the *Cherokee* and *Incan Superior* stand as obvious examples, but the Great Lakes’ largest ships serve the short-sea trade too.

Earlier this fall, the 1,013-foot *Paul R. Tregurtha* carried 400 tons of special bar quality steel from Monroe, Michigan, to the Gerdau grinding ball mill in Duluth, a move that saved at least 13,000 highway miles on America’s congested roadways while substantially cutting carbon emissions per ton-mile.

“Every ton counts,” said Paul C. LaMarre, Monroe’s port director. “Though small by volume, the enormity of this cargo evolution rivals anything that the port has done in the last decade. This trial cargo is the epitome of U.S.-flagged, short-sea shipping on the Great Lakes.”



The CGR *Cherokee* loads rail cars for shipment from Alabama to Mexico.



TOOLS OF THE TRADE

FOOD PROCESSOR

With a Facebook following near 10,000 and a much-loved cookbook already to her credit, Catherine Schmuck might be the Upper Midwest's most famous chef, but to savor her culinary delights, you'd need to climb aboard the 736-foot Canada Steamship Lines bulk freighter *Atlantic Huron*. That's because this master of the kitchen also knows her way around the Great Lakes-St. Lawrence Seaway System, and she's out there sailing cargo ships most of the year, cooking meals and serving them to crews.

With thousands of miles and meals to her credit on the waves of North America's inland seas, we asked Schmuck to tell us about the magic of maritime cooking and the tools that make it happen.

North Star Port: What's the most important tool in your cooking and baking arsenal aboard these ships? Are they well outfitted for your level of culinary mastery?

Catherine Schmuck: Frankly, I bring a lot of things with me to make my job easier. The two top contenders for most important tool would be my food processor and my stick blender with the whip attachment. But if the boat was sinking and I could only choose one of them to bring with me onto the life raft, it would have to be my food processor. Most ships have food processors on board, but they're often antiques or the attachments are missing. Mine is small and powerful, and I use it for so many things. When I prepare a Thanksgiving meal on a ship, I'll use it to make the cranberries, the dressing, sweet potato casserole with pecans, deviled eggs ... the list goes on and on.

Port: Holiday meals at home can require elaborate planning, even when there's a grocery store right down the street. How do you approach that challenge when you're on the Great Lakes, far away from any stores?

Schmuck: It does take some organization to make sure you have what you need. I do a lot of relief jobs, which means I join a ship for 30 days so that the regular cook can have a vacation. It's always challenging because I sometimes get on board and there are very few groceries. I like to cook everything from scratch, so I often order items that other cooks don't have on hand. Luckily, I can make my own order when I get on the ship and I stock up on my favorite items. So long as I have the essentials—butter, flour, eggs and milk—I can create magic. I make a lot of homemade bread and that always satisfies the crew. I have actually found that missing ingredients has pushed me into discovering and creating some new tasty menus, which I would not have done if I had a general store just down the road.

Port: What's your favorite kitchen hack you've learned through adapting to work on a ship?



Catherine Schmuck



David Schauer

Schmuck: I think one of my best kitchen hacks is cooking with roasting bags. My dad always cooked the turkey in a roasting bag.

I was promoted to chief cook from the second cook position. I was 26 years of age when the chief cook position became available on the *Louis R. Desmarais*. I told the captain I would like the job. I had been on that ship for a year, and he agreed to give me the promotion and the opportunity. I had never cooked a chicken, turkey, or roast. I had never made a pot of soup, but I had sailed for six years as a porter, night cook and second cook, and I believed I could be a chief cook. I loved to eat, and how hard could it possibly be to feed 30 men, right? Before I started my job as chief cook, I had my mom and dad bring me a case of roasting bags. I still cook all my meats, roasts and stews in roasting bags. Besides the cleanup being really easy, the flavors are better, the meat stays moister and you get a lot more liquid for making gravy. I cooked on the *Desmarais* and called it home for five years. I always think of my dad when I put the turkey in the roasting bag and I think of my mom when I make all the sides: mashed potatoes, mashed turnip, dressing and lots and lots of gravy.

TOOLS continued on Page 14



Scenes of the Season

Adam Bjornberg



Korey Garceau



Adam Bjornberg



Chris Mazzella



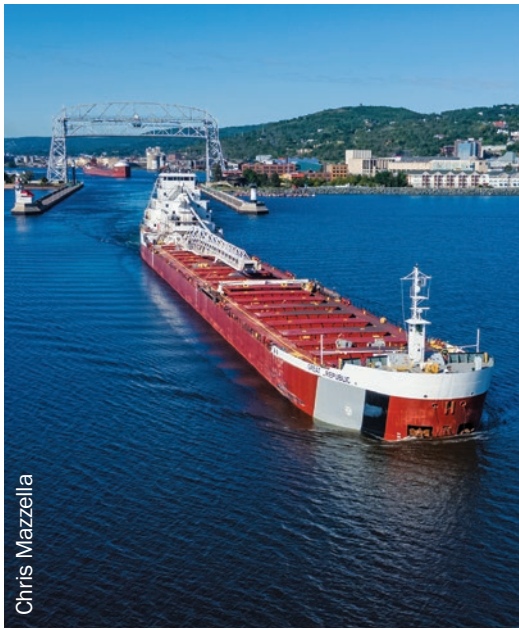
Chris Mazzella



Adam Bjornberg



Gus Schauer



Chris Mazzella



Adam Bjornberg



Carole Lent



The sun rises Oct. 11, 2022, on 260-foot wind turbine blades aboard the M/V Roerborg. Off-loaded by the Duluth Cargo Connect team, these were the longest blades ever transported through the Port of Duluth-Superior.

SEASON UPDATE FALL 2022

More than 3.6 million short tons of maritime cargo transited the Port of Duluth-Superior in September 2022, lifting total tonnage past 20.3 million for the season at North America's furthest-inland seaport. While still 8.8 percent below the five-season average, that total tonnage deficit declined 1.4 percent compared to August and nearly 10 percent since June 30.

Strong months for coal, limestone, grain and salt helped continue Duluth-Superior's second-half tonnage rally.


- The month's coal float topped Sept. 2021 by more than 22 percent.
- Limestone deliveries slightly exceeded last September's pace.
- Better crop conditions and increased demand helped push grain tonnage more than 40 percent above the Sept. 2021 total. Grain exports were especially strong in comparison to last September, with spring wheat, durum wheat and containerized agricultural products leading the way.
- Salt deliveries exceeded Sept. 2021 by a wide margin and finished the month 16 percent ahead of the five-season average pace.

In addition to these highlights, general cargo deliveries to Duluth Cargo Connect also continued strong through September, with an assortment of wind energy cargoes, sacked minerals and 10,000

short tons of dry bulk in the form of golf course bunker sand. General cargo tonnage finished the month almost quadruple the five-season average.


Iron ore, the port's leading cargo by tonnage, pulled 3.5 percent closer to the five-season average in September, finishing the month at nearly 12.5 million short tons.

"July marked a turning point, August was very good, and September was solid in terms of total tonnage and vessel traffic through the Port of Duluth-Superior," said Deb DeLuca, executive director of the Duluth Seaway Port Authority. "It's been a nice rally and we're hopeful that it will continue with a good harvest season, reactivation of Duluth Elevator A, more general cargo shipments scheduled and generally promising market conditions for some of our natural resource bulk cargoes."

The general cargo highlights continued in October with an inbound shipment of wind energy cargo that included the longest wind turbine blades ever to transit the Port of Duluth-Superior: 260 feet in length. One week after that big lift, Duluth Cargo Connect stevedores at the Clure Public Marine Terminal welcomed a 125-ton Yankee dryer destined for the former Verso paper mill in West Duluth. More details about that hefty haul can be found on Page 13 in this issue of *North Star Port*. 

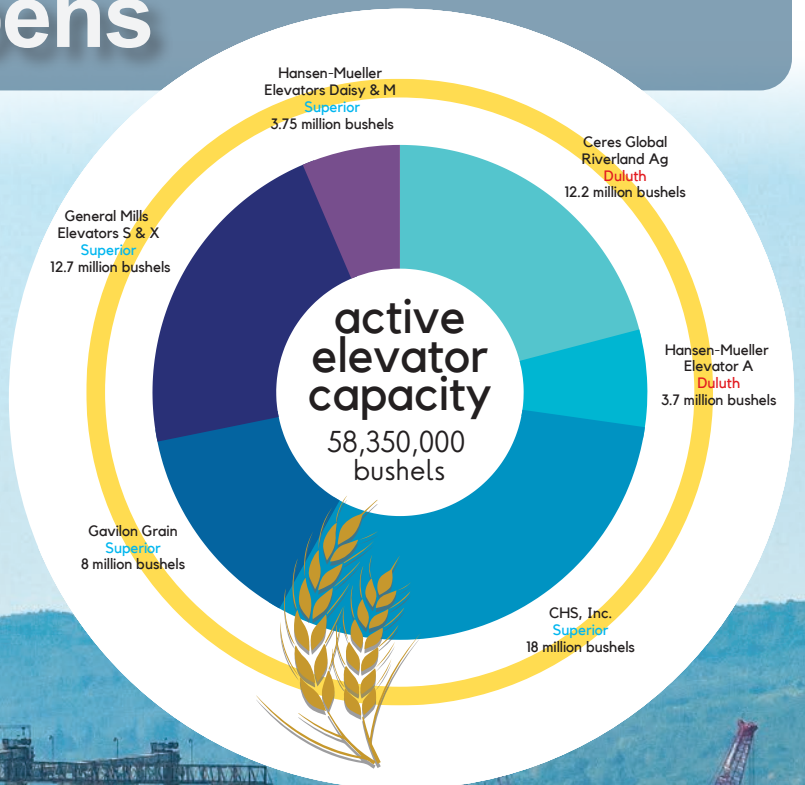
DeLUCA Continued from Page 2

testing is required to address issues such as cold weather performance. In September, the U.S. Maritime Administration announced a 16-month study on low carbon options for Great Lakes shipping. This study will assess the suitability of alternative fuels and power options for Great Lakes shipping.

These studies are a critical and important step. But we'll need to be poised to address technical, economic and regulatory barriers to action, and be prepared to harmonize solutions. Ideally, the current work will lead to a decarbonization strategy tailored to Great Lakes-St. Lawrence Seaway shipping. For all of us shipping stakeholders, it is a time to pay attention and position for the future. 



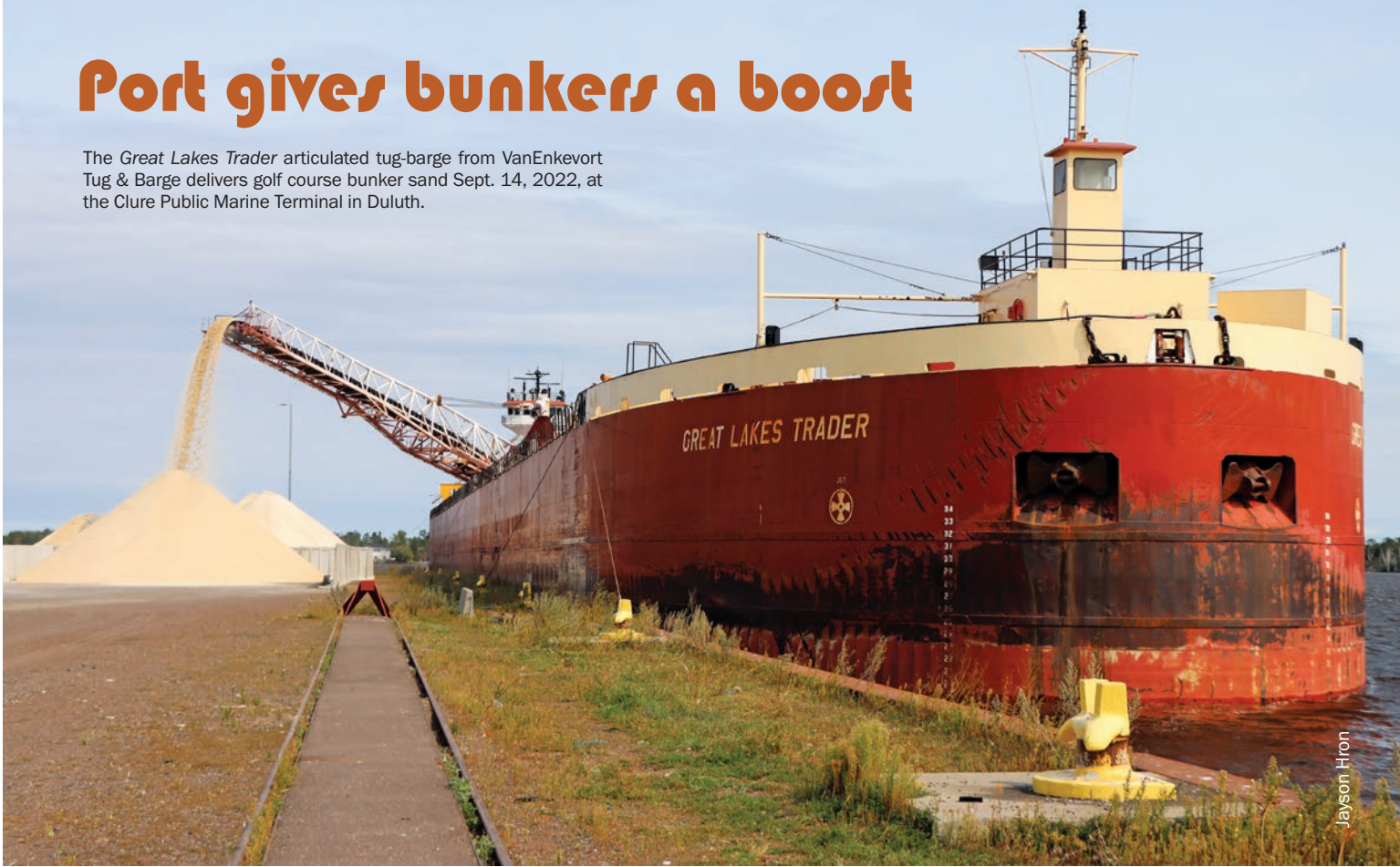
Elevator A reopens



Purchased from General Mills and reactivated in August 2022 by the Hansen-Mueller Company, Duluth's Elevator A welcomed its first grain delivery since the purchase on Sept. 20, 2022. The rail shipment delivered Canadian oats and North Dakota-grown spring wheat. Representatives from Hansen-Mueller said that the facility could load its first ship in November 2022. The elevator last loaded ships in 2013. Consolidated Elevator Company built the structure with ceramic tile, brick and concrete in 1908.

Port gives bunkers a boost

The *Great Lakes Trader* articulated tug-barge from VanEnkevort Tug & Barge delivers golf course bunker sand Sept. 14, 2022, at the Clure Public Marine Terminal in Duluth.



Jayson Hton

Duluth Cargo Connect handles heavy lift for a neighbor

Duluth Cargo Connect took delivery of a 250,000-pound Yankee dryer on Oct. 18, 2022, unloading it from the *Federal Kumano* with a special crane at the Clure Public Marine Terminal. This stout cargo sailed from Europe, but its new home was a mere four miles from the Clure Terminal at the soon-to-reopen ST Paper mill in Duluth. It was the final piece in refitting this former coated paper mill into a tissue paper manufacturer, a rebirth that will reverberate with economic benefits throughout the region. ST Paper expects to begin production early in 2023.

Though it was a short trip from the dock to the mill, it was no less a spectacle, with two trucks and a massive specialized trailer helping navigate the dryer to the former Verso mill, where the crane assembly was rebuilt to hoist it through a side wall.



Bob Welton



Chris Mazzella



Adam Bjornberg

TOOLS *Continued from Page 7*

Port: Who was your culinary inspiration?

Schmuck: Definitely my mom! She is more than a wonderful cook; she is a wonderful hostess. It's not just about the food, but also the joyful environment in which the food was prepared and served. My parents grew up in Germany during World War II, where food was scarce. We were brought up to appreciate food and to cherish memories created when sharing the food with family and friends. Beautiful meals were always at the center of any celebrations. My dad was a part time musician and there was always music and laughter. Every Sunday on the ship, I make Sunday brunch and you can hear big band music coming through my speakers in an homage to my parents.

Port: What drew you toward a career as a cargo ship chef?

Schmuck: I was 19 and working in a family-run motel and restaurant. During a shift in the bar one afternoon, a patron mentioned sailing to me. He was a sailor and he asked what I was doing now that I had graduated from high school. He simply asked, "Do you want to make a lot of money and have a lot of holidays?" I was 19; the answer was easy. That is what drew me to a career on a cargo ship. However, the love of being on the water and the adventure kept me coming back.

Port: What's the most challenging dish or dessert you've ever prepared on a ship?

Schmuck: More than the most challenging dish or dessert were the most challenging conditions to prepare the meals or desserts. Sailing on the lakes can offer some interesting weather. Lake Erie, in particular, is a very shallow lake, so there is a lot of vibration and I've had pots of soup vibrate right off the stove, spilling everywhere. Sailing on the East Coast is very challenging. On Christmas Eve 2021, I was sailing on the *Thunder Bay*. I had meat pies (tourtiere) in the convection oven, and they flew right off the shelf. Luckily, there is a glass door to the oven and I could see the pie hanging against the door. I slowly opened the door, so that I could maneuver my way in to rescue them for dinner. When you are in bad weather, you use oversized pots so the liquid doesn't slosh out of the pots. It makes cooking challenging. I have only lost one meal. I was making corned beef and cabbage when we hit a big roll and the big pots of boiling water started sliding off the stove. Fortunately, one of the crew was passing and he helped me lower the pots into the sink. That night, the menu board said "cold sandwiches."

New Coast Guard Commander readies for the season ahead

Winter is approaching, and that means the U.S. Coast Guard's Marine Safety Unit Duluth (MSU Duluth) is ready and eager to respond to whatever the commercial fleet might encounter on the cold, icy seas ahead. This reassurance comes from Commander Jarrod M. DeWitz, who was installed as commanding officer of MSU Duluth during a change-of-command ceremony July 8, 2022. He succeeds Commander Frances M. Smith, who held the position since 2019 and now serves at the U.S. Coast Guard Training Center in Yorktown, Virginia.

Commander DeWitz brings vast experience to the post with a Coast Guard career that spans nearly two decades. He joined the Coast Guard in 2003 after graduating from the U.S. Merchant Marine Academy at Kings Point, New York, with a bachelor's degree in logistics and intermodal transportation and later earned a Master of Business Administration degree from Columbia Southern University. He most recently served as prevention department head at U.S. Coast Guard Sector Honolulu, Hawaii, where he was responsible for all U.S. and foreign commercial vessel and facility inspections, marine casualty investigations and navigation aids within a 1.4 million-square-mile area.

As head of MSU Duluth, Commander DeWitz and his crew execute all marine missions associated with maritime safety, security and protection of Lake Superior and its connecting and tributary waters. MSU Duluth's area of responsibility is unique in that it shares an international border with Ontario, Canada, as well as the tri-state zone encompassing northern Minnesota, Wisconsin and Michigan.

Commander DeWitz spent his first few months getting to know the area, partner agencies, the region's maritime industry and his Coast Guard staff.

"I'm quickly learning that this is an exciting time to be stationed in Duluth, with the introduction of passenger cruising as well as containerized cargo arrivals," said Commander DeWitz. "(In the wake of COVID-19) MSU Duluth is focused on reestablishing key relationships to review, prepare and practice the processes to ensure maximum response readiness in case of an emergency. You will see our teams out in the field more, together with our area representatives, deploying equipment and performing full-scale exercises."

MSU Duluth recently hired three new civilian employees to cover physical security, cyber security and emergency management. They will provide critical continuity important to the maritime industry.

"As we wind down the season's shipping, we will be focusing on professional development opportunities where

Commander Jarrod M. DeWitz was installed as commanding officer of MSU Duluth during a change-of-command ceremony July 8, 2022. He succeeded Commander Frances M. Smith.



Jayson Hron

our folks will join neighboring Coast Guard units, deploy to Hurricane Ian relief efforts, and support illegal migrant operations in the Caribbean," Commander DeWitz said. "Meanwhile, at home, our expert marine inspectors will be conducting the annual winter layup inspections, tending to the aging laker fleet and preparing them for earliest spring breakouts."

Settling into his new post and reflecting on the community he and his family now call home, Commander DeWitz waxes poetic, never forgetting the very real mission at hand.

"The Twin Ports are picturesque (with) thousand-foot lakers gliding on waveless waters cutting gracefully through the sea of sail boats as they traverse to and from our ports," Commander DeWitz said. "The summers in Duluth might be America's best kept secret. However, as winter approaches, the Coast Guard is on high alert, having prepared the commercial fleet for the seas ahead, and still ready to respond when they might find themselves in peril. Rest easy, knowing that the Coast Guard always has the watch."

Triennial report rates Lake Superior ecosystem in ‘good’ condition

Every three years, the United States Environmental Protection Agency and Climate Change Canada jointly publish *The State of the Great Lakes*, which summarizes lake health using nine key indicators. The conditions in each category are graded as either good, fair, poor or undetermined, with trend grades of improving, unchanging, deteriorating or undetermined.

More than 120 scientists and other experts assemble available data and compile it into the report. The 2022 edition went live July 29 with the following analysis of Lake Superior:

Based on the assessments of the nine State of the Great Lakes indicators, the overall status of the Lake Superior basin ecosystem is good and the trend is unchanging.

Overall, Lake Superior has the best habitat and species conditions of all the Great Lakes. Overall, coastal wetlands in the Lake Superior basin are in fair condition. While 62 percent of surveyed wetland sites have plant communities assessed as good, there are numerous wetlands that are degraded. The health of the lake is dependent on the health of the watersheds and the tributaries that connect them.

Lack of habitat connectivity has affected some native fish species such as lake sturgeon, but conditions are improving. Lake trout are in good condition, supported by a stable and diverse prey fish population. The lower food web is healthy with the small shrimp-like species of diporeia at good levels. The Lake Superior prey fish community is dominated by native species, a condition not found in other Great Lakes. Invasive species, particularly sea lamprey, are still causing harm to predatory fish such as lake trout. Adult sea lamprey populations are above target levels

in Lake Superior, though annual control activities in the Great Lakes have successfully suppressed sea lamprey populations by approximately 90 percent since pre-control efforts, and sea lamprey populations have declined in most lakes.

Ballast water control efforts credited for improvements

Regarding invasive species, the report noted tremendous success in reducing establishments in recent decades, a win largely credited to stringent ballast water inspection and management programs. No new aquatic non-native species confirmed to be introduced through ballast water have become established in the Great Lakes since 2006. Progress remains more elusive in halting the spread of already-established non-

native species, introduced and spread via multiple vectors, with their impact status still rated poor. Other vectors include recreational boating, deliberate releases, flooding-initiated escape from rivers into the Great Lakes, canal jumping, bait bucket release, deliberate or unintended release through fish stocking, aquarium release and importation of non-native wildlife.

Lake Superior’s groundwater quality is assessed as good based on nitrate and chloride. The Lake Superior basin has a high percentage of natural land cover, which is at low risk of habitat and water quality degradation. Still, the lake is experiencing changes, such as warming waters and decreasing ice cover due to long-term climate shifts.



Jayson Hiron

Klosowski completes Port Authority board tenure



Ray Klosowski concluded an 18-year stint on the Duluth Seaway Port Authority Board of Commissioners in October, earning distinction as the longest-serving city appointee to the board. His was the third-longest term of any current or former Port Authority commissioner.

A retired U.S. Air Force brigadier general and Minnesota Aviation Hall of Fame inductee, Klosowski served previously as executive director of the Duluth Airport Authority. He also commanded the 148th Fighter Wing at Duluth (1989–1995) and the Minnesota Air National Guard (1995–1997). The Duluth City Council appointed him to the Port Authority board in December 2004, reappointing him in 2010 and 2016.

“I can’t believe 18 years have gone by so fast,” said Klosowski. “Everybody who serves on this board seems to pick up the spirit of the Port Authority, and that’s a real positive. I’ve enjoyed all the personalities who’ve been here. It’s been a real pleasure and honor to serve on this board and see all the progress that has occurred over that time.”

Klosowski was born in Moose Lake, Minnesota. He graduated from Duluth Central High School and the University of Minnesota Duluth. He served as president of the Port Authority board in 2017 and 2018.

“We’ve benefited so much from Commissioner Klosowski’s experience, acumen and passion for progress and economic development in this region,” said Deb DeLuca, executive director of the Duluth Seaway Port Authority. “He’s been a great contributor to a great board.”

The Port Authority’s seven-member board is comprised of three Duluth City Council appointees, two governor’s appointees and two St. Louis County Board appointees. Each appointment carries a six-year term. The Duluth City Council named Nancy Norr as Klosowski’s successor in late October.

HIRE: JEFF BLASKOWSKI, formerly of Gavilon Grain in Superior, Wisconsin, to manage Duluth Elevator A for the Hansen-Mueller Company, which purchased Elevator A from General Mills and reactivated it in August 2022.

TOURED: Duluth’s Clure Public Marine Terminal, by students in the University of Wisconsin-Superior transportation and logistics management program, led by DANIEL RUST, professor and program director.

RETIRED: CRAIG MIDDLEBROOK, longtime deputy administrator of the Great Lakes St. Lawrence Seaway Development Corporation. Middlebrook began serving with the Development Corporation in 1995. Earlier this month, he opened the Lake Superior Marine Museum Association’s 2022 Gales of November event with a keynote presentation in Duluth.

FUNDED: The purchase of new five-inch hose lines for Duluth Fire Department trucks, including the truck designated to respond at marine facilities on Rice’s Point. These new hoses will deliver a significant water supply upgrade due primarily to reduced friction loss. The purchase was funded in part by a \$30,000 grant from the Cenovus Energy Superior Refinery. “Partnerships like this help us protect port assets that are vital to our community, in addition to increasing firefighter safety,” said DFD Fire Chief SHAWN KRIZAJ.

ATTENDED: The U.S. Grain Council’s biennial Export Exchange, KATE FERGUSON, Duluth Seaway Port Authority director of trade and business development. The October event brought more than 200 customers from 50 countries and nearly 300 domestic suppliers of U.S. coarse grains to Minneapolis, where Ferguson represented the Port of Duluth-Superior and the Great Lakes-St. Lawrence Seaway System.

VISITED: Duluth Seaway Port Authority headquarters on Oct. 5, ALAN GOGBASHIAN, British consul general, who was part of a business-building roundtable that included U.S. Senator AMY KLOBUCHAR and representatives from regional industry and agriculture.

DRIVEN: Test piles in late September at the site of the Duluth Seaway Port Authority’s East Annex Warehouse expansion. When completed in 2023, the expansion will add 56,000 square feet of new warehousing space at the Clure Public Marine Terminal.

MAKING WAVES

A port news roundup

Jensen joins Minnesota DNR as AIS prevention planner

A familiar face is in a new place as Doug Jensen, formerly with the University of Minnesota Sea Grant program, has joined the Minnesota Department of Natural Resources as an aquatic invasive species (AIS) prevention planner.

With Sea Grant, Jensen worked as an assistant professor and AIS program coordinator. Prior to that, he conducted research at the Environmental Protection Agency Lab in Duluth. He has a bachelor's degree in biology and a master's degree in education from the University of Minnesota Duluth.

In his new role with the DNR, Jensen provides technical support to counties, local governments and their partners to develop and optimize AIS prevention strategies and direct AIS Prevention Aid funding. He also facilitates regional workshops convening local government staff who lead their county's AIS prevention programs with community partners to share, learn and support collaborative efforts aimed at AIS prevention.

In addition to his DNR role, Jensen is also a longtime leader in the St. Louis River Quest educational program for regional sixth-graders, a role he will continue.

"Supporting a community event which captures and celebrates the value of the St. Louis River ecosystem, recreation and business and commerce is in my blood," said Jensen. "Due to decades-long investments by federal, state, tribal, business and community partners, the river is back and this story needs to be told. Beginning with Duluth-Superior sixth-graders is the perfect place to start, and the program has been doing it since 1993. I believe that River Quest is the nation's longest-running ship-board education program for middle-school students."



Doug Jensen
Minnesota DNR

Great Lakes cruising revival sails to success

The 2022 Great Lakes cruising season reached its conclusion in Duluth with the *Viking Octantis* departure on Sept. 19. In all, Duluth welcomed nine cruise ship arrivals this season: seven from *Viking Octantis* and two from the American Queen Voyages vessel *Ocean Navigator*.

This return of cruising after an eight-year hiatus helped drive a \$125 million surge in cruise-related economic activity across Great Lakes ports in 2022. The Duluth Seaway Port Authority worked in partnership with the City of Duluth and the Duluth Entertainment and Convention Center on the cruising reboot.

"It definitely required a team effort to bring cruising back to Duluth, but the results were good, both in terms of the economic benefits and also the quality experience

cruise passengers had in Duluth and throughout the Great Lakes," said Kate Ferguson, director of trade and business development for the Duluth Seaway Port Authority. "We're excited to see Great Lakes cruising build on this solid start in the years to come."

In 2023, the total number of cruise ships on the Great Lakes is expected to increase from nine to 11 with the additions of the *Viking Polaris* and *Hanseatic Inspiration*. With that, passenger visits are expected to climb 15 percent to nearly 170,000, and total economic impact is expected to reach \$180 million, according to Cruise the Great Lakes.

At least four cruise ships are scheduled for eight visits to Duluth in 2023, highlighted by a new itinerary for a 71-day, nine-country cruise that begins in Duluth, crosses the Great Lakes, sails the Atlantic coast, then passes through the Panama Canal en route to Antarctica. Of the eight visits, six are turnaround operations for Viking ships, wherein the vessel completes one voyage in Duluth and subsequently starts a new voyage from Duluth. This creates opportunities for guests to enjoy Duluth's amenities before or after their cruise, including staying in our hotels, sampling our restaurants, and flying in and out of our airport.

"Being the hub of an itinerary like that further increases the economic benefit to Duluth, because those passengers would likely be flying into Duluth and spending an extra day or more in the Twin Ports before embarking on their expedition," said Ferguson. "Duluth and the Great Lakes have become alluring destinations on the world cruising scene, and that's an exciting development."



The *Viking Octantis* sails Sept. 19 in the Duluth harbor during the cruise ship's final visit of the season. In all, Duluth welcomed nine visits from cruise ships in 2022.

Adam Bjornberg

IN FOCUS: Stephanie Judd Irwin

Our In Focus series profiles the photographers whose images bring the port's working waterfront to life.

How did you get into photographing the shipping scene?

The first time I picked up a camera and started photographing freighters was during a family vacation to Mackinac Island. There is so much to photograph there: the freighters sailing through the Straits of Mackinac, the Mackinac Bridge, Round Island Light, the Victorian cottages on the bluffs, the many historic landmarks ... It's still one of my favorite places to visit and to photograph.

If this is not your profession, what's your "day job"?

Photography is not my profession—I'm just an amateur—though it's one of my favorite hobbies. By day, I'm a gastroenterologist at St. Luke's Hospital in Duluth, as is my best friend and husband, Brad. He often accompanies me.

What draws you to Great Lakes shipping for images?

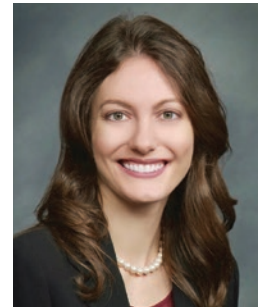
The beauty and serenity of seeing the freighters come through the canal in Duluth is what initially piqued my interest. Watching and photographing these ships was something so different from my days at work and was a great way for me to recharge and relax. Then I began to learn about the shipping industry itself and developed friendships with those working on the freighters. I have a lot of respect for the men and women aboard these vessels and enjoy sharing in their lives, even if it's often only through the lens of a camera.

Do you have a personal connection to the lake? I was born and raised in mid-Michigan, and my family kept our boat on Lake Charlevoix, so my summers were spent there and on the waters of Lake Michigan. Boating is in my blood. I visited Duluth in 2019 after admiring the work

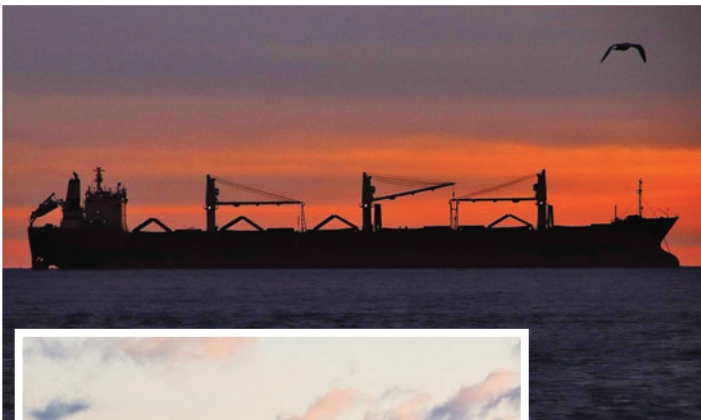
of photographer Jane Herrick. I fell in love with Duluth on that trip, and I was even able to do some photography with Jane. Little did I know that less than two years later I would be moving to the area for a career opportunity. With my love of the water, I've also started working toward my OUPV (six-pack) Captain's license.

Are most of your shots planned or spontaneous? Most of my shots are planned. However, I've learned that some of my best shots are spontaneous and occur when least expected, so it's become a habit to bring my camera along on any hiking or biking adventure. Usually, I have a sense when "all the stars align" for the perfect picture. However, sometimes it's only after reviewing all the shots that one of the least expected ones captured some unique perspective.

What is your approach to photography? I consider myself quite new to this hobby, but photography has been a wonderful outlet and express my artistic side. It also has been a great way for me and my husband to meet great friends who share our passion for the Great Lakes and the shipping industry. One of our favorite things is to watch the sunrise together, and that often involves going to Canal Park. Undoubtedly, we run into fellow photographers who have become close friends. The friendship among photographers here is something very special that we cherish.



Stephanie Judd Irwin



Photos by Stephanie Judd Irwin



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