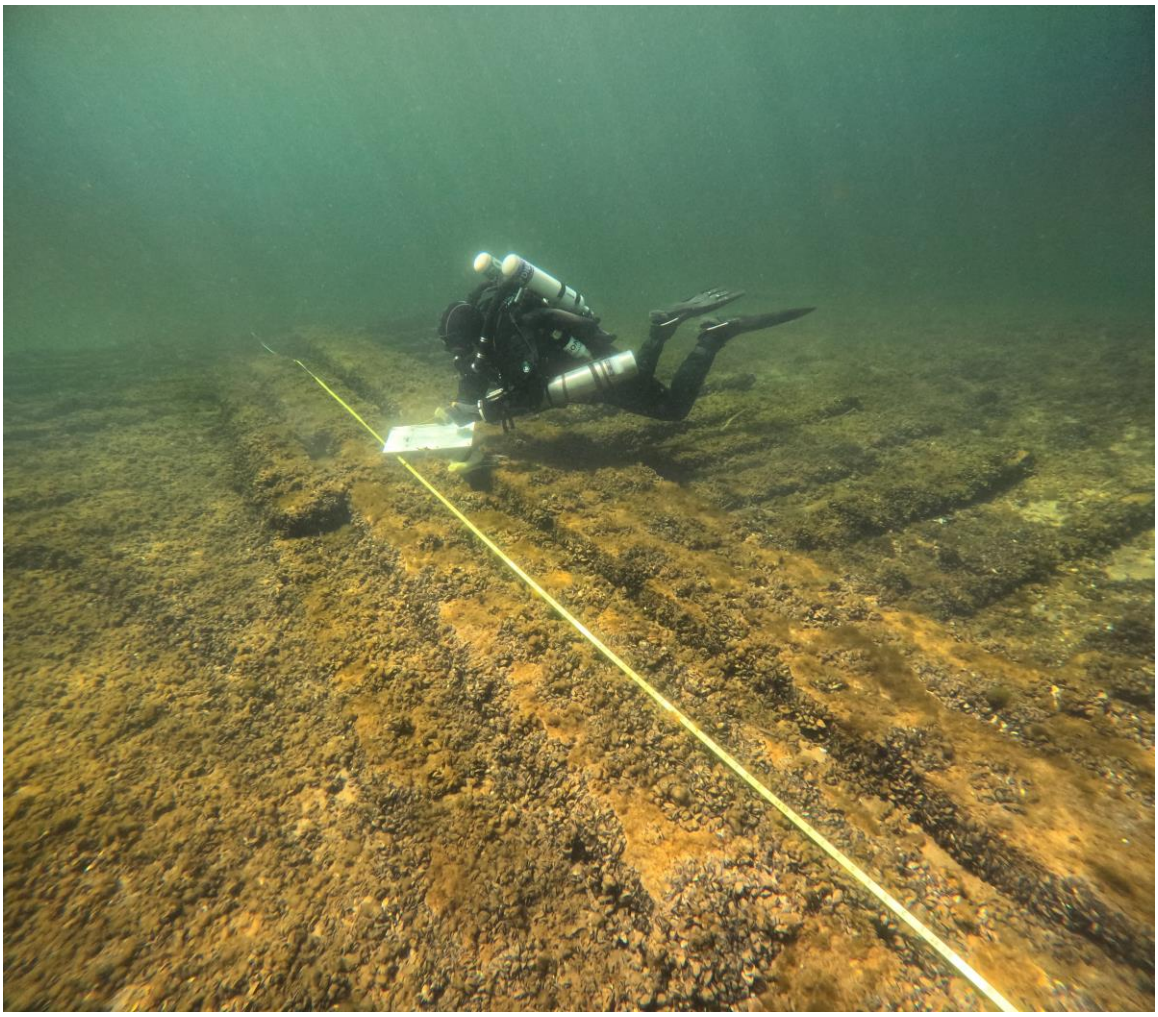
Ships Lost, Stories Found: Underwater Archaeological Investigations from the 2023-2024 Field Seasons



Included: ***G.L. Newman, Grey Eagle, Little Harbor Launch, Margaret A. Muir, Mojave, Pride, and Sassacus.***

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Assisted by grant funding from the University of Wisconsin Sea Grant Institute and Wisconsin Coastal Management Program, this report was prepared by the Wisconsin Historical Society's Maritime Preservation and Archaeology Program. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the Wisconsin Coastal Management Program, National Coastal Management Program, University of Wisconsin Sea Grant Institute, or the National Sea Grant College Program.

Note:
At the time of publication, Little Harbor Launch, *Mojave* and *Pride* have been listed on the State and National Registers of Historic Places. The *Margaret A. Muir* has been listed on the State Register of Historic Places and the nomination packet submitted to the National Park Service for review for inclusion on the National Register. The *G.L. Newman, Grey Eagle,* and *Sassacus* sites lack the archaeological integrity required for listing to the State and National Register of Historic Places.

Cover photo: Volunteer diver Chris Spoo surveys the schooner *G.L. Newman.*

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ACKNOWLEDGEMENTS

The Wisconsin Historical Society's Maritime Preservation and Archaeology Program conducted projects within this report during the 2023 and 2024 field seasons. The successful completion of this research relied heavily upon the hard work and dedication of many individuals and institutions. This research would not have been possible without hours of dedicated work conducted by volunteers and collaborators.

We would like to thank Tim Wollak for providing information about the *G.L. Newman* site that was discovered while fishing with his daughter Henley in the summer of 2023. It was his keen eye that inspired him to snap a screenshot of his GPS which allowed us to relocate the find. We would like to thank Wisconsin DNR Conservation Warden Mike Neal for following up on the coordinates and capturing the first ROV footage of the shipwreck. Community involvement in reporting as well as preservation is important in the stewardship of submerged cultural resources. The survey of the widely scattered site of the *G.L. Newman* was completed with the assistance of Wisconsin Historical Society volunteers Chris Spoo, Tim Pranke, Bob LaViolette, Zach Whitrock, and Bob Jaeck. Thank you to Wisconsin Historical Society Maritime Specialist Jordan Ciesielczyk-Gibson for working closely with the Wollaks and for providing maritime educational opportunities at Henley's elementary school in Peshtigo, Wisconsin.

The location of the schooner *Grey Eagle* was brought to our attention in June 2023 by Matt Olson of Door County Adventure Rafting. Just ahead of a weeklong project to document historic lumber piers in Door County funded through Wisconsin Coastal Management Program, we were able to tack on the survey of the *Grey Eagle* in mid-June 2023 days after its discovery. Thank you to our volunteer Bob Jaeck and Archaeologist Amy Rosebrough for accompanying us on this survey. Preliminary historical research for the *Grey Eagle* shipwreck examined in this report was collected by volunteer Russel Leitz through a search of national newspaper databases.

The Little Harbor launch was discovered during an Office of Coast Survey bathymetry survey of the bay of Green Bay in 2021. In June and July 2024, through grant funding from the University of Wisconsin Sea Grant Institute, Society maritime archaeologists and volunteers surveyed the wreck. Thank you to volunteers Tim Pranke, Bob LaViolette, Zach Whitrock, and Bob Jaeck for providing their knowledge and skills in this work. We would also like to thank Door County Maritime Museum, Neville Public Museum, Racine Heritage Museum, the University of Wisconsin-Parkside, and Wisconsin Maritime Museum for providing access to their archives and collections that contributed to this research.

The wreck of the schooner *Margaret A. Muir* was located in May 2024 during a project initiated by Wisconsin Underwater Archaeology Association (WUAA) under a Wisconsin Public Lands Archaeology Permit. The surveyed of the site was conducted in May and June 2024 by

Wisconsin Historical Society archeologists and volunteers. Thank you to volunteers Tim Pranke, Bob LaViolette, Zach Whitrock, and Bob Jaeck for their assistance. A special thank you should be given to WUAA President, Brendon Baillod for providing initial research documents for the *Margaret A. Muir* and for review of the National Register of Historic Places nomination.

Although discovered some years earlier by Steve Radovan, the survey of *Mojave* was conducted in June and July 2023 with the assistance of volunteer divers Bob LaViolette, Grant Tobin, and Zach Whitrock. We would like to thank Steve Radovan for sharing knowledge of the *Mojave* shortly after discovery so that we could affect additional protections to this valuable resource and for sharing his research with us to aid in the National Register of Historic Places nomination of the wreck. Thank you to Tom Crossmon of Crossmon Consulting LLC, for conducting an ROV and multi-beam sonar survey of the wreck site that allowed for detailed measurements of the ship.

The schooner *Pride* was surveyed during a weeklong project in May 2023 following previous work in 2022 by WUAA conducted through a Public Lands Archaeology Permit held by Bob Jaeck. The survey of the wreck site was conducted during an advanced field training exercise for Wisconsin Historical Society volunteers. We would like to thank Chris Spoo, Tim Pranke, Bob LaViolette, Zach Whitrock, and Bob Jaeck for their assistance with this survey. Preliminary historical research for the site was conducted and provided by Bob Jaeck.

The schooner *Sassacus* was reported to us in September 2023 through an anonymous report by a kayaker to the WisconsinShipwrecks.org website. The kayaker spotted the shipwreck's remains while visiting the *City of Glasgow* in Lily Bay. We would like to thank volunteer Bob Jaeck for assisting with access to this very shallow site with his inflatable boat that allowed for the survey.

A special thank you to volunteer Zach Whitrock for creating highly detailed and scaled photogrammetry models of *G.L. Newman*, Little Harbor Launch, *Margaret A. Muir*, *Mojave and Pride.* His assistance in creating these models played an integral part in nomination of the latter four wrecks to the National Register of Historic Places.

Special recognition goes to our long-time volunteer, Tom Villand, for his assistance in updating and organizing the ship files of the over 780 historic vessel losses in Wisconsin waters. Thank you to University of Wisconsin-Madison student intern, Leo O'Shasky, for his help with updating and editing WisconsinShipwrecks.org. Along this vein, we would like to again acknowledge the University of Wisconsin Sea Grant Institute for extended outreach opportunities through social media postings, press releases, and by hosting our website www.WisconsinShipwrecks.org.

Lastly, thanks to Alexander Schneider and Michele Hagerman for their help editing this report.

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CHAPTER ONE
INTRODUCTION

Underwater archaeological surveys conducted by the Wisconsin Historical Society are a joint effort of several organizations and many individuals. The surveys conducted in this report are the result of a cooperative effort between the Wisconsin Historical Society, the Wisconsin Coastal Management Program, and the University of Wisconsin Sea Grant Institute. Project funding was provided by general purpose funding and grants from the University of Wisconsin Sea Grant Institute and Wisconsin Coastal Management Program. The surveys were organized and staffed by the Society's Maritime Preservation and Archaeology program archaeologists and volunteers and were conducted over the 2023 and 2024 field seasons.

The Wisconsin Historical Society is the State of Wisconsin's principal historic preservation agency and charged under state statutes (44.02 and 44.30-44.31) with the research, protection, restoration, and rehabilitation of historic properties within Wisconsin. Under Wisconsin statute 44.47, the Society is also charged with the identification, evaluation, and preservation of Wisconsin's underwater archaeological resources, including submerged prehistoric sites, historic shipwrecks, and aircraft on state-owned bottomlands. Recognizing the multiple-use value of underwater archaeological sites to scientists, historians, and recreationalists, these underwater remnants of our past are broadly termed "submerged cultural resources." Submerged cultural resource management goes beyond the scope of traditional historic preservation programs, encountering diverse multiple-use concerns such as recreation and commercial salvage.

The State of Wisconsin has additional management responsibilities for submerged cultural resources under federal law, including the National Historic Preservation Act of 1966 and the Abandoned Shipwreck Act of 1987 (Public Law 100-298). State legislation (1991 Wisconsin Act 269) and modifications to state law in adherence with federal guidelines issued under the Abandoned Shipwreck Act has provided Wisconsin with a more formalized and rational framework for underwater archaeological resource management. This legislation also authorizes the Society and the Wisconsin Department of Natural Resources to designate underwater preserves for the preservation and recreational development of underwater archaeological sites.

Created in 1988, the Society's Maritime Preservation and Archaeology Program works to survey, inventory, and evaluate Wisconsin's underwater archaeological resources, develop preservation strategies, administer field management practices, and enhance public appreciation and stewardship for Wisconsin's precious and fragile maritime heritage (Cooper 1992; 1993). The program is housed within the Society's State Historic Preservation Office.

Any initiative aimed at identifying, managing, and interpreting Wisconsin's coastal cultural resources must consider these resources at both a local and a regional level. The sheer length (approximately 860 miles) and geographical, social, and cultural diversity of Wisconsin's Great Lakes coastline makes this essential. Established in 2001, the Wisconsin's Maritime Trails Educational Initiative divides the state into five regions, the boundaries of each selected to encompass common resources within that area, and merges regional diversity into a statewide educational context.

Wisconsin's Maritime Trails Educational Initiative encourages the public to consider each of these unique properties within the broader context of Wisconsin's rich maritime history. Winding above and below the waves, the Wisconsin's Maritime Trails Education Initiative forms a trail linking historic shipwrecks, lighthouses, historic waterfronts, historic vessels, museums, and shore-side historical markers and attractions. Through the WisconsinShipwrecks.org website, interpretive materials, and public presentations the program integrates archaeological research and public education to encourage divers, snorkelers, boaters, and paddlers, to responsibly visit Wisconsin's impressive collection of maritime cultural resources. Some of the major elements of the Wisconsin's Maritime Trails include:

Archaeological Research. The documentation of Wisconsin's submerged cultural resources, primarily historic shipwrecks, is the foundation of the Maritime Trails Education Initiative. Beyond academic and resource management applications, the result of this research forms the basis of most interpretation and outreach projects.

Shipwreck Moorings. With volunteer assistance, the Society maintains permanent moorings on 28 historic shipwrecks statewide. These moorings facilitate recreational access, provide a means of interpreting the wreck sites for visitors, provide a safe point of ascent and descent for divers, and eliminate anchor damage from recreational boaters anchoring into the site.

Waterproof Guides. Designed with divers and paddlers in mind, these rugged, waterproof guides contain information that places each site in its historical context, and describes the site highlighting unique features that might otherwise go unnoticed. In partnership with the University of Wisconsin Sea Grant Institute, the Society has produced guides to 48 Wisconsin shipwrecks or submerged cultural sites.

Public Presentations. Given at a variety of venues, public presentations provide a direct, personal connection between the Society and the general public. Society underwater archaeologists and volunteers have reached approximately 56,173 people via public presentations since the Wisconsin's Maritime Trails Education Initiative's inception in July 2001 and have reached over 4,000,000 viewers through media such as talk radio and public television

Interpretive Signage. As of January 2020, the Society has created shore-side informational markers for 43 historic shipwrecks and waterfronts. Utilizing an identical template that unifies the signs as attractions and information points within the statewide Maritime Trails program, the markers emphasize the broader connection between Wisconsin's many coastal historic resources.

Interpretive kiosks. Four interactive touch-screen kiosks highlighting Wisconsin's historic shipwrecks are installed at Wisconsin Historical Museum, Wisconsin Maritime Museum, both the Door County Maritime Museum at Gills Rock, and the Society's Madeline Island Museum. The kiosks reach an estimated 450,000 museum visitors annually and make archaeological research results available in a fun, interactive format while educating visitors on the importance of Wisconsin's coastal cultural resources.

Maritime History Geocaches. Taking participants on self-guided tours of local maritime heritage sites, or modern commercial use of the Great Lakes and their tributaries, 39 Maritime History Geocaches have been placed in the communities of Superior, Two Rivers, Manitowoc, Sheboygan, Port Washington, Milwaukee, and throughout Door County. A full listing of available geocaches under the name "WiscMaritime" can be found at www.geocaching.com.

Website. The wisconsinshipwrecks.org website, dedicated to Wisconsin's historic shipwrecks, underwater archaeology, and maritime history, ensures that the general public has access to timely and useful information. The site serves as a unified "maritime resource" information point for Wisconsin residents, state visitors, and the public at large. Unveiled in 1996 and updated in 2014, this website features a searchable database of maritime resources and Wisconsin shipwrecks. A collaborative effort between the Society and the University of Wisconsin Sea Grant Institute, the site makes underwater archaeological research results accessible to the public and features detailed information on historically and recreationally significant shipwrecks in Wisconsin waters of Lakes Michigan and Superior.

Partnerships. The Society partners with federal, state, and local agencies, chambers of commerce, private businesses, non-profits, and individuals. With core partners, dozens of volunteers, and a growing list of project-specific partners, this aspect of the initiative ensures that all of those with a stake in Wisconsin's maritime cultural resources share in their management and interpretation.

Research Design and Methodology

Nineteenth-century Great Lakes wooden ship construction and operation is poorly understood. Little is known about how vessels were built and operated during this time. As a result, much of

what we know about Great Lakes merchant vessels has come from the archaeological record of vessels that now lay on the Great Lakes bottomlands. The archaeological surveys within this report were designed to provide a better understanding of historic Great Lakes commercial vessel construction and use.

Field data collection methods included traditional baseline surveys aided by digital photo and video documentation. Data from deep wreck sites was collected by a remotely operated vehicle (ROV) equipped with video and multi-beam sonar. Archaeological documentation was conducted along guidelines established by the National Park Service for submerged cultural resource survey and evaluation in determining site eligibility for the National Register of Historic Places. Research designs were directed toward formulating site descriptions and archaeological assessments with a package of management questions, some specific to the site itself (i.e., location, environmental parameters, integrity, extant features, and artifacts), as well as more general questions that place the site within its broader historical context (i.e., historical significance, archaeological potential, recreational potential, and management requirements).

Research objectives and methods included:

1. Determine the site location, environment, and parameters through visual survey of extant elements, features, artifacts and documentation and mapping of exposed remains using trilaterated survey points, and an onsite (submerged) datum. Additionally, document the site using photographs, video, and measured sketches of those architectural and archaeological elements that are diagnostic of a) vessel type, b) vessel age, c) vessel construction style and method, d) vessel propulsion, e) vessel use, f) vessel identification, g) vessel cargo, and h) shipboard human activity broadly indicative of occupation, status, ethnicity, subsistence, or other questions allied with the study of maritime anthropology and Great Lakes social and economic history.

2. Provide assessment of a site's environmental and cultural context for determining its historic significance and archaeological potential according to the National Register of Historic Places criteria, recreational potential, and management requirements.

Site evaluation and documentation was conducted using traditional and closed-circuit scuba technology as well as ROV. Documentation included digital photo mosaics, photogrammetry, measured sketches, construction schematics, digital still and video imagery, and scaled site plans for National Register-level documentation. Analysis was conducted using comparative evidence obtained from archaeological surveys of similar sites and augmented by historical documentation relating to individual sites and general Great Lakes maritime history. Where artifacts were encountered, material culture was interpreted in the context of its relevance to shipboard activities, shipboard hierarchy, shipboard activity/use areas, and other aspects of maritime anthropology.

This submerged cultural resource survey report serves as a source document for site descriptions, analysis, interpretation, and management recommendations used in cultural resource management planning, recreational development, and public education. It also serves as the source document for eligibility determination and nomination for listing on the National Register of Historic Places. Inclusion of these sites on the National Register and state resources management plans is an important step in achieving long-term site preservation. Suggested plans for management include mooring buoys to facilitate recreational access (where appropriate) and alleviate damage caused by on-site boat anchoring. Other possibilities include site interpretation for visitors through self-guided site maps and web-based pages. Site preservation ensures availability both as a future recreational resource and as an important and nonrenewable source of scientific data relating to Great Lakes underwater archaeology, maritime history, marine architecture, and maritime anthropology.

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CHAPTER TWO
SCHOONER *G.L. NEWMAN*

The schooner *G.L. Newman* was built by Master Carpenter Benjamin Flint at Black River, Ohio in 1855. *G.L Newman* was described as schooner-rigged with two masts, one deck, a plain head, and square stern. It measured 123 4/12 feet long, 26 9/12 feet in beam with 11 2/12 feet depth of hold. Its tonnage was calculated at 337 29/95 tons. The *G.L. Newman* was registered at the port of Cleveland, Ohio on 28 April 1855. Benjamin Flint became its first Captain and Black River was named as its home port (Bureau of Navigation 1855a).

In contemporary news reports, the ship is alternatively referred to as schooner, barque (bark), or barkentine. There was only one ship during this time period named *G.L. Newman*, and it was always registered as schooner-rigged. It is probable that the *G.L. Newman* was rigged as a topsail schooner which commonly confused reporters.

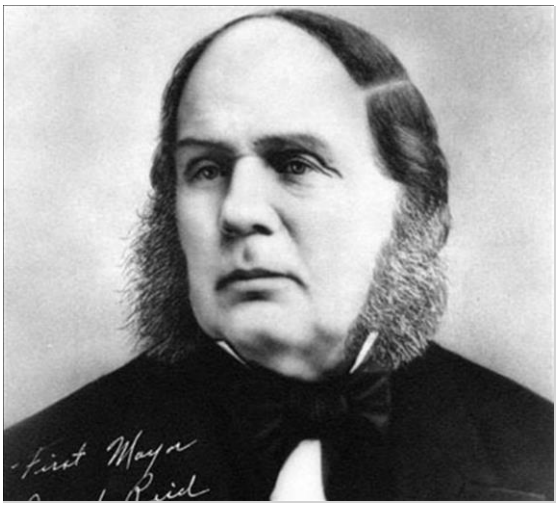

Figure 1. Conrad Reid (Mayoral Portrait)

The vessel was constructed with the support of Black River investors, businessmen, Conrad Reid and Henry Ephraim Mussey. Reid was the proprietor of the Reid House, a hotel in Black River. He was born in Wilkes Barre, Pennsylvania in 1802. He migrated west to Cleveland with his family at the age of 4 and to Black River at the age of 9. Reid was a former sailor, having worked on the lakes in his youth. He invested in and sold vessels for sixteen years of his life. Later, in 1874, Reid became the first Mayor of Lorain, Ohio (Bureau of Navigation 1855a; U.S. Census 1860a; Willams 1879; Wright 1916). Mussey was born in Sandy Hill, New York in 1818. He was president of the H.E. Mussey & Company (a quarrying operation in Elyria, Ohio, later Mussey Stone Company, and a stockholder in the First National Bank of Cleveland. Mussey became managing owner of the *G.L. Newman*. Reid and Mussey each owned a 7/16 share in the vessel and Flint retained a 2/16 share (Bureau of Navigation 1855a; U.S. Census 1860c; Willams 1879; Wright 1916).

G.L Newman was the second and last ship built by Benjamin Flint. His first vessel, the schooner *H.E. Mussey* was built in 1853 at Black River. *H.E. Mussey* was a slightly smaller ship (120' x 25' 7" x 10' 1" and of 284 14/95 gross tons). Like the *G.L. Newman*, its build was also supported by Reid and Mussey. Flint captained the *H.E. Mussey* until April 1854 at which point he found a buyer for the ship and began building the *G.L. Newman* (Williams 1879; Wright 1916).
The schooner *G.L. Newman* was named for George Lissant Newman. Newman was principle (along with Captain Asa E. Hart) in the firm Hart, Newman & Company, grocers and ship chandlers at the foot of Lloyd Street in Buffalo, New York (Cray 1838; Thomas & Lathrops 1855). Newman was born 16 July 1816 in Newark Upon Trent, Nottinghamshire, England. At the age of fourteen he immigrated to Buffalo and worked as a clerk at Joy & Webster grocers and ship chandlers, the predecessor to his firm (*Richmond Times-Dispatch* 1913).

Figure 2. Henry Ephraim Mussey

On 15 August 1855, Reid, Mussey and Flint, sold *G.L. Newman* to 38-year-old Basil L. Spangler of Cleveland. The ship was registered at Cleveland for this change in ownership. Cleveland became its new home port, but Captain Benjamin Flint remained its Master (Bureau of Navigation 1855b). Spangler was a dry goods and produce merchant, President of B.L. Spangler & Co. in Cleveland (Boyd 1857; Spear, Denison & Co. 1856; US Census Bureau 1860b). *G.L. Newman*'s arrival with grain from the port of Chicago was recorded at Buffalo on

17 September 1855 when the ship delivered 17,000 bushels of corn for S.H. Fish. Once unloaded the schooner cleared for Cleveland to collect 490 tons of coal for Milwaukee. At Milwaukee it took aboard 15,500 bushels of wheat which was delivered to Buffalo on 14 October for Harrison & Chapin. On its next trip west, the vessel was weather bound at Beaver Island on 30 October. When the ship cleared Milwaukee on 8 November with 325 barrels of flour and 14,270 bushels of wheat, newspapers reported Captain F. Wolf in command. This change in Masters went unrecorded in the ship's documentation. *G.L. Newman* remained active through the end of November (*Buffalo Courier Express* 1855a, 1855b; *Buffalo Daily Republic* 1855; *Cleveland Daily Herald* 1855a, 1855b; *Milwaukee Sentinel* 1855a, 1855b; *Oswego Palladium* 1855).

Figure 3. George Lissant Newman (*Richmond Times-Dispatch* 1913).

Captain Wolf remained in command of *G.L. Newman* through the 1856-season. Arrivals were recorded at Chicago, Milwaukee, and Buffalo during the season. When the ship arrived at Milwaukee from Buffalo on 23 September 1856 it arrived with 25 tons of pig iron, 25 tons of marble, 6,000 fire bricks, 1,200 kegs and 60 boxes of power, 186 tons of coal, 10 barrels of marble dust, 40 barrels of fire clay ,and 200 tons of railroad iron for the Milwaukee & Mississippi Railroad (*Buffalo Daily Republic* 1856a, 1856b; *Daily Milwaukee News* 1856; *Milwaukee Sentinel* 1856). On 27 October while on its upbound trip on Lake Huron with coal, the *G.L. Newman* collided with the brig *Sultan* off Middle Island near Presque Isle, Michigan. The accident caused $1800 in damage to *G.L. Newman*'s hull and the loss of $200 in coal when 70 tons of the cargo was jettisoned overboard. As a result of this collision, the owners and Captains of vessels sailing on the Lakes petitioned the government for a lighthouse on Middle Island (*Buffalo Commercial Advertiser* 1857; *Buffalo Daily Republic* 1857). It should be noted that a lighthouse for this location wasn't recommended by the U.S. Lighthouse Board until 1896, and it wasn't constructed until 1905.

The ship was repaired and put up for sale. On 5 March 1857 a new enrollment was entered at the port of Milwaukee for change of owner and Master. *G.L. Newman* was sold to John W. Jones of Racine, Wisconsin and Jones became sole owner and Master. Racine became the ship's new home port (Bureau of Navigation 1857a). Jones was a career mariner, born in 1823 in Wales (US Census 1850, 1860f). Six days later, another document was taken out for the ship redefining the ownership arrangement as John W. Jones with 1/2 share, John P. Williams with 1/4 share and Hugh W. Jones with 1/4 share. All owners resided in Racine. Racine remained the ship's homeport and J.W. Jones its Master (Bureau of Navigation 1857b).

On 22 May 1857, while sailing between Bois Blanc and Mackinac Island in the Straits of Mackinac the *G.L. Newman* went ashore in fog. The ship was released soon after at a cost of $100. Little is known about the ship's routes in 1857. Only one clearing at Milwaukee was recorded with 16,170 bushels of wheat bound for Collinwood, Canada West (*Buffalo Post* 1858; *Cleveland Daily Herald* 1857; *Milwaukee Sentinel* 1857).

G.L. Newman wintered over in Racine (*Milwaukee Sentinel* 1858). The vessel carried primarily corn from Chicago to Buffalo, Oswego, and Ogdensburg, New York throughout 1858-season. On 5 December 1858, the ship called at Cleveland to solicit a river pilot for its trip east to Ogdensburg. David Allen Kiah, a shipwreck survivor from the wreck of the *Black Warrior* that went ashore off Long Point in a blinding snowstorm, needed a ride home to Ogdensburg and was taken onboard in the pilot role. *G.L. Newman* returned to Racine after this trip and was put in winter quarters (*Buffalo Daily Republic* 1858a, 1858b; *Buffalo Courier* 1858a, 1858b; Mansfield 1899; *Milwaukee Sentinel* 1858; *Racine Journal* 1858a).

While in winter quarters the vessel was seized for default on its mortgage. In 1855 and during his ownership of the vessel, the ship's second owner Basil L. Spangler delivered $10,750 to H.L. Massey but defaulted on the remainder of the loan which amounted to $2,817. This mortgage was sold to the Bank of Racine, who put a lien on the vessel and forced its sale on 28 December 1858 (*Racine Journal* 1858a, 1858b).

The ship was purchased by the Oconto Lumbering Company through public auction. A new enrollment for the *G.L. Newman* was entered at the port of Milwaukee on 6 April 1859 by A.R. Gray, of Racine, Secretary of the Oconto Lumbering Company. Racine remained the ship's home port and Captain J.W. Jones remained its Master. Interestingly, the ship's description was updated from having two to three masts and it is not known when this rigging change occurred (Bureau of Navigation 1859; *Racine Journal* 1858b). In the early part of the season, *G.L. Newman* brought mixed lumber products from Oconto to Milwaukee and in October the vessel carried corn from Chicago to Buffalo. While entering Racine on 3 December, the schooner struck and carried away the lighthouse on the north pier. The Racine Harbormaster demanded

that the captain and the owners of the ship pay for damages (*Buffalo Daily Republic* 1859; *Milwaukee Sentinel* 1859; *Racine Democrat* 1859).

In May the vessel brought corn from Chicago to Buffalo and upon delivery of the cargo, it cleared Buffalo light on 11 May 1860 bound for Oconto. Captain Jones was recorded at its helm (*Buffalo Courier* 1860a; *Buffalo Post* 1860a; *Milwaukee Sentinel* 1860a). In June *G.L. Newman* delivered lath, lumber, shingles, posts, and bolts to Racine from Kewaunee under the command of Captain Davis. This change in Master however is not shown in the vessel's documents (*Oconto Pioneer* 1860; *Racine Journal* 1860a). Beginning in July and continuing through the end of October, the schooner made near monthly trips to Buffalo from Chicago, carry wheat (*Buffalo Courier* 1860b; *Buffalo Post* 1860b; *Cleveland Daily Herald* 1860; *Daily Milwaukee News* 1860a; *Milwaukee Sentinel* 1860b; *Racine Journal* 1860b). When the ship returned east on 8 November it delivered 20 barrels of apples to Milwaukee from Buffalo before continuing to Racine. The schooner was home for only one day, long enough to load 16,000 bushels of wheat and clear for a late season run to Buffalo. However, on 17 November the ship was detained at Detroit for two days to wait out a southwest gale. The vessel arrived in Buffalo on 20 November and put up for the winter there (*Daily Milwaukee News* 1860b; *Milwaukee Sentinel* 1860c, 1860d, 1860e, 1860f; *Racine Journal* 1860c, 1860d, 1860e).

Figure 4. Gurdon Chapman

On 8 April 1861 a temporary enrollment was taken out for the ship at the port of Buffalo. Over the winter months Gurdon Chapman of Norwich, Connecticut purchased the ship and became *G.L. Newman*'s sole owner. Its home port was changed to Norwich. However, the ship remained in Great Lakes service and Captain J.W Jones continued as its Master (Bureau of Navigation 1861). Gurdon Chapmen was born in 1792 in North Stonington, Connecticut. He was a wealthy

grain merchant, who also served as director of several banks and as Mayor of Norwich from 1843-1845 (Caulkins 1845; U.S. Census Bureau 1860d). From April through July, the vessel carried wheat from Milwaukee, Chicago and Racine to Buffalo. In August it hauled corn, but in September it returned to wheat, making one trip each month through the end of November. Minor repairs were undertaken during the season which likely reduced its masts from three to two although this was unrecorded in the ship's documentation. The vessel wintered over in Racine (*Buffalo Post* 1861a, 1861b, 1861c; *Buffalo Courier* 1861a, 1861b, 1861c, 1861d, 1861e, 1861f, 1861g; *Cleveland Daily Herald* 1861; *Daily Milwaukee News* 1861; *Milwaukee Daily Sentinel* 1861a, 1861b; *Racine Journal* 1861).

G.L. Newman came out of winter quarters, and was active again in mid-May 1862 hauling wheat from Racine to Buffalo. The ship brought several other cargoes to Buffalo during the season, but primarily ran between Milwaukee and Kingston, Canada West with wheat (*Buffalo Post* 1862; *Cleveland Morning Leader* 1862; *Milwaukee Sentinel* 1862a, 1862b, 1862c, 1862d, 1862e, 1862f, 1862g).

A new enrollment was entered at the port of Milwaukee on 9 April 1863 for the *G.L. Newman* for a change in owners and districts. The new owner arrangement was a partnership of Racine men - Isaac Mortimer Hill owned a 2/3 share and Captain Watson Spencer owned a 1/3 share. Hill was a dealer in coal and wood, and Spencer was a career mariner. Racine was reestablished as the ship's home port. Captain Spencer became its new Master. With this document the ship is recorded as having returned to a two-masted configuration (Bureau of Navigation 1863; U.S Census 1860e, 1880). After filing the paperwork at the Customs Office, the ship loaded wheat at Milwaukee for Kingston. From September through November the ship brought wheat to Buffalo (*Buffalo Post* 1863; *Milwaukee Sentinel* 1863a, 1863b, 1863c).

On 12 April 1864 the ship came out of winter quarters, cleared Racine and made its way to Milwaukee where a temporary enrollment was taken out on 14 April signaling an upcoming change in district for the vessel. Its home port was updated to Chicago. Ownership percentages and measurements remained the same (Bureau of Navigation 1864a). The ship loaded wheat on 21 April for Oswego. Before the schooner could clear the port, it was waylaid with foul weather which delayed departure until 29 April. The vessel arrived in Oswego on 11 May (*Milwaukee Sentinel* 1864a, 1864b, 1864c, 1864d; *Daily Palladium* 1864). A permanent enrollment was entered at the port of Chicago 27 June 1864, having arrived home (Bureau of Navigation 1864b). From September through the close of navigation in late November, *G.L. Newman* brought wheat to Buffalo from Chicago. It returned to Chicago with coal collected at Erie, Pennsylvania (*Buffalo Post* 1864a, 1864b).

In the first months of the 1865-season, *G.L. Newman* traded between Chicago and Buffalo. While passing Detroit in June 1865, the ship collided with the schooner *Ithaca* in the St. Clair River. Each vessel sustained $200 in damages (*Detroit Free Press* 1866; *Milwaukee Sentinel*

1865a, 1865b). After repair, the schooner was remeasured in conformity with the Congressional Act of 6 May 1864. New measurements were calculated as 122.3 feet long, 26.3 feet breath and 10.9 feet depth of hold. Its tonnage was reported as 249.47 tons. A new permanent enrollment was entered at the port of Chicago on 17 July capturing this information and Captain William Vance was appointed as the ship's Master (Bureau of Navigation 1865). *G.L. Newman* was loaded with 16,000 bushels of wheat and cleared Chicago on 20 July bound for Buffalo. Arrivals at Buffalo were recorded on 2 August and 11 September. When the ship returned west in October, it brought 200,000 board feet of lumber and 82,000 feet of lath from Oconto, Wisconsin, delivering the load to Milwaukee on 14 October (*Buffalo Post* 1865; *Courier & Republic* 1865a, 1865b*; Milwaukee Sentinel* 1865c).

G.L. Newman was sold over the winter months. A new enrollment was entered at the port of Milwaukee on 3 April 1866. The ship was sold for $7,000 to Abraham Bettridge and Nicholas M. Le Prevost. Bettridge was born in 1819, emigrated from England in 1847, and was an ice dealer. Le Prevost was a career mariner. Both men resided in Racine and were equal partners in the vessel. Captain Le Prevost took over the helm and Racine again became the schooner's home port (Curtis 1890; Bureau of Navigation 1866; U.S. Census Bureau 1870). Information about the ship's early season is not known. In July the schooner brought corn to Buffalo from Chicago (*Courier & Republic* 1866a, 1866b). During the last week of August 1866, *G.L. Newman* entered the Miller Brothers Dry Dock in Chicago to receive general repairs which kept the vessel in port for several days. On 10 September the ship arrived at Buffalo with corn from Chicago and cleared a few days later with 470 tons of coal for its trip west. The schooner made one more trip to Buffalo with grain, returning with coal to Chicago in late October. *G.L. Newman* wintered over at Racine (*Chicago Tribune* 1866a, 1866b; *Courier & Republic* 1866c, 1866d, 1866e, 1866f, 1866g, 1866h; *Milwaukee Sentinel* 1866a, 1866b, 1866c).

Due to a change in managing owners, *G.L. Newman* received a new enrollment on 13 April 1867. The new document switched Nicholas M. Le Prevost for Abraham Bettridge. All else remained the same (Bureau of Navigation 1867). On 30 June 1867, *G. L. Newman* collided with the propeller *Ira Chaffee* while in the river in Milwaukee and sustained $1,500 in damages. The ship was repaired at Miller Brothers Dry Dock in Chicago (*Detroit Free Press* 1867; *Milwaukee Sentinel* 1867a). The schooner was back in service by the end of July and traded locally on Lake Michigan, bringing mixed lumber to Milwaukee from Menominee (*Daily Milwaukee News* 1867a; *Milwaukee Sentinel* 1867b). In August, September and October *G.L. Newman* took wheat from Chicago to Buffalo, returned west light picking up lumber enroute at Oconto. The lumber was dropped off at Milwaukee. From there it carried on to Chicago to collect another grain cargo. At the end of October on the trip up Lake Michigan to Chicago, its mizzenmast unstepped and the spar was lost overboard in a gale. Following replacement of the mast, the ship was put in winter quarters at Racine (*Daily Milwaukee News* 1867b, 1867c; *Milwaukee Sentinel* 1867c, 1867d, 1867e, 1867f, 1867g, 1867h).

For first half of the 1868-season, *G.L. Newman* remained on Lake Michigan hauling lumber between Menominee and Milwaukee. It completed multiple trips per month June through August. On 25 August 1868, the vessel was unloaded at Milwaukee and cleared light for Chicago where it picked up grain for Oswego. Several trips were made with grain before the schooner was put up for the winter in late-November at Racine (*Daily Milwaukee News* 1868a, 1868b, 1868c, 1868d, 1868e; *Milwaukee Sentinel* 1868a, 1868b, 1868c, 1868d, 1868e, 1868f, 1868g, 1868h; *Racine Journal* 1868).

At the onset of the 1869-shipping season, on 10 April a new enrollment was entered for the schooner at the port of Milwaukee for a change in the ownership arrangement. Reuben Doud of Racine paid $2,000 to join Le Prevost and Bettridge as equal 1/3 owners. Doud was born in 1830 in New York. He moved to Green Bay in 1849 where he became a boat owner and operator on Lake Winnebago and the Fox River. In 1868 he moved to Racine where he operated a lumber business and later became the city's mayor. *G.L. Newman*'s home port remained Racine and Captain Le Prevost remain Master (Bureau of Navigation 1869; *Milwaukee Sentinel* 1869a; *Oshkosh Weekly Times* 1877; U.S. Census Bureau 1870). On 30 June 1869, seaman William Millington fell overboard while attaching a boom pennant. Luckily as he fell, he held onto the pennant was able to be hauled back onboard (*Racine County Argus* 1869). From September through late November, the ship made multiple trips each month bringing lumber to Racine from Suamico, Wisconsin (*Milwaukee Sentinel* 1869b, 1869c, 1869d, 1869e, 1869f, 1869g).

G.L. Newman came out of winter quarters and brought its first load of lumber for the season from Green Bay to Racine on 30 April 1870. A labor strike for increased wages left the schooner without a crew in May as the entire crew, when denied their demands, quit. Lumber was acquired from Oconto and delivered at Racine in June. Records of further trips were not found. Newsprint in mid-December lists *G.L. Newman* as wintering in Racine (*Milwaukee Sentinel* 1870; *Racine County Argus* 1870a, 1870b, 1870c; *Racine Journal* 1870).
On 16 June 1871, *G.L. Newman* hauled shingles to Milwaukee from Suamico. It unloaded and cleared the same day light for Chicago. It’s not known if the ship picked up grain for a run to the eastern lakes as the record of its clearing of the port of Chicago was not located. Shingles were delivered to Milwaukee from Suamico in August and September (*Milwaukee Sentinel* 1871a, 1871b, 1871c).

In early October strong winds, extreme heat and dry conditions fueled several forest fires across the region. Large fires burned unabated for days. The most well-known fire that consumed large sections of Chicago from 8 October through 12 October became known as the Great Chicago Fire and the fire that burned through northern Wisconsin became known as the Peshtigo Fire. Many other forest fires burned days before, and other fires flared up after these famous events. As a result, dense smoke hung over Green Bay. *G.L. Newman* departed Suamico on 8 October. Sailing nearly blind through the heavy smoke, Captain Le Provost became disoriented, made an

error in navigation and at 9 PM went ashore on southeast point of Green Island known as Green Island Reef (*Buffalo Commercial Advertiser* 1871; Hall 1871; Mansfield 1899; *Milwaukee Sentinel* 1871d). Green Island Lighthouse Keeper Samuel P. Drew helped the crew to the island and provided shelter in the lighthouse. The crew remained on the island for more than a week salvaging what they could from the schooner. On 19 October Captain J.F. Trowell of the schooner *Saginaw* reported that the *G.L. Newman* was full of water, the cabin had washed away, and presumed the ship would be abandoned (*Green Bay Advocate* 1871; Wardius 2003).

Attempts were made to remove the vessel but ultimately this effort proved unsuccessful, and the vessel was left stranded. Hope remained that the hulk could be removed and as such, it stayed on the insurance rolls through 1873. On 31 March 1874, a copy of *G.L. Newman*'s enrollment was surrendered at the port of Milwaukee. The cause of surrender was reported a "total loss" (BLU 1872, 1873; Bureau of Navigation 1873; Hall 1871).

Site Description

The remains of the schooner *G.L. Newman*, in the waters of Green Bay 500 feet south of the southeast shoal of Green Island (45°03.024' N, -87°29.312' W). The vessel points bow toward the shoal and sits on a heading of 82 degrees, in 8 to 20 feet of water. The wreckage was reported to Wisconsin Historical Society maritime archaeologists by Tim Wollak and his 6-year-old daughter, Henley Wollak. They came across fragments of the wreck while on a father-daughter fishing expedition in August 2023. Though its upper deck, rigging, and machinery were lost following the sinking or were broken by years of wave and ice action along the Green Island Shoal, major structural components of the vessel remain, including its keel, keelson, several hull fragments and stempost. Given the wreck dimensions, location, and a comparison of vessel losses in the vicinity based on historic newspaper accounts, the vessel remains were determined to likely belong to the schooner *G.L. Newman*.

A survey of the *G.L. Newman* was conducted in May 2024 by maritime archaeologists and volunteers from Wisconsin Historical Society. A bilge fragment of the vessel's lower hull sits on an orientation of 150 degrees. A baseline was stretched along the top of the keelson. The other shipwreck pieces were referenced in distance and direction to this hull fragment. The bilge measures 95 feet long and is 20 feet at its widest. The keelson assembly is comprised of keel, keelson, rider, and sister keelsons on both port and starboard sides of the keelson. The keelson extends from 0 to 70 feet on the baseline. The keelson is 0.8 feet wide and 1.6 feet thick. The rider is 0.8 feet wide and 0.4 feet thick. The sister keelsons measure 0.6 feet wide and 0.3 feet thick. The sister keelsons are present beginning at 9.0 feet along the baseline and are extant on both sides of the keelson. The starboard side sister keelson continues to 69 ft on the baseline where the port side sister keelson continues to 31 ft on the baseline ending 4 feet forward of the centerboard void. The vessel's centerboard was offset to the port side and the gap for the centerboard to pass through the hull was in the sister keelson. The through-hull gap begins at 35

feet on baseline and the gap extends 28 feet aft. The end of the centerboard gap is not flush, but damaged.

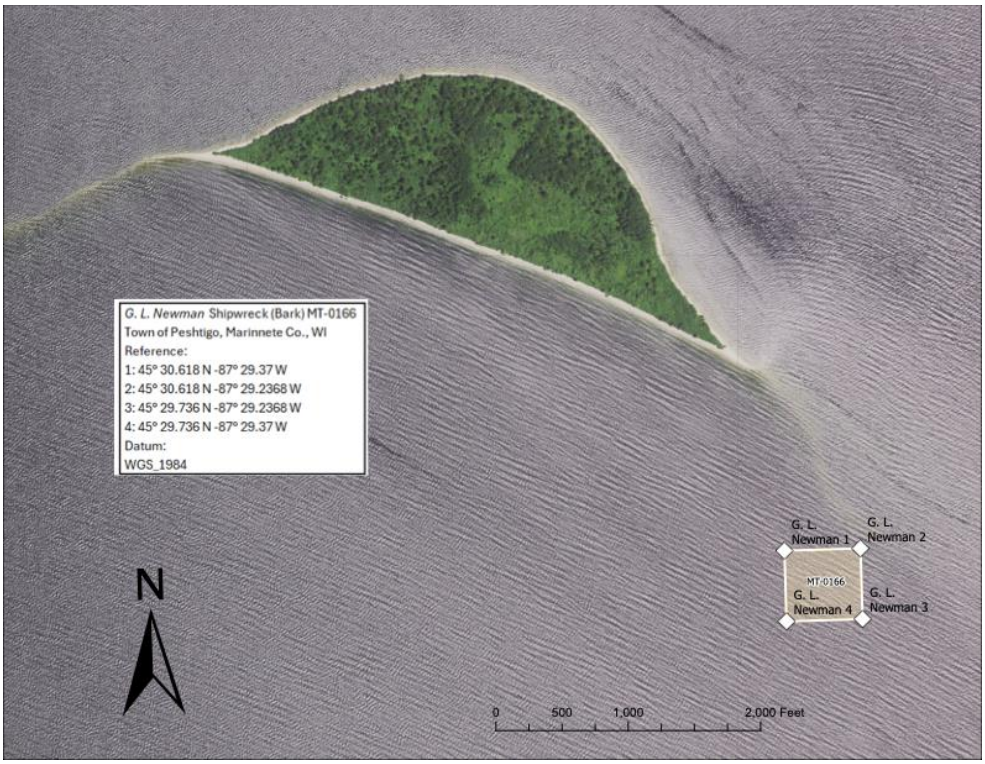

Figure 5. Location of the *G.L. Newman* site

Steps are cut into the keelson assemblance at 8 feet, 13 feet and 52 feet along the baseline. Because of the degraded nature of this fragment, it is difficult to determine if these were for deck stanchions or masts. All three steps measure 2 feet long, 0.6 feet wide with a depth of 0.4 feet. The first two steps are cut into the rider keelson which sits on top of the keelson. The third is offset and carved into the starboard side sister keelson.


Figure 6. Tim and Henley Wollak (Tim Wollak)

Double framed with individual futtocks measuring 0.3 feet wide and 0.5 feet thick and spaced 2 feet with the gap between frames of 1.4 feet. Ceiling planking that makes up the floor measures

varies with some measuring 1.3 feet and others 0.9 ft wide, alternating in widths. The thickness of the ceiling planking is 0.2 feet. Four planks of the outer hull extend from the bottom of the ship aft of the keelson break. These planks measure 1.1 feet wide and 0.2 feet thick. Fifteen feet from the starboard side of the fragment and buried in the sand are multiple pieces of wire rigging that extends along a 25-foot area.

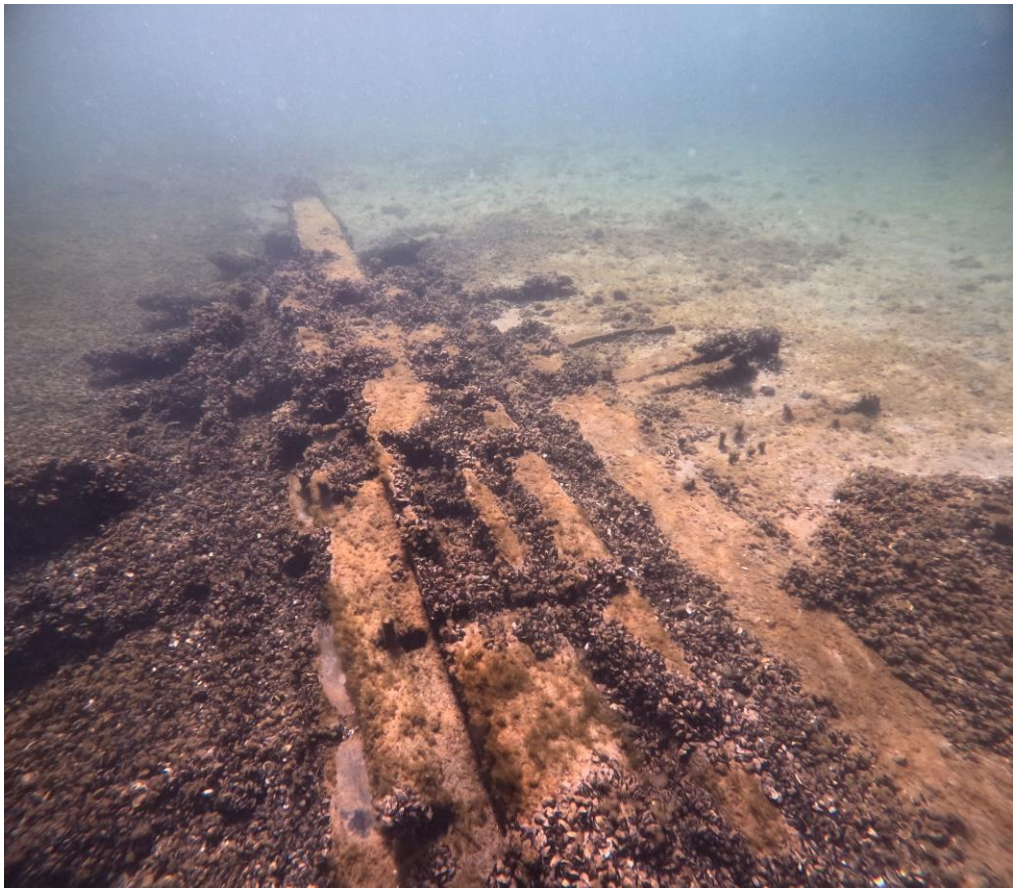

Figure 7. *G.L. Newman*'s keelson with mast step

The ship's stempost and deadwood that have separated from the keel as well as portions of 3 cant frames at the bow. This piece is located 180 feet to the WSW from the keelson fragment. The stem post section measures 28.1 feet in length overall. The stempost is 9 feet tall and 1 foot wide. Behind the stempost is the deadwood which is also 9 feet tall and measures 1.3 feet wide. The two timbers taper toward the bow to form the vessel's cutwater. Portions of the keelson assembly remain attached to the stempost assembly. A portion of the sister rider which measures 3.2 feet long and is 0.8 feet thick. Also present is a fragment of the keelson which measures 18 feet long. The keelson is 1.3 feet thick and 1.2 feet wide. The keel fragment is 25.8 feet long, 1.0 feet thick and 1.2 feet wide. Three cant frames remain attached to the fragment located at 9.5 feet, 11.5 feet, and 14.9 feet on center, measured from the leading edge of the stempost. The first two cant frames measure 0.8 feet wide and 0.6 feet thick. The third cant frame measures 1.0 feet thick x 0.8 feet wide.

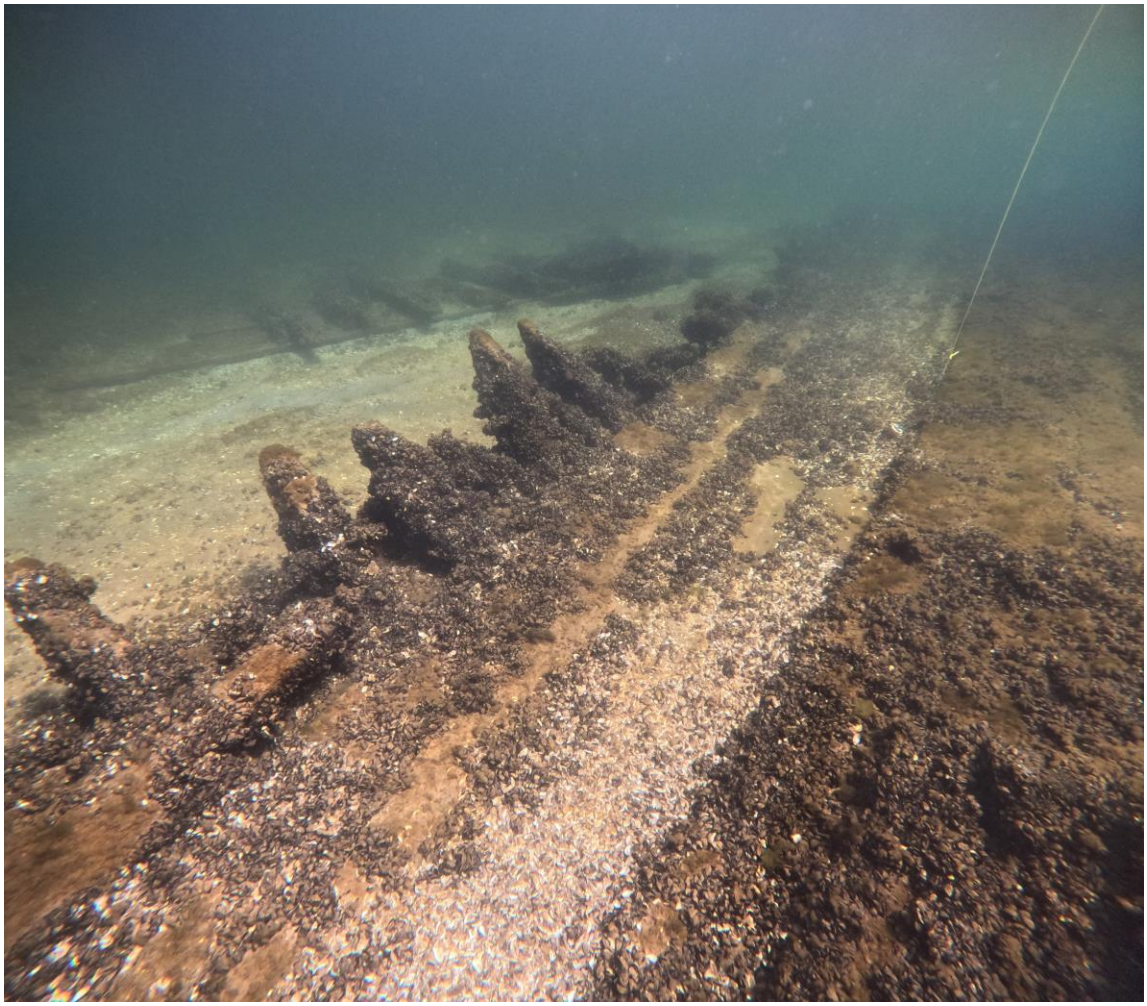

Figure 8. *G.L. Newman*'s hogging truss

Two sections of hull lay 165 feet to the south southeast from the keelson fragment. The fragments sit at a 60-degree angle to each other. A baseline was stretched along the center of each piece, and both baselines shared the same zero point.

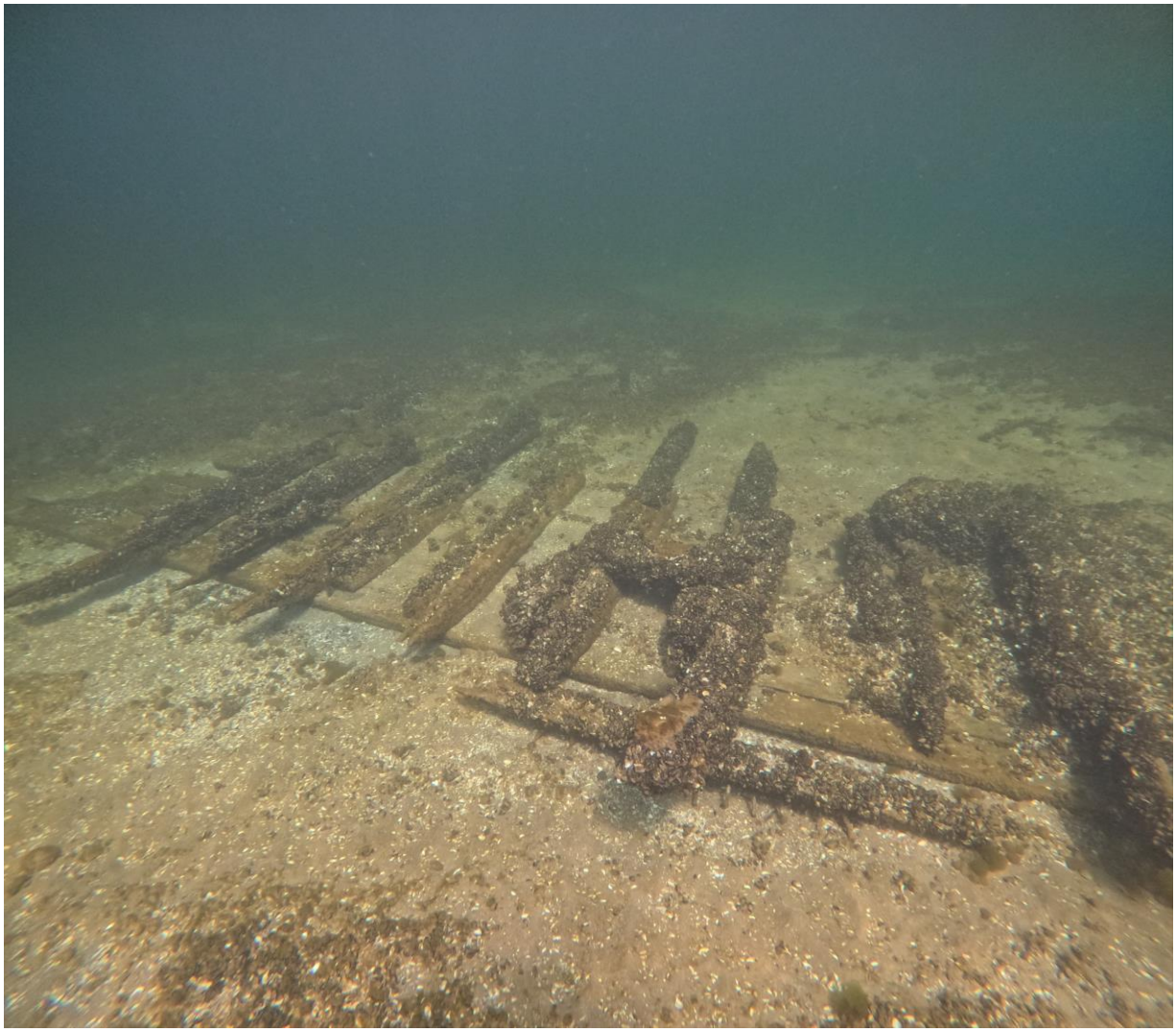

Figure 9. *G.L. Newman*'s small hull fragment

The larger hull fragment measures 79 feet long with a maximum width of 10 feet. It represents a portion of the aft starboard side hull from the deck shelf downward including the first futtock back to the starboard quarter. It is laying on its outer hull planking in the sand with frames and ceiling planking up. There is evidence of multiple repairs to the frames with up to three, four and five futtocks per set. Typically, the futtocks measure 0.4 feet wide and 0.5 feet thick with a space of 2 feet and 1.2 feet between sets outside of areas of repair. Ceiling planking measures 0.9 and 1.0 feet wide and 0.3 feet thick. Outer hull planking varied from 0.5 feet to 0.8 feet wide and is 0.15 feet wide. Of the six extant outer hull planks, at the deck shelf, the board was 0.8 feet wide and at the turn of the bilge the board was 0.7 feet wide. Other planks were consistently 0.5 feet wide. A lumber port is located at 39 feet on the baseline. It measures 2.5 feet long and 0.9 feet wide. The thickness could not be determined with its position on the bottom. The lumber port is metal framed and lined and heavily colonized with quagga mussels. A portion of the vessel's wooden hogging truss remains attached to the ceiling planking from 21 feet to 42 feet on the baseline. It is 1.5 feet wide overall and consists of 3 boards each of 1.0 feet wide.

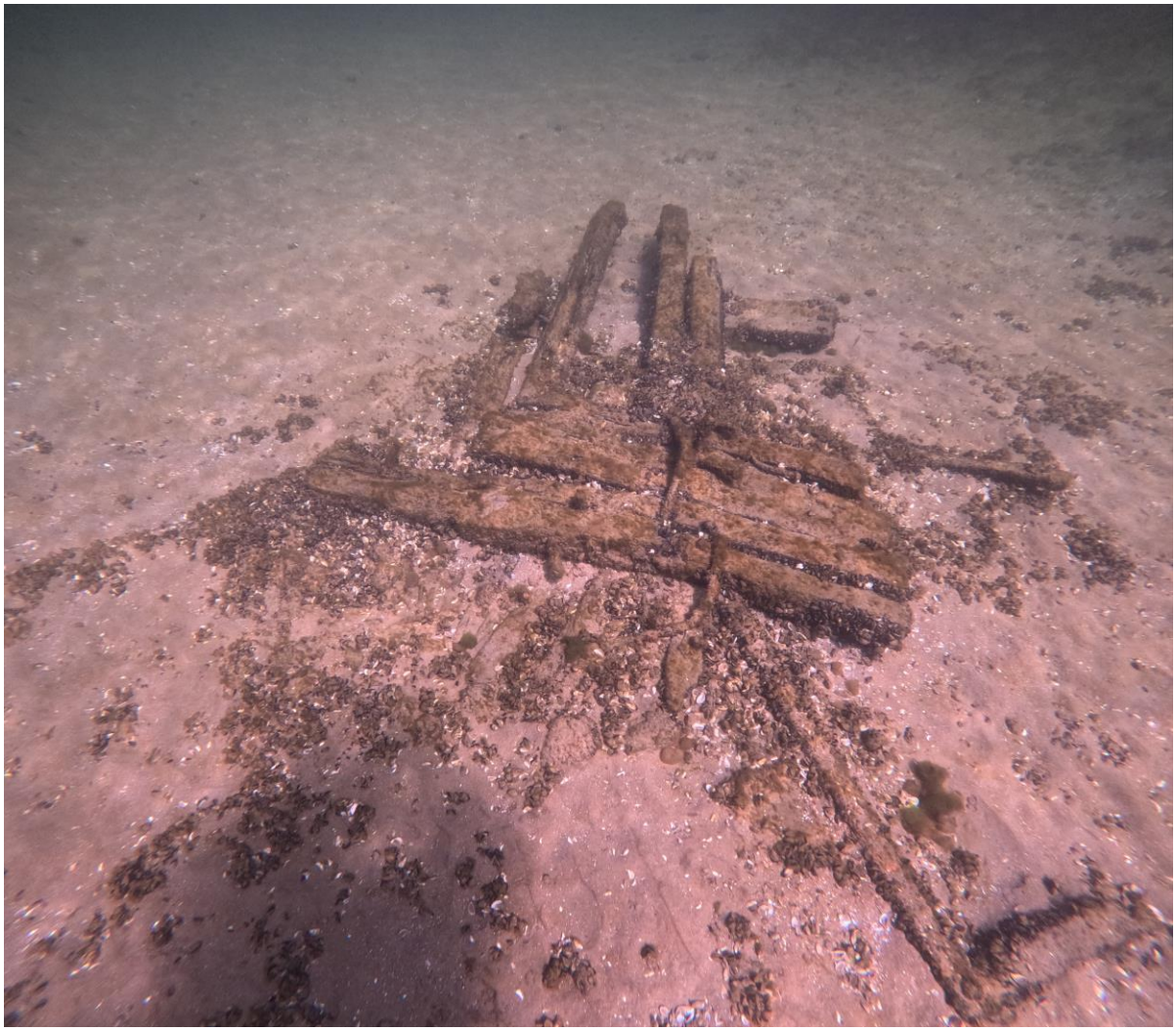

Figure 10. *G.L. Newman*'s hatch combing

The smaller hull fragment measures 30.5 feet long with a maximum width 10.2 feet. It is laying on its outer hull planking in the sand, with frames up. It contains 8 frames, of which one futtock (that is facing the other larger hull fragment) contains a portion of the turn of the bilge. The frames associated with this piece are all double framed. Individual futtocks measure 0.3 sided and 0.6 moulded with 2-foot spacing and 1.4 feet between frames, but on occasion 1.6 feet between frames. Of the frames, the futtock on the left was the longer of the set, except on one occasion where the longer was on the right which is likely evidence of a repair. No ceiling planking remains with this fragment. Seven outer hull planks remain attached under the frames. The outer hull planking measures 0.6 feet wide and 0.15 feet thick. The ceiling spikes are 0.04 feet square. The outer spikes are 0.03 feet square. No evidence of roves was located.

A small piece that represents a repaired portion of the hull side sits 115 feet to the Southeast from the keelson fragment. Overall, the piece measures 7.2 feet long and 5.7 feet wide. It

consists of four futtocks side by side measuring 0.3 feet, 0.5 feet, 0.5 feet and 0.6 feet wide and are 0.4 feet thick. These are attached atop six pieces of planking that measure 0.5 feet, 0.6 feet, 0.6 feet, 0.9 feet, 0.4 feet and 0.6 feet wide. The fragment rests on top of a broken portion of the hatch combing. The combing measures 0.2 feet thick and 0.2 feet wide. One end is 2.1 feet long and the other end is 1.4 feet long matching at a right angle with a mitered corner.

Individual disarticulated boards are scattered throughout the 9.15-acre debris field. A concentration of several boards is located 220 feet and east northeast from the keelson. Among the boards in this debris concentration is a singular hanging knee.

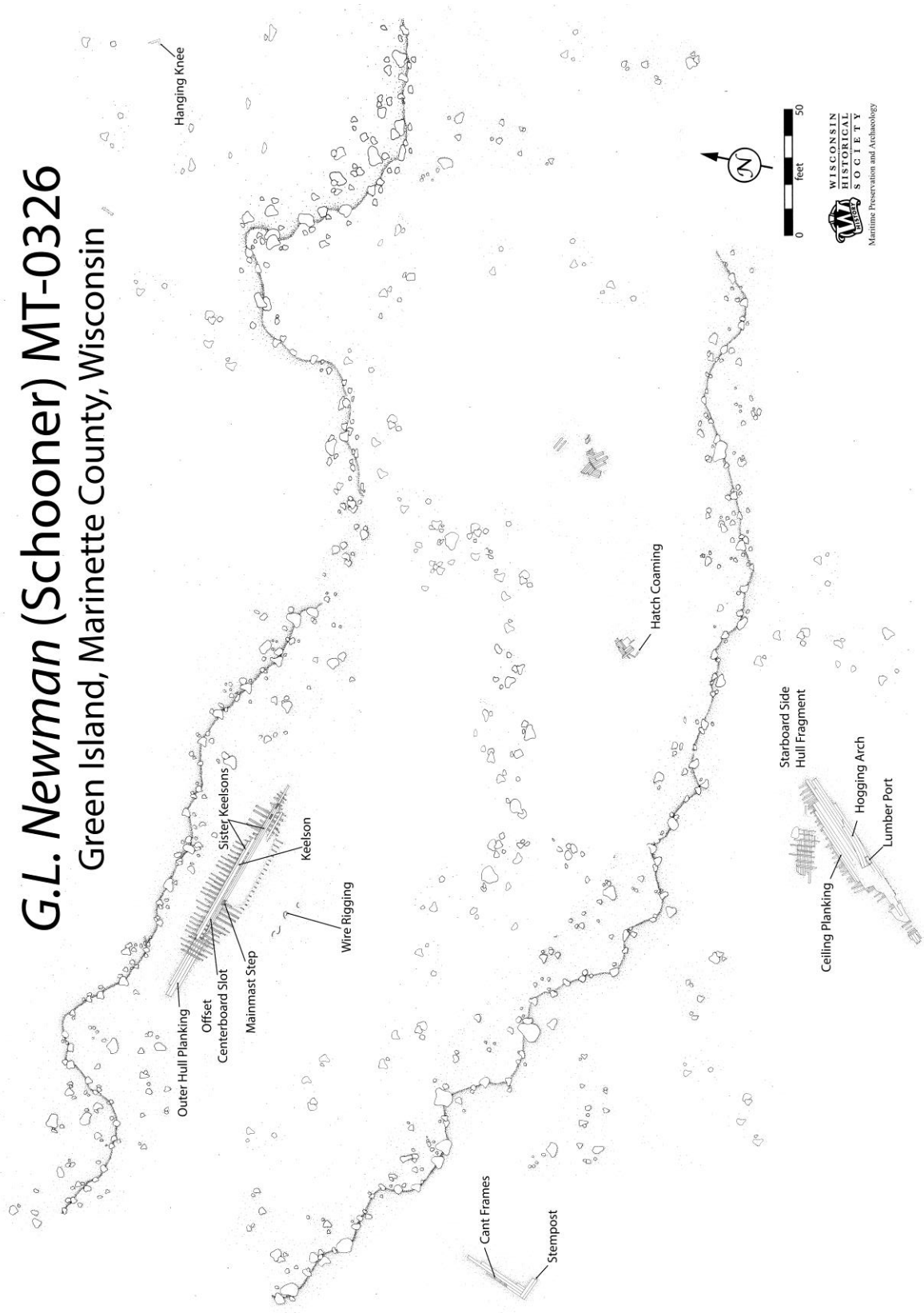

Figure 11. Site Plan of *G.L. Newman*

CHAPTER THREE
SCHOONER *GREY EAGLE*

The schooner *Grey Eagle* (Official number U.S.10341) was built in 1857 by J.W. Banta, principal shipwright at Bidwell, Banta & Co. in Buffalo, New York. The vessel was built for use in the grain trade, where it carried bushels of various grains from Chicago or Milwaukee to Buffalo returning to Lake Michigan with coal from Cleveland. The ship was built at a cost of $17,000 and was the first of six schooners launched by the yard in 1857 (as well as two propellers and two steamers). It was sister ship to the identically constructed schooner *Sea Bird* which came off the blocks shortly afterwards. *Grey Eagle* was constructed with one deck, two masts, a plain head, and square stern. It was built to the dimensions: 137' 10" x 26' 7" x 11' 2" with a registered tonnage of 380 91/95 gross tons. Its first enrollment was entered at the port of Buffalo on 13 May 1857, and it was given an A2 insurance rating (*Buffalo Daily Courier* 1857; 1858b; Bureau of Navigation 1857).

Grey Eagle was placed among the fleet of Lake Navigation Company of Buffalo, New York, with Henry C. Walker, President of the company, listed as owner and Master. Coming into the 1857 season, Lake Navigation Company invested in new construction of four sailing ships from Bidwell, Banta & Co., three vessels of 400 tons constructed at the F.N. Jones shipyard, and three more under 300 tons at built at B.B. Jones shipyard (*Detroit Free Press* 1856). By the fall of 1857 however, the commercial prosperity of Lake Navigation Company began to decline as waves from the Panic of 1857 began to hit the shores of the Great Lakes. Under the weight of construction debt and lack of business prospects, the Lake Navigation Company folded shortly into the 1858 new year, and the company's stock and assets were placed in the receivership of Buffalo lawyers Stephen V.R. Watson, Elbridge G. Spaulding, and Gibson T. Williams. At 11AM on 13 April 1858, *Grey Eagle*, along with the company's sixty-one sailing vessels and five steam tugs, were auctioned off during a public sale held at the rotunda of the Merchant's Exchange in Buffalo (*Buffalo Daily Courier* 1858a). The schooner was offered for $17,000 or cash value of $16,000 but sold to Henry Roop of Buffalo for $11,000 with an option to pay off the bill over four years (*Buffalo Daily Courier* 1858b; *Daily News* 1858).

Grey Eagle's enrollment document was surrendered on 15 April 1858 at the port of Buffalo for the change in owner and a new entry was made indicating Henry Roop as sole owner (Bureau of Navigation 1858). Roop worked as a commission merchant, as well as an inspector and packer of meat and fish in Buffalo. His office was located on Dayton Street between Main and Prime Streets (Hunter & Ostrander). In April 1858, *Grey Eagle* collided with the schooner *Sylph* while off Erie, Pennsylvania on Lake Erie. The *Sylph*'s bowsprit was carried away, and *Grey Eagle* sustained $100 in damages. The ship was repaired and immediately returned to service (*Buffalo Commercial Advertiser* 1859).

Several incidents occurred during the 1859-season. In May, the ship grounded in the St. Clair Flats. The vessel was immediately released, but damages cost $670. In June during a gale on Lake Huron, *Grey Eagle* lost its canvas, which required a refit; a $200 loss. In September, the schooner *Barbarian* collided with *Grey Eagle* in the St. Clair Flats causing another $200 in damages. In October, the ship grounded on St. Helena Reef in northern Lake Michigan. The vessel was released but *Grey Eagle*'s cargo of wheat was damaged resulting in a $600 loss. The same month the ship's rudder head was sprung costing another $250 for repairs. On 26 November 1859, the ship was bound from Chicago for Buffalo with a cargo of 15,000 bushels of wheat when it grounded on Port Austin Reef in Lake Huron. Although the vessel and cargo were initially thought to be a total loss, on 6 December, the tug *Relief* pulled the ship free and towed it in for repair (*Buffalo Daily Courier* 1859; *Buffalo Daily Republic* 1859a, 1859b; *Oswego Commercial Times* 1860; *Weekly Chronicle & News* 1859).

A new enrollment document was issued at Cleveland, Ohio, on 6 April 1860 for change of owner and district. John Bacon Lyon of Conneaut, Ohio, became sole owner and Master (Bureau of Navigation 1860). Lyon worked as a forwarding and commission agent in Conneaut. The 1861 Board of Lake Underwriters gave the vessel a valuation of $11,200 and continued the A2 rating, adding a note that the hull was "flat" (Board of Lake Underwriters 1861). In September 1861, the ship grounded on north cape of Maumee Bay on Lake Erie. The schooner was released in short order, but charges for its salvage totaled $100 (*Buffalo Commercial Advertiser* 1862).

A temporary enrollment for *Grey Eagle* was entered at the Chicago Customs House on 4 April 1862 as the ship's papers expired while it was outside of its home district (Bureau of Navigation 1862a). On 19 July 1862, the ship was registered at the port of Milwaukee for a change in owner and homeport. Ownership changed to the partnership of Guido Pfister and Nicholas (Nicolai) Johnson, with the former owning 2/3 and the later owning 1/3 of the vessel (Bureau of Navigation 1862b).

Guido Pfister was a Milwaukee tanner and businessman. He immigrated from Hechingen, Germany to Buffalo, New York, and in 1847 came to Milwaukee. He established a leather store in Milwaukee in 1853 and it later became known as the Guido Pfister Tanning Co. (Bruce 1922; *Milwaukee Journal* 1940). Nicolai Johnson was an experienced lake captain whose home was also Milwaukee. He invested in shares of several vessels throughout this career, and he owned more than one ship with Guido Pfister (Gjerset). Captain Johnson took command of the vessel and he remained at its helm through the 1864-season (Bureau of Navigation 1862b). In early December 1862, *Grey Eagle* grounded off Oswego, New York. Lightering the vessel of its cargo was required, after which, the ship was pulled free by the tug *Hector* (*Daily British Whig* 1862a, 1862b).

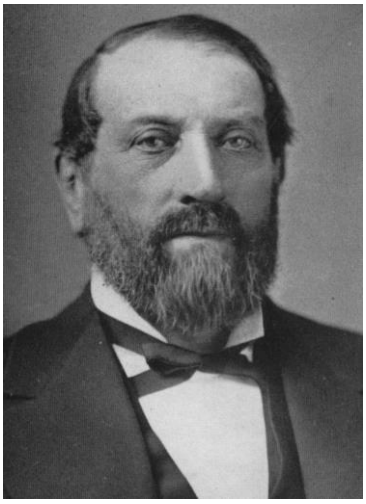

Figure 12. Guido Pfister (Manitowoc County Historical Society)

In 1863, the Board of Lake Underwriters reduced the insurance rating of the ship to B1 and valued the vessel at $11,500 (Board of Lake Underwriters 1863). On 1 December 1863, *Grey Eagle* departed Milwaukee bound for Buffalo with a cargo of wheat. Before reaching the Straits of Mackinac, the ship became caught in a fierce storm that carried away its foremast chainplate and boom. The ship was towed to the Manitou Islands where temporary repairs were made. Then it was brought back to Milwaukee where its cargo was discharged, and further repairs were undertaken (*Buffalo Commercial Advertiser* 1864; *Buffalo Daily Courier* 1863).

At 2AM on 24 November 1864, *Grey Eagle* was sailing through the Straits of Mackinac in route from Buffalo to Milwaukee when it collided with the schooner *Perseverance* resulting in the later vessel sinking with its cargo. *Perseverance* had been wheat laden and bound from Chicago to Ogdensburg. *Perseverance* lost its navigation lights during a storm off the Manitou Islands earlier in the night, but to avoid further delay it continued sailing while displaying only a single white masthead light. The single light's use by the Rules of Navigation was prohibited while underway (*Toledo Blade* 1867). *Grey Eagle* should have been resolved of liability; however, the owners of the *Perseverance* filed a lawsuit over the loss of their ship, first in U.S. District Court for the Eastern District of Wisconsin, in which the action was dismissed. The libellant then appealed to the Circuit Court, where the case was argued on the same evidence. A judgement was made in late 1867 declaring that the defendant was to pay one-half the loss stating that it was the "obligation of the *Grey Eagle* to use all reasonable precautions to avoid a collision" (*Toledo Blade* 1867).

Throughout the litigation process, *Grey Eagle* continued to sail. On 24 August 1865 the ship was re-measurement at the port of Milwaukee and a new enrollment was issued. Its new dimensions were measured at 137 5/10 feet long, with a 26 2/10 feet beam and 10 8/10 feet depth. Its capacity was recalculated at 276.82 tons under the tonnage deck with 10.25 tons allowed for deck enclosures, for a new gross tonnage of 287.07 tons. Captain Jeremiah Tweidy

was entered as the new Master. Guido Pfister remained managing owner at 2/3 share, and Nicholas Johnson retained his 1/3 share of the ship (Bureau of Navigation 1865).

Figure 13. Frederick Vogel (Manitowoc County Historical Society)

Over the winter of 1866-67, the vessel was sold to a consortium that included Pfister's cousin and business partner, Frederick Vogel. Frederick Vogel was also a Milwaukee tanner and businessman. He immigrated from Württemberg, Germany to Buffalo, New York, and finally to Milwaukee in the 1850s and went into business with his cousin, Pfister, as a leather goods purveyor. When he entered the business, the tannery and leather shop became known as Pfister & Vogel Leather Company. For some time, it was largest leather product producer in the region (Bruce 1922; *Milwaukee Journal* 1940).

Grey Eagle's new owner arrangement was Frederick Vogel, Thomas Carl, and Captain J.C. Johnson, all equal 1/3 owners and all based in Milwaukee. On 26 April 1867, a new enrollment was entered at the port of Milwaukee and Captain J.C. (Jacob) Johnson was listed as Master (Bureau of Navigation 1867; Gjerset). In December 1867, *Grey Eagle* went ashore in the Straits of Mackinac. The ship was released but sustained $3,900 in damages. In May 1868 while off Point au Pelee on Lake Erie, *Grey Eagle* sprung a leak that required repair. The bill for service totaled $4,700 (*Buffalo Commercial Advertiser* 1866).

On 5 June 1869, *Grey Eagle* called on the Door County community of Egg Harbor, Wisconsin where it collected 225 cords of wood from Kirtland's dock for delivery to Chicago (*Door County Advocate* 1869a). On 10 July 1869, while bound for an undeclared Green Bay port (likely Egg Harbor) to pick up a cargo of lumber, the vessel was blown ashore on the north point of Whitefish Bay (now known as Cave Point) in Door County, Wisconsin during a southwest gale. During the same storm, *Delaware*, *E.R. Blake*, and *Montauk* went ashore in the vicinity of Whitefish Bay. Following the storm, all other vessels were released. The crew of a nearby ship, the schooner *Yankee Trader*, was able to salvage some items from *Grey Eagle* and

returned them to its owners in Milwaukee. *Grey Eagle* quickly broke to pieces as it was pounded by big seas. The ship was insured for $10,000 in the Republic Insurance Agency of Chicago, on a valuation of $12,500 (*Cleveland Leader* 1869; *Door County Advocate* 1869b; *Milwaukee Sentinel* 1869).

It should be noted that the ship appears as a listing in the 1871 *Classification of Lake Vessels and Barges* indicating that the vessel was repaired in 1870, but the ship does not appear in newsprint and no other information could be located. It is not known if the reference is an error (Board of Marine Inspectors 1871).

Site description

Figure 14. Discovery of the *Grey Eagle* by Door County Adventure Rafting (Matthew Olson).

The remains of the schooner *Grey Eagle* (DR-0323) lie 0.13 miles offshore, in the waters of Lake Michigan 1.95 miles south of Jacksonport, Wisconsin (44° 57.023’ N, 087° 11.159’ W). The vessel points bow toward shore sits on a heading of 270 degrees, in 12 feet of water, with its bow, stern and upper deck structure missing. The wreckage rises 3.5 feet off the sandy lake

bottom. From the turn of the bilge down, 87.5 feet of floors and frames of its lower hull remain relatively intact on an even keel.

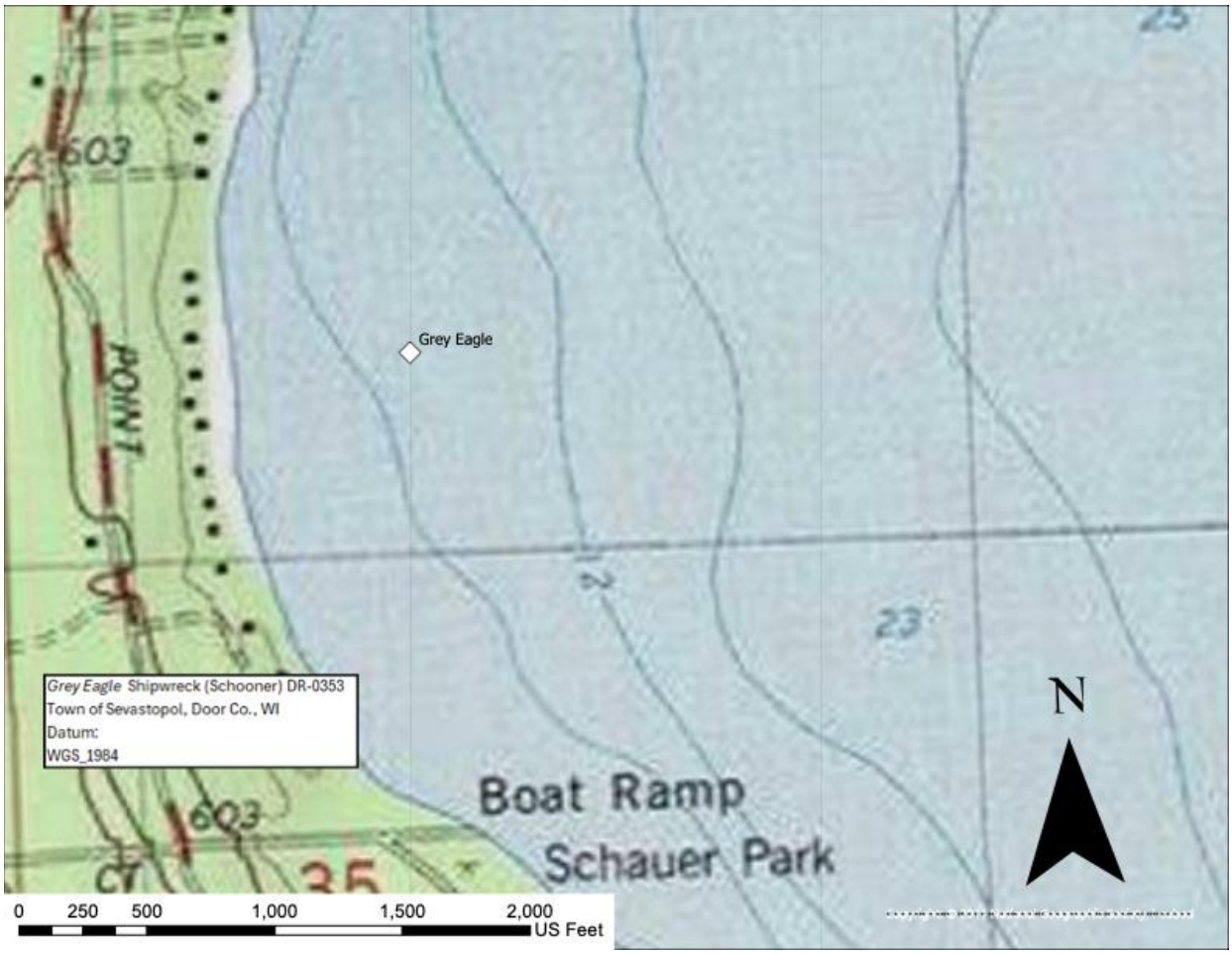

Figure 15. Location of the *Grey Eagle* site

The wreckage has supposedly been known to local cottage owners but was brought to the attention of Wisconsin Historical Society maritime archaeologists by Matthew Olson of Door County Adventure Rafting in July of 2023. It should be noted that the wreck had only been recently exposed from the bottom after more than 20 years entirely buried. Its recent uncovering and shallow location just outside the surf zone has contributed to the lack of quagga mussel colonization on the timbers. Though all its upper deck works, rigging, and machinery were lost in the sinking or were broken by years of wave and ice action along the shore, major structural components of the vessel remain extant, including its keel, keelson, and mast steps.

A survey of the *Grey Eagle* was conducted in July of 2023 by maritime archaeologists from Wisconsin Historical Society. A baseline was attached at the bow edge of the broken keelson and stretched 87.5 feet along the centerline of the vessel to the furthest extent of the stern

section. All measurements for the survey were taken from this baseline. The overall length of the remains of are 50.4 feet short of the *Grey Eagle*'s 137.5 feet total length. The beam of the remaining hull is only present up to the first futtock and is not representative of the full breadth of the ship. Measured at its widest point, the wreckage is 22 feet wide. Given the wreck dimensions, location, and a comparison of vessel losses in the vicinity based on historic newspaper accounts, the vessel remains were determined to likely belong to the schooner *Grey Eagle*.

Figure 16. *Grey Eagle*'s foremast step.

As the site was only recently exposed and lies in a dynamic area, no invasive quagga mussels have colonized the interior of the bilge allowing for detailed observations. The *Grey Eagle*'s stempost and sternpost are no longer extant. Although much of its upper hull is no longer extant, remnants of *Grey Eagle*'s floors remain up to the first futtocks. The vessel is double framed, with each futtock measuring 0.5 foot sided and 0.8 feet moulded, for an overall sided dimension of the frames of 1.0 foot with 1.0 foot spacing between each frame set. Several sections of outer hull planking remain attached to the frames. These planks measure 0.7 feet wide and 0.15 feet thick. The vessel's ceiling planks also remain extant in the bilge, measuring 0.6 to 0.7 feet wide and 0.2 feet thick.

Figure 17. *Grey Eagle*'s broken mainmast step

Grey Eagle's keelson is extant down the centerline of the shipwreck, and measures 1.1 foot sided and 1.1 foot moulded. The keelson is broken at both ends of the wreckage. Sister keelsons are located on each side of the keelson. These measure 1.2 feet wide and 0.6 feet thick. Additionally, because of the lake bottom's relatively hard surface in this area, the vessel's keel remains partially visible beneath the remains of the outer hull on the starboard side of the wreckage. Although a width could not be determined, the keel measures 0.6 feet thick.
Along with the upper extent of the vessel's hull, the vessel's deck, machinery, masts, and rigging no longer remain, however, evidence of the *Grey Eagle*'s two masts remains. The vessel's two mast steps remain intact, fastened to the top of the keelson and sister keelsons. The foremast step is located 14.9 feet along the baseline, and outside dimensions measure 1.7 feet long, 5.6 feet wide, and 1.8 feet tall. The forward face of the foremast step has worn away; however, the interior dimensions of the foremast step's mortice were estimated to be 0.8 feet long and 1.6 feet wide. The mainmast step is located at 66.3 feet along the baseline, and measures 2.0 feet long, 5.4 feet wide, and 1.8 feet tall. The inner dimensions of the mainmast step's mortise are 0.9 feet long and 1.6 feet wide, with a 0.6 feet gap in the forward face of the step.

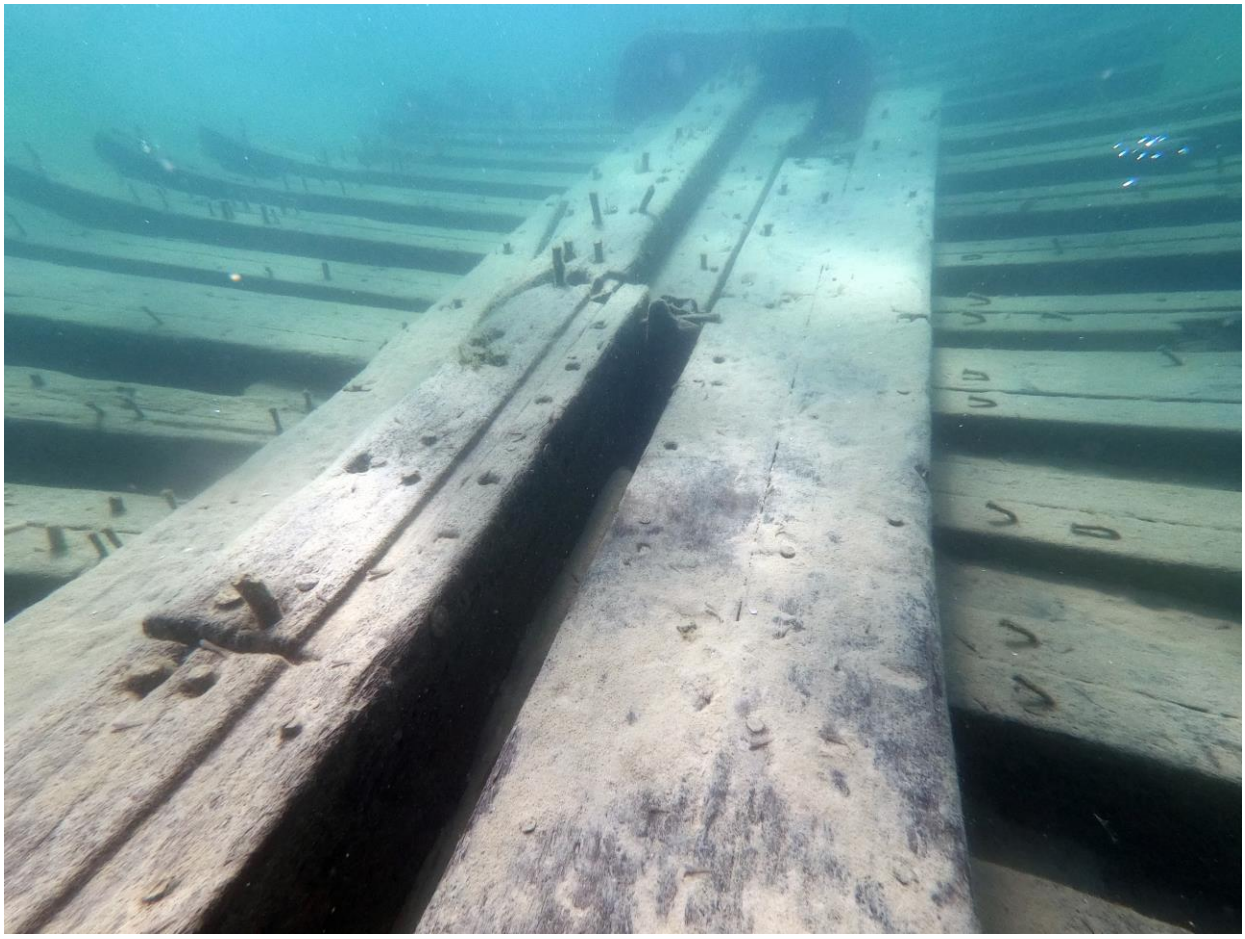

Figure 18. *Grey Eagle*'s offset centerboard slot

Originally, *Grey Eagle* was outfitted with an offset centerboard that was positioned to the port side of the keelson and sister keelson assembly. The full centerboard trunk is not present on site, however, the slot for the centerboard to pass through is extant and represents the bottom-most planks of the centerboard trunk is located between 32.5 feet and 55.4 feet on the baseline. This opening is consistent with the measurements of a centerboard for a vessel of this size. The upright timbers that made up the end structures of the inside of the centerboard trunk measures 0.7 feet long by 0.6 feet wide. Along the 22.9 feet of the centerboard opening, the sister keelson is narrowed to 0.5 feet in width. It appears that a portion of the centerboard remains in the centerboard trunk, however observations were restricted due to sand that remains packed inside the centerboard trunk.

Additionally, there remain a few unidentified components on the *Grey Eagle* site. Two sets of holes are located in the vessel's bilge, near the centerline of the ship, which extend through the hull. The forward most set is located 9.8 feet along the baseline, forward of the foremast step. Each hole measures 0.3 feet in diameter with one hole in each sister keelson. The aft set of holes

is located 72.2 feet along the baseline. These appear to be associated with the vessel's bilge pumps and used to expel water out of the hull.

It is not likely many other components of the *Grey Eagle*'s hull structure remain on the site or nearby on the outlying reefs. Most of the remains were likely broken up and swept ashore by wave and ice action over the 154 years since its sinking. The 2023 investigation did preliminarily indicate that no other significant portions of the hull remain, and additional investigations will likely not provide additional data about the construction of early Great Lakes schooners. Data already gathered on the site has increased our understanding of canaller construction. The site has been already visited by divers, kayakers, and maritime tourists, and will become a popular spot for beginner divers when conditions are favorable.

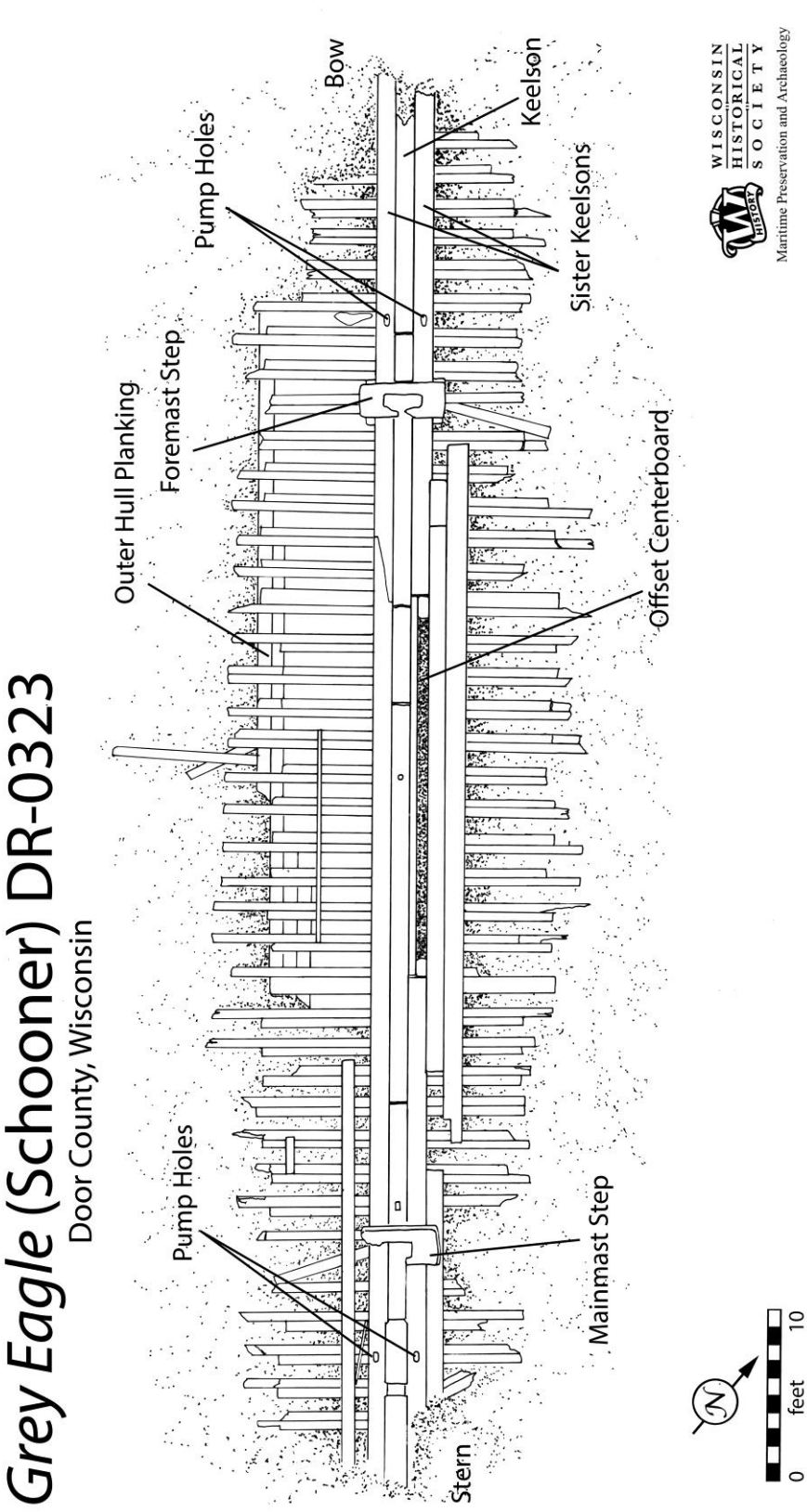

Figure 19. Site plan of *Grey Eagle* (Wisconsin Historical Society)
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CHAPTER FOUR
LITTLE HARBOR LAUNCH

The use of small boats for transportation, subsistence (fishing, hunting, and gathering), and trade dates to the earliest construction and use of watercraft by people. Indeed, the earliest watercraft were small vessels constructed for exactly these purposes. Only as the techniques and technology of boat building advanced did larger ships and vessels, rather than small boats, become synonymous with watercraft and shipbuilding. It is therefore no surprise that the building of small boats for a variety of local and regional purposes continues unabated in human society regardless of the use of large vessels that can cross oceans and connect continents.

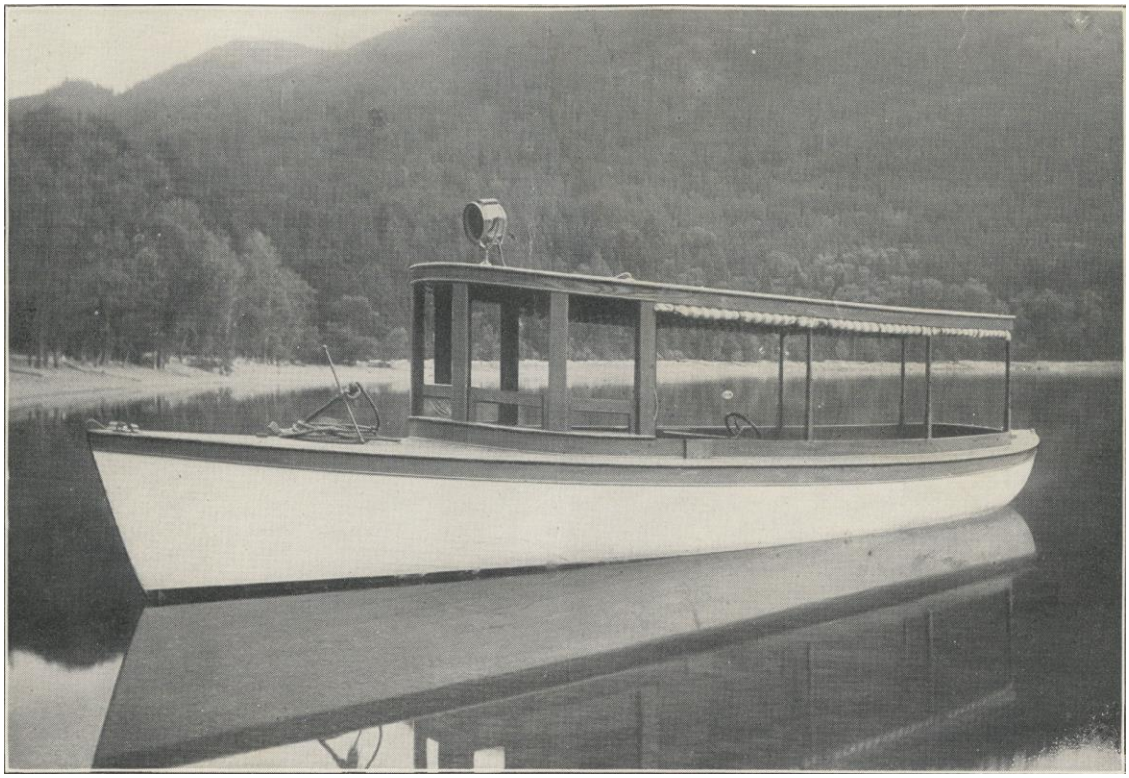

Figure 20. A 1916 30-foot gasoline launch built by the Racine Boat Company, like the Little Harbor Launch (Racine Boat Company 1916)

Although the use of small boats has drastically changed since the advent of rail and road travel, any visitor to an ocean coast, lakeshore, or navigable river will still see dozens or hundreds of small craft plying the waters – from the basic kayak or canoe to the flashy speedboat. Maritime historians and archaeologists have extensively studied small, early, non-powered watercraft from a variety of time periods, regions, and cultures – such as skin and reed boats, log boats, canoes, shallops, bateaux, skiffs, dories, and many other kinds of vernacular watercraft (Gould 2011, Evans 2016). Much has also been written about large, sailing vessels as well as large, powered vessels, including steam ships and motor vessels (Gould 2011). But very

little academic scholarship exists regarding the history and archaeology of small, powered watercraft such as early launches and motorboats – despite intense interest in these craft and their engines from wooden boat afficionados, maritime hobbyists, and historic engine enthusiasts.

Steam- and Naphtha-powered Launches

A basic history of the development of small, powered boats and marine engines is necessary in order to understand the context within which the Little Harbor Launch existed and operated. Just like their larger counterparts, small boats that made the transition from human or sail power to mechanical power were initially driven by steam engines. By the late 1800s, use of steam power in marine contexts had developed to the point that engine design stabilized, and steam engines became sufficiently reliable, efficient, and economical for routine use in small boats. The 1870s saw a dramatic increase in construction and use of steam launches in Europe, Canada, and the continental United States. These early launches could carry mail, small freight, and passengers on reliable schedules no longer dictated by the vagaries of the wind. In North America, early steam launches were frequently used to carry vacationers from shoreside railroad stations to resorts surrounding small and large bodies of water, including on the Great Lakes (Mitchell 1982, Barry 2003). During the last quarter of the nineteenth century, steam launches predominated in the small craft market in Europe, Canada, and the United States.

But the age of steam-powered launches and other small boats did not last long. As steam gained widespread favor for use in small vessels, regulation increased. In 1878, the U.S. Treasury Department recommended licenses for the engineers and pilots of all steam launches in the United States, whether large or small. These restrictions or the threat therein spurred innovation of alternate power sources. One such alternative was the naphtha engine, which involved boiling liquid naphtha – a medium-weight hydrocarbon – in an enclosed boiler like that used for steam engines. During the 1880s and 1890s, naphtha launches gained significant popularity (Mitchell 1982, Fostle 1988). Electric launches also gained a share of the market, particularly after the Electric Launch & Navigation Company, or Elco, debuted a total of 55 passenger launches driven by battery-powered electric motors at the 1893 World's Columbian Exposition in Chicago. Although Elco was in New York – later moving to Bayonne, New Jersey – the company contracted with other firms to build the launches, including 25 launches built by the Wisconsin-based Racine Hardware Manufacturing Company (Swanson 1984, Fostle 1988, Gunther 1992). As the 1890s came to an end, boaters could find steam, naphtha, and electric launches on waterways around the world – as well as one more form of locomotion that was rapidly gaining ascendancy.

Internal Combustion Engines

During the late nineteenth century, inventors began to make significant strides in the development of "explosive engines," or internal combustion engines. Although the theoretical idea of an explosive engine was not new, having originated in the 1600s or earlier, actual construction of reproducible, working models did not occur until the late 1800s. Explosive engines initially ran on a variety of fuels such as coal gas, hydrogen, and various hydrocarbons. Four-cycle engines appeared first, and two-cycle engines quickly followed. Nikolaus August Otto was one of the leading developers and patent holders for four-cycle or four-stroke engines while Dugald Clerk was one of the principal innovators of two-cycle or two-stroke engines in England with Charles Sintz credited for the invention in the U.S. (Fostle 1988, Peters 2015). Many other inventors, engineers, and machinists were involved in the creation and refinement of internal combustion engine design. Household names like Daimler, Ford, Dodge, and Olds were involved in the evolution of both marine and terrestrial internal combustion engines. Launches that ran on marine explosive engines started to appear in the 1880s in the United States (Fostle 1988). Due to the popularity and widespread appreciation of naphtha launches, some early internal combustion engine launches of the 1890s featured exhaust stacks that evoked the funnels of naphtha engines (Monitor Vapor Engine and Power Company [1894], [1895]; Hiscox 1898; Fostle 1988; Peters 2015). As explosive engines became refined and known more benignly as electro-vapor engines, they started to outcompete their steam, naphtha, and electric counterparts.

Gasoline-Engine Launches

By the late 1890s and early 1900s, launches with gasoline internal combustion engines were widely available in the United States, Canada, and Europe. Gasoline engines outcompeted other forms of propulsion for several reasons, including lower-operating cost of the engines compared to steam, naphtha and electric competitors; the cost savings due to the higher fuel efficiency of gasoline compared to coal and naphtha; and ease of obtaining gasoline compared to finding electrical charging options. The lower costs meant that purchase and use of gasoline launches was attainable to more middle-class families, resulting in a greatly increased market for the vessels (Peters 2015). Small motorboat and marine engine companies multiplied rapidly, with many firms operating all over the U.S. The Great Lakes region was home to significant progress, and Detroit began to gain its national reputation as the heart of gasoline engine development. Although this reputation is now associated with the evolution of the automobile, Detroit was also the birthplace of noteworthy marine engine innovations (Barry 2003, Peters 2015). Advances in Michigan spread across Lake Michigan into Wisconsin and elsewhere around the Great Lakes while local innovation contributed as well. Per the 1900 United States census, Wisconsin ranked third in the production of small, non-steam powered launches in the nation, behind only New York and Michigan (Peters 2015). By 1905, Wisconsin had fallen to tenth in the nation in production of small power boats (Bureau of the Census 1908). Although small launch production continued steadily around the Great Lakes through the 1910s and 1920s, the Wall Street Crash of 1929 and the ensuing Great Depression took a toll on the

region's boat-building industry. Boat sales remained strong through early 1930, but began to rapidly plummet as the financial crisis took hold (Peters 2015). As the industry rebounded in the late 1930s and early 1940s, gas boats were more frequently equipped with four-cylinder and larger gasoline engines, instead of two-cylinder engines, or carried diesel engines instead of gasoline engines (Lenihan 1987; Cooper and Kriesa 1992).

Boat and Engine Companies

According to the 1900 census, New York, Michigan, and Wisconsin – in that order – were the largest builders of non-steam powered launches in the country (Peters 2015). The last decade of the nineteenth century and first decade of the twentieth century saw numerous companies operating in the upper Midwest. In Wisconsin, companies like the Racine Boat Manufacturing Company (1893-1903), Dan Kidney & Son of De Pere (1873-1964), Pierce Engine Company (1893-1910) of Racine, and Sturgeon Bay Boat Manufacturing Company (1903-1909) produced catalogs of the many launch models they offered for sale to the public (Pierce Engine Company 1899, 1904; Racine Boat Manufacturing Company 1899, 1900, 1903; Sturgeon Bay Boat Manufacturing Company 1907; Dan Kidney & Son 1909; Wisconsin Maritime Museum [1983]). Numerous other companies existed around the state.

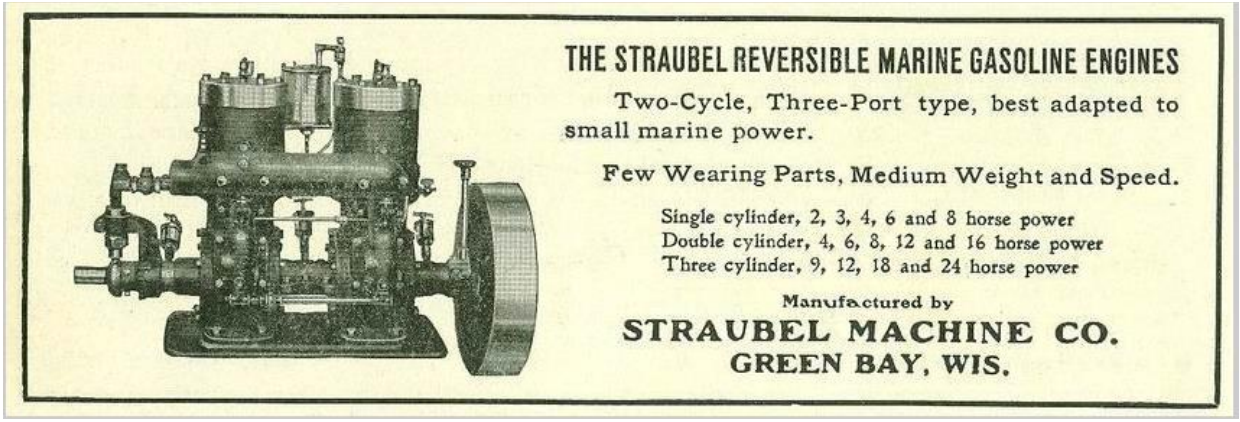

Figure 21. Advertisement for Straubel Marine Gasoline Engines (Straubel Machine Company)

Several marine engine companies in Wisconsin supplied the burgeoning gasoline boat market, among them the aforementioned Pierce Engine Company (1893-1910), H. C. Doman Company of Oshkosh (1902-1920), Kahlenberg Brothers Company of Two Rivers (for engine production, 1895-1960); and Straubel Machine Company of Green Bay (1907-1931). Their catalogs included single, double, and even triple cylinder, two-cycle engines (Pierce Engine Company 1899, 1904; Straubel Machine Company n.d., 1915; Barry 2003; Kahlenberg Propellers 2024; Straubel Paper Company 2024; Vintage Machinery 2024). In addition, many of the launch companies made engines and many of the engine companies made launches so an array of options was available within Wisconsin. And while gas launches and marine gas engines were readily available from local suppliers, consumers also had the option of ordering a launch

and/or a marine gas engine from companies located elsewhere in the Midwest and all over the country.

Launch Uses

Gasoline launches served in a variety of commercial and recreational purposes. Boats used for commercial purposes were sometimes simply called gas boats (*Montfort Mail* 1905; Lenihan 1987). Uses of gasoline launches included fishing, shipping of mail and small freight, and transportation of residents, local workers, and passengers. Launches with added decorative and luxury features – such as brass brightwork, padded benches, canopies, standing roofs, and/or curtains – were frequently used to bring visitors to lakeside resorts and provide entertainment in the form of excursions for picnics and to see area points of interest (Lenihan 1987, Cooper and Kriesa 1992, Tolson 1992). On Wisconsin's many bodies of water, gas launches and boats became a common sight in the early twentieth century.

Around Sturgeon Bay and in Door County, where the Little Harbor Launch wreck is located, launches were used for many of these same purposes (*Stoughton Courier-Hub* 1910, *Door County Advocate* 1923). According to a 1907 article, "The gasoline boats are about the only means of communication between Little Sturgeon and bay ports, and as these are authorized to carry passengers in nearly all cases there is no trouble for the people to get in and out. These handy and taut little craft also carry all the freight consigned to local dealers and others. Their outward cargo comprise fish in the main" (*Advocate* 1907). In 1909, another local paper claimed that "Sturgeon Bay [had] the largest and best motor boat [sic] fleet in the Green Bay region" (*Door County Democrat* 1909a). Because of Door County's active fruit growing economy, local launches were often used to transport seasonal fruit picking laborers to area orchards and farms as well as to transport fruit to markets around Lake Michigan (*Door County Democrat* 1906c, 1909d; *Advocate* 1911b; *Door County News* 1915; *Door County Advocate* 1922). Gas launches were even used for government activities and as government vessels, including as mailboats, lifeboats, and tenders for lightships, lighthouses, and larger vessels (*Door County Democrat* 1917; *Door County Advocate* 1923; Barry 2003). Gas launches were an integral part of the region's maritime character and economy.

Some local and seasonal residents owned launches simply for personal recreation and pleasure (*Door County Democrat* 1906a, 1914a). Others ran their launches as packets between lakeside towns, cities, and points of interest or offered them for charter during specified days and times, either as small business ventures or to defray the costs of ownership (*Advocate* 1905, 1906, 1911c; *Door County Democrat* 1910, 1911d, 1912; *Door County Advocate* 1929, 1930; *Door County News* 1929). Many local resorts had their own fleet of launches, such as the Idlewild Inn, Pines Hotel, and Cabot's Lodge on the north shore of Sawyer Harbor on the western side of Sturgeon Bay – an area known locally as Idlewild. In addition, local business owners catered to resort clientele by offering transportation on their launches to Idlewild for picnics and other

activities. Launches were also purchased and used by resort owners; they established daily routes between their resorts and Sturgeon Bay, as evidenced in numerous contemporary newspaper articles and advertisements (*Advocate* 1905, 1911c; *Door County Democrat* 1905a, 1905b, 1906b, 1911a, 1911b, 1911c, 1914b, 1916a, 1916c; *Door County Advocate* 1919). Several launches associated with the Idlewild Inn are depicted in contemporary postcards and a promotional pamphlet (Wisconsin Historical Society Archives 1900s; Idlewild Inn Company [1910]). Transportation was clearly a significant use for gasoline launches, in Door County in the early 1900s.

Little Harbor Launch Research

SHPO Archaeologists conducted extensive archival research in Door County, Green Bay, and Wisconsin newspapers to identify the wreck. Several instances were identified of sinkings, drownings, fires, drifting boats, and excursions gone awry (*Juneau Telephone* 1903; *Watertown News* 1907; *Door County Democrat* 1909b, 1909c, 1910, 1916b; *Advocate* 1911a; *Door County News* 1917, 1925; *La Crosse Tribune* 1925; *Door County Advocate* 1933, 1934). None of the incidents matched the specifics of the Little Harbor Launch, which was not burned, scuttled, or sunk intentionally, based on the condition of the boat and intact items found onboard. Only one 1909 incident offered a potential match to the Little Harbor Launch. A launch was swamped in a storm roughly a mile offshore of the city of Green Bay; its occupants, 19-year-old James Nichols and 20-year-old John Nicholson, made it safely to shore (*Manitowoc Pilot* 1909). Since this incident occurred close to the city of Green Bay, it is unlikely that the swamped launch would have drifted almost 40 miles northeast of Green Bay before sinking in Little Harbor north of Sturgeon Bay. Despite extensive research, no likely instances were found in Wisconsin papers of missing persons rescued without their gas boat, of missing launch parties or work boats that were never found, or of gas boats that broke their moorings and disappeared – all of which would have been newsworthy incidents in the small communities of Door County and surrounding areas.

The location of the launch wreck in Little Harbor north of Sturgeon Bay offers two additional clues that may eventually help to identify the wreck and its history. As mentioned above, launches in Door County frequently served the area's important fruit growing industry by transporting fruit pickers or products via the area's waterways (*Door County Democrat* 1906c, 1909d; *Advocate* 1911b; *Door County Advocate* 1922). A 1914 atlas of Door County documents several large parcels immediately adjacent to Little Harbor that belonged to fruit companies, including Paragon Land and Orchard Company, Reynolds Preserving Company, and Sturgeon Bay Fruit Company (Nelson 1914). The Little Harbor Launch could represent the unfortunate end of a local fruit boat. Similarly, Little Harbor was known by local fisherfolk as a productive fishing location. Contemporary newspaper articles mention the collection of thousands of pounds of fish, including herring and bluefin, from Little Harbor (*Door County Advocate* 1895; *Advocate* 1900; *Door County Democrat* 1905c). According to a 1921 article, "The fish do not

come up into Sturgeon bay [sic] but are caught in large numbers…around Little Harbor" (*Door County Advocate* 1921). The Little Harbor Launch could be the remains of a fishing boat that foundered on its last voyage. Additional research into fruit companies and fishing outfits around Sturgeon Bay and Door County may reveal more information about the fleet of small boats used by these local industries.

The research conducted into specific instances of wrecks and losses of launches in Green Bay did not result in definitive identification of the Little Harbor Launch. Regardless, the historic context provided above for gas launches and boats in Sturgeon Bay, Door County, Wisconsin, and the wider global marketplace details the evolution of such vessels, the kinds of tasks for which they were suited, and the industries in which they were utilized. This context situates the Little Harbor Launch within both time and space, allowing for a better understanding of the vessel's potential uses within Door County's maritime economy regardless of an exact vessel identification.

Site Description

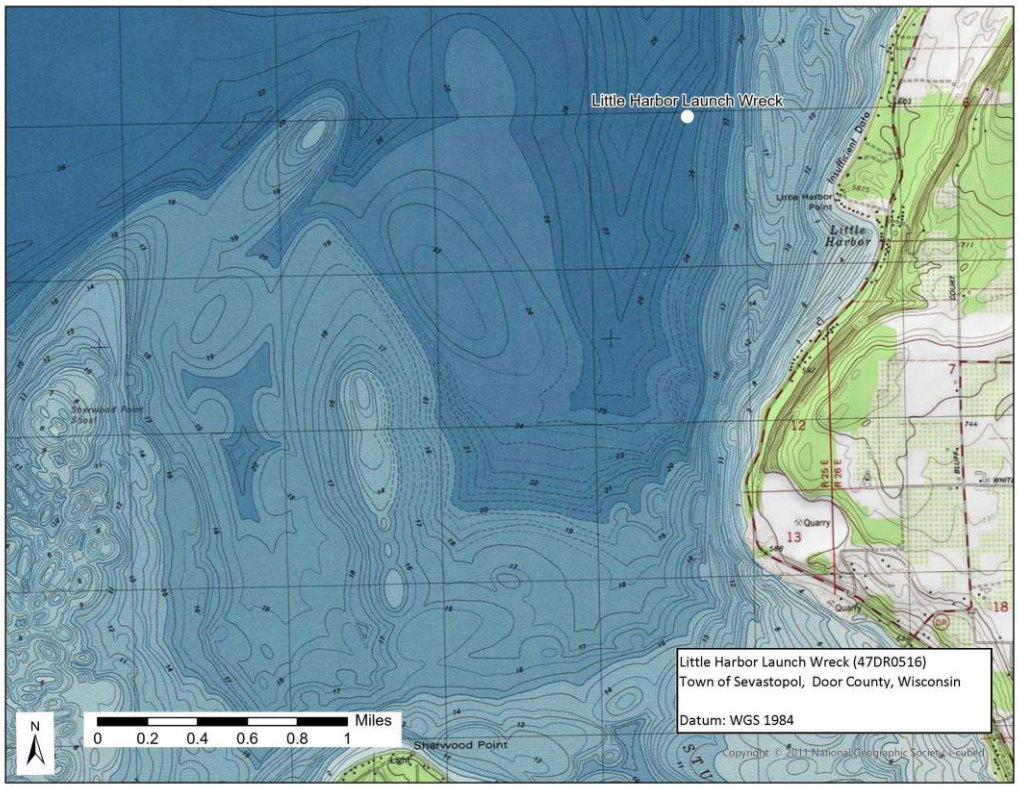

Figure 22. Location of Little Harbor Launch Wreck

The remains of the Little Harbor Launch wreck (47DR516) lie in 92 feet of water under the surface of Green Bay, north-northeast of the Sherwood Point Lighthouse. The vessel is completely intact up to its railing. The remains are well-preserved due to their depth and recent

discovery in the cold, dark waters. All components of the launch's machinery, hull, and cabin structure remain extant on the site.

The Little Harbor Launch (47DR516) was located during a hydrographic survey of Green Bay conducted by the National Oceanic and Atmospheric Administration's Office of Coast Survey in 2021. The wreck site's location was reported to the Wisconsin State Historic Preservation Office in the spring of 2022 and first visited by maritime archaeologists in June 2022. With the support of a grant from the University of Wisconsin Sea Grant, Wisconsin Historical Society's maritime archaeologists and volunteers conducted an archaeological survey of the wreck over multiple site visits in May and June 2024. During the investigation, photos, video, and initial data were collected and a photogrammetry model of the wreck site was created.

The vessel rests on a heading of 310 degrees with an 11-degree list to starboard. Overall, the boat measures 29.5 feet long and is 9.2 feet at its widest point. The hull remains intact from the railing down to the keel. Evidence of red trim paint is found throughout the ship, particularly on the gunnel. However, most of the hull has no paint, which may be evidence of a varnish treatment over most of the hull.

The vessel is single framed. Frames measure 0.1 feet square and are spaced 1.0 feet apart. Outer hull planking measures 0.25 feet wide and 0.05 feet thick. A single board of ceiling planking is mounted along the top edge of the hull and rises 0.1 feet above the rail cap to produce a splash guard. Below this, the frames and outer hull planking are exposed to the interior of the cabin. Ceiling planking measures 0.6 feet wide and 0.1 feet thick. The rail cap is 0.35 feet wide and 0.1 feet thick.

The stempost/cutwater measures 0.1 feet wide at the forward edge and tapers to 0.3 feet at the aft edge; it is 0.5 feet thick and rises 4.2 feet above the sediment. Inside the forepeak of the bow is a triangular platform that covers the chain locker. The triangular platform is constructed of two pieces of wood fastened side-by-side and painted red. A conglomeration of metal is located underneath the platform; this probably consists of chain, the anchor, and other tackle that have become rusted into an indiscernible mass.

The ship's bell was found wedged between the chain locker and fuel tank. The bell measures 0.65 feet in diameter at its rim and is 0.4 feet in height. There is a flat bar arm bracket attached to the top of the bell with a nut. At the terminus of the arm is a metal dovetail that would have fit into an attachment bracket on the boat. The clapper remains within the bell. There are no discernible letters or other markings on the bell.

Aft of the chain locker, 3.3 feet aft of the stempost, is the fuel tank. The tank measures 2.5 feet fore-and-aft and stands 1.1 feet tall. Athwartship, it measures 2.4 feet across the forward edge and 3.7 feet across the aft edge. Centered along the forward edge of the tank is a filler neck.

The tank is made of ferrous metal and is very deteriorated; unfortunately, the tank disintegrated considerably during its examination.

Figure 23. The Little Harbor Launch's cutwater, stempost, and bow as visible from the port side of the craft looking aft (Zach Whitrock)

Aft of the fuel tank and 6.6 feet aft of the stempost rests the rectangular roof for the pilothouse or semi-enclosed cabin and standing roof. Gasoline launches of this era were open (no roof and no cabin), canopied (featuring a water-resistant canvas-top supported by stanchions with or without a cabin), or had a standing roof (a wood roof supported by stanchions with or without a cabin). Cabins and standing roofs were more expensive than open and canopied launches. Overall, the roof of the pilothouse measures 6.1 feet long and 3.4 feet wide. It is constructed of ten tongue-and-groove planks that each measure 0.25 feet wide and 0.05 feet thick. The beams that supported this roof measure 0.15 feet square and are spaced 1.7 feet apart.

The standing roof of the launch has collapsed on top of the engine, leaving in place the remains of six of the eight stanchions that supported the roof. On the Little Harbor Launch, all four stanchions are present on the port side, but only two are present on the starboard side. Roof planking measures 0.6 feet wide and 0.1 feet thick. Roof beams measure 0.15 feet wide and

0.15 feet thick and are spaced 4.2 feet apart. The overall height of most of the stanchions is 4.0 feet with 3.4 feet of this length above the rail. The stanchions measure 0.15 feet wide with a thickness of 0.20 feet.

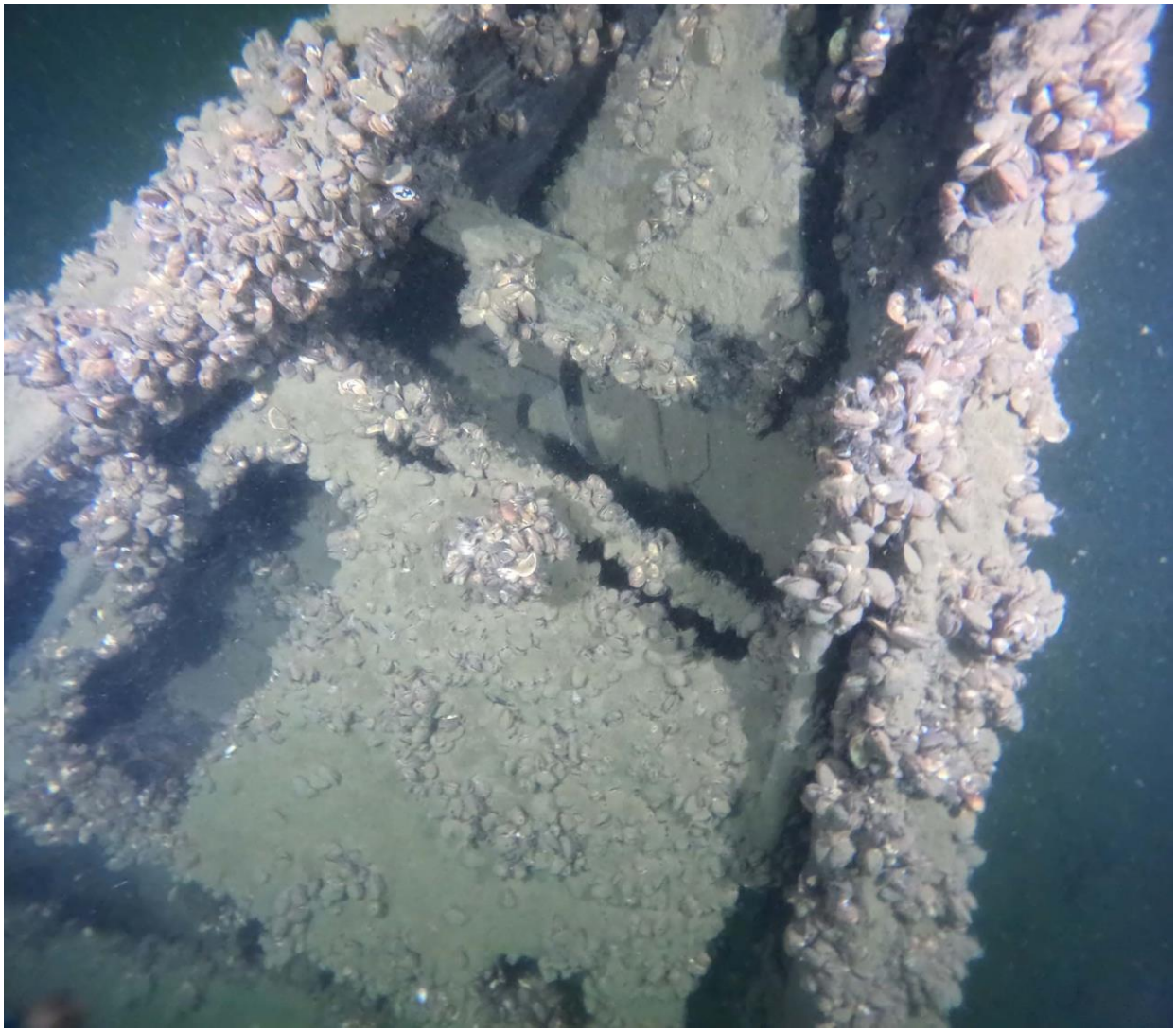

Figure 24. Plan view of the Little Harbor Launch inside the hull at the bow. The chain locker, ship’s bell, and the fuel tank with filler neck are visible (Zach Whitrock)

A portion of the cabin wall remains on the sediment 4.5 feet off the starboard side of the wreckage; it is made with tongue-and-groove construction. A loose piece of beadboard is located in this vicinity, likely a piece of the semi-enclosed cabin's interior. The semi-enclosed cabin featured glass windows, likely on the forward side and possibly on the starboard and port sides. An unbroken pane of glass measuring 0.02 feet thick was found inside the hull along the starboard side. There are remnants of the frame that held the glass associated with one corner of the glass pane. The frame is 0.4 feet thick and 0.13 feet wide; the corners are of half-lap construction and are fastened with 0.02 feet diameter wooden pegs.

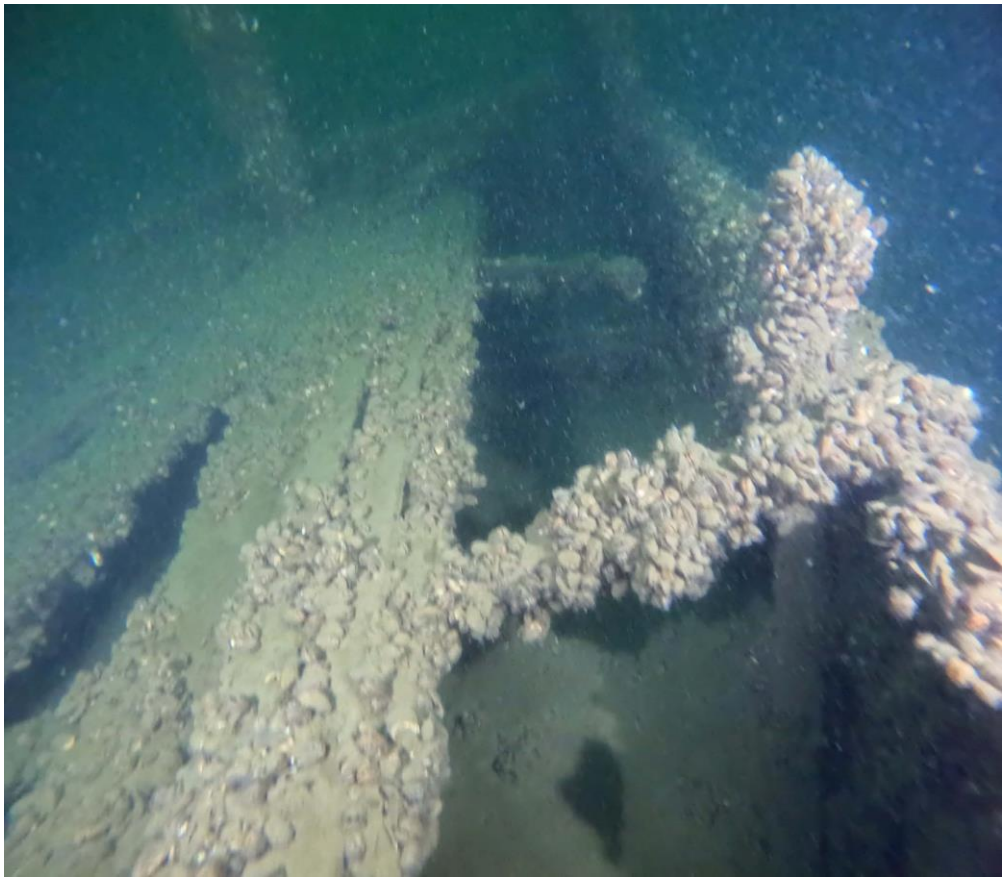

Figure 25. Little Harbor Launch's collapsed standing roof, fragments of stanchions, and exhaust stack. View from port side railing of vessel looking aft (Zach Whitrock)

The launch was powered by a two-cylinder, two-cycle or two-stroke, reversible engine which remains inside the hull under the collapsed standing roof. The engine has a starboard-side intake and exhaust manifold. The exhaust outlet is on the aft side of the manifold. There is a flywheel on the front of the engine that measures 0.35 feet thick. No identifying plaques, tags, lettering, or markings were located on the engine. The oil lines from the drip oilers lead down into the silt on the port side. The engine likely had updraft carburetors, though evidence of these remains buried. The exhaust stack is located 20.7 feet aft of the stempost and stands 3.3 feet above the collapsed roof. The outside diameter of the stack is 0.45 feet. The stack is offset to the starboard side of the engine and is connected to the exhaust manifold with a J-bend.
The engine in the Little Harbor Launch shows a strong resemblance to Straubel marine engines produced by the Straubel Machine Company in Green Bay from 1907 to 1931 (predecessor to today's Straubel Paper Company 2024). The engine has a large-diameter flywheel as well as a starboard-side intake and exhaust manifold. Combined with other aspects of the engine, such as the flat cylinder tops, these characteristics are diagnostic of Straubel marine engines per extant examples of Straubel marine engines at the Door County Maritime Museum, Racine Heritage

Museum, and Wisconsin Maritime Museum as well as contemporary Straubel Machine Company catalogs from the Neville Public Museum and the Wisconsin Maritime Museum (Straubel Machine Company n.d., 1915). Although the make of the engine has not yet been determined, further investigation may reveal a maker's mark, plaque, or lettering that would allow for more precise dating of the wreck site.

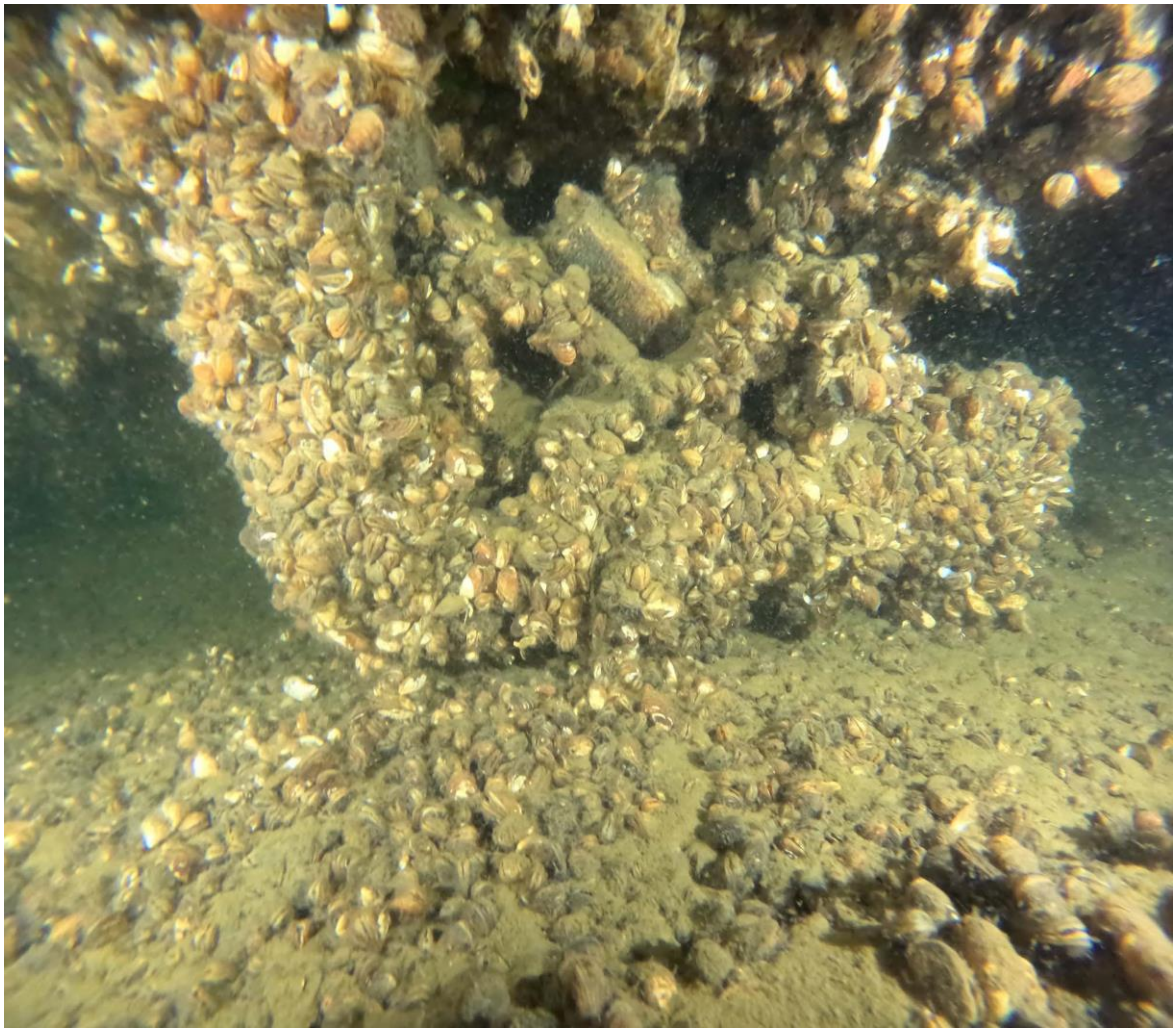

Figure 26. Exhaust manifold of the marine engine under the collapsed standing roof of the Little Harbor Launch (Zach Whitrock)

The stern deck of the Little Harbor Launch is located forward of the transom. Deck planking at the stern measures 0.3 feet wide and 0.05 feet thick. Deck beams that support the stern deck measure 0.15 feet wide and 0.2 feet thick. The steerage access hatch is centered on this deck and measures 1.2 feet square. A metal tiller arm is visible through the hatch and measures 0.15 feet square with a flange at the terminus that is 0.3 feet long and 0.2 feet in diameter. The steering quadrant could not be seen within the sediment-filled hull.

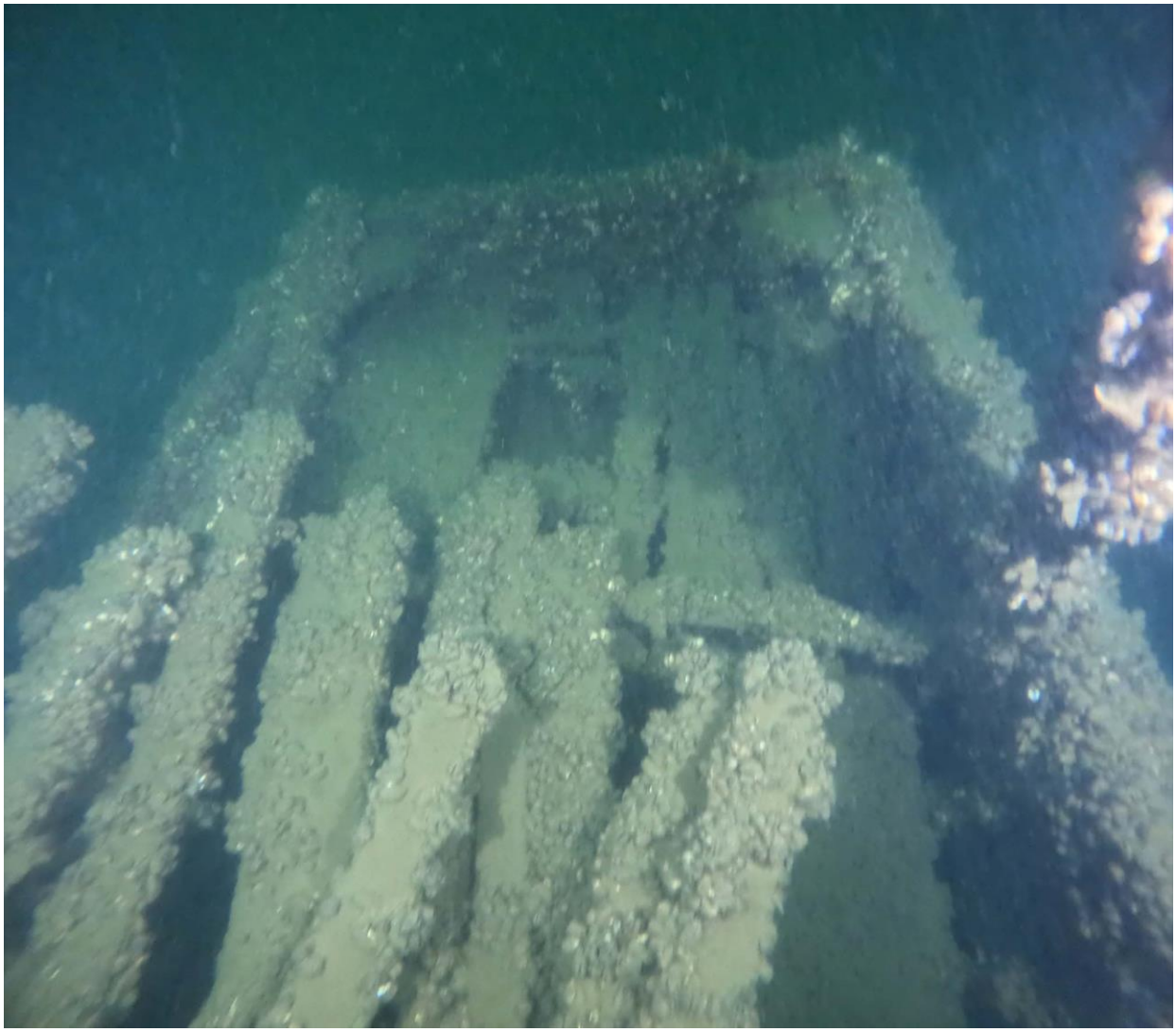

Figure 27. The Little Harbor Launch's stern deck, steerage hatch, and transom. View from the exhaust stack looking aft (Zach Whitrock)

Lodging knees are present on the hull interior at the corners of both sides of the transom. The knees measure 1.0 feet long, 0.8 feet wide, and 0.5 feet at the throat with a thickness of 0.10 feet. The lodging knees are painted red. The raked square transom stern measures 5.2 feet wide at the top and 2.6 feet tall at the center. It is constructed of four boards plus a trim piece on top. These boards measure 0.5 feet wide and are 0.1 feet thick. The top of the transom is 3.6 feet above the sediment. In Wisconsin, locally produced gasoline launches from the same period of significance (1890-1930) as the Little Harbor Launch generally exhibited one of several established types of sterns, including fantail, torpedo, compromise, or raked square (Pierce Engine Company 1899, 1904; Racine Boat Manufacturing Company 1899, 1900, 1903; Sturgeon Bay Boat Manufacturing Company 1907; Dan Kidney & Son 1909; Racine Boat Company 1916; Lenihan 1987). Sources indicate that the square stern offered some advantages in terms of stability. According to Mitchell (1982), a "wide, flat stern [prevented] squatting at high speeds." Another author echoed the sentiment: "The traditional fantail stern tended to

squat at speed...” (Barry 2003). The use of a square stern on the Little Harbor Launch likely produced a more stable vessel whose stern was less likely to squat at high speeds than its differing-stern counterparts.

Figure 28. The raked square transom stern of the Little Harbor Launch looking forward. The rudder is hard over to port (Zach Whitrock)

According to a 1987 study of launches and small boats at Isle Royale National Park in Michigan on Lake Superior, “In the latter 1890s and early 1900s, the double-ended launch was not uncommon; however, like the double-ended gas boat, that stern configuration was dropped for the roomier raked square stern.... By the 1930s, the stern on both the launch and the gas boat took one of three forms, a fantail, a raked square stern, and a cut-away stern. While any of the three were used for the launch, the square stern and cut-away stern were preferred by fishermen” (Lenihan 1987:465). Whether this Lake Superior trend in the state of Michigan held true for Lake Michigan in Wisconsin has not yet been determined. Regardless, the square stern on the Little Harbor Launch likely provided the dual benefits of more space for passengers and freight and improved the vessel’s stability.

The exposed part of the Little Harbor Launch's rudder measures 1.15 feet wide at the rudder post. It is 0.1 feet thick at the rudder post and tapers slightly to a blade. The rudder and rudder post are constructed of metal. The rudder post measures 0.2 feet in diameter. The vessel had a four-bladed propeller made of iron. Only the tips of two of the propeller blades are exposed above the sediment.

Quagga mussel colonization has obscured many of the smaller artifacts located within the hull and in the associated debris field. Smaller artifacts are likely extant inside the cabin under the collapsed roof, an area not fully explored during the initial investigation. Because of this, the probability for additional artifacts to be identified in subsequent years remains high. Limited archaeological data collected during this survey has provided initial information about early gasoline launches and vernacular craft but more remains to be uncovered.

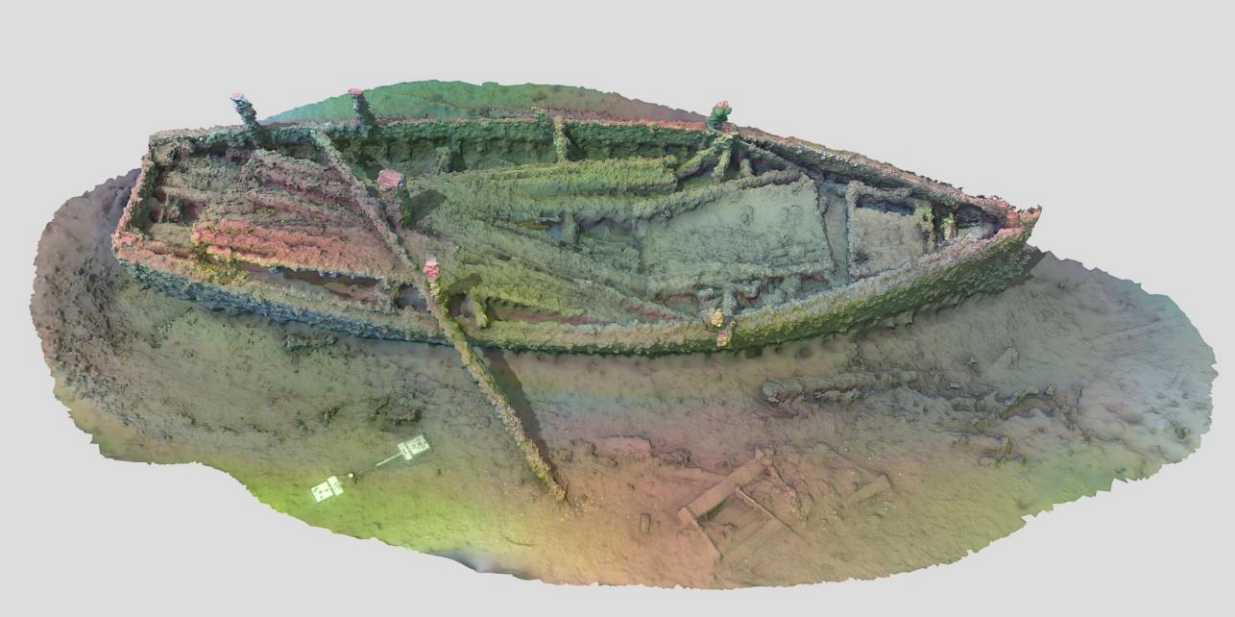

Figure 29. Photogrammetry model of the Little Harbor Launch wreck (Zach Whitrock)

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CHAPTER FIVE
SCHOONER *MARGARET A. MUIR*

The schooner *Margaret A. Muir* was built by Master Shipbuilder Hans M. Scove at Manitowoc, Wisconsin in 1872 (Bureau of Navigation 1872). Hans Scove was a principal in the shipbuilding firm Hanson and Scove (along with partner, Jasper Hanson). Hanson and Scove emigrated from Denmark in 1837 and 1855, respectively. Hanson began building ships in Manitowoc in 1866 and Scove worked as a carpenter for the U.S. Navy during the American Civil War before moving west to Manitowoc and joining Hanson in the firm in 1870. Hanson and Scove built 24 vessels during their 20-year partnership, employing an 80-man crew comprised mostly of Scandinavians (Falge 1912).

Figure 30. Historic image of *Margaret A. Muir* from the stern (on right). Photographer, date and location unknown (Bruce J. Andrews, Yesterday's Trails Photo Restorations, provided by Brendon Baillod).

Margaret A. Muir was described as schooner-rigged with one deck, three masts, a plain head and square stern. It measured 128.6 feet long, 26.2 feet in beam with 11.5 feet depth of hold. Its tonnage was calculated at 347.44 tons of which 327.3 tons capacity was under the tonnage deck and 20.14 tons capacity was within enclosures on the upper deck (Bureau of Navigation 1872).

Margaret A. Muir was built for Captain David Muir of Chicago, Illinois (Bureau of Navigation 1872). David Muir, born in 1828 in Ayrshire, Scotland, was a lifelong mariner, and had six

children. In 1860 he sailed the schooner *Niagara* from Liverpool to Cleveland, Ohio with general merchandise and returned to Europe with mid-western grain. He made the trans-Atlantic crossing several times connecting Europe to various lake ports. His new ship was named for his eldest daughter, Margaret A. Muir, born 15 December 1862 in Port Dalhousie, Canada West, Canada. Throughout the ship's career Captain Muir was said to have taken care of the vessel "better than most wives" (*Inter Ocean* 1891a; US Census Bureau 1880).

The construction of the schooner was personally overseen by Captain Muir and his Mate (likely Alex Mackey) (*Inter Ocean* 1875h; *Manitowoc Tribune* 1872a, b). While superintending its build, on 28 October 1872 Captain Muir lost his left thumb above the first joint when his hand became caught in a block while setting the rigging. Captain Muir preformed his own amputation back to the joint and sewed up the wound (*Manitowoc Tribune* 1872c). The ship was launched on 7 November and tied up at the foot of Sixth Street in Manitowoc. A few days later, the arriving schooner *J. & A. Stronach* ran into the *Margaret A. Muir* carrying away its bowsprit. It also struck the schooner *Ashtabula* which was tied alongside, and that schooner sprung a leak and sank at the dock (*Manitowoc Post* 1872a).

Margaret A. Muir was repaired and sailed from Manitowoc on 11 November 1872 for Milwaukee, continuing south shortly thereafter to its homeport of Chicago. The schooner was registered at Chicago on 14 November 1872 and given an A2 insurance rating of $20,000 (BLU 1872; Bureau of Navigation 1872; *Manitowoc Pilot* 1872; *Manitowoc Tribune* 1872d). The day following enrollment, Captain Muir relinquished command to Captain Charles M. Lee at Milwaukee and Captain Lee remained at the helm through the close of navigation (Bureau of Navigation 1872).

The schooner was chartered for only one trip its first season. On 16 November 1872 the schooner took on 21,000 bushels of wheat to be carried from Milwaukee to Port Colborne, Ontario, Canada. After loading the cargo, the ship was found to be leaking through one of the ports, and a portion of the cargo was taken off to repair the ship. The ship was reloaded and departed Milwaukee with a four-day delay (*Manitowoc Post* 1872b; *Milwaukee Daily Sentinel* 1872a, 1872b, 1872c).

On 19 March 1873, Captain William Burt replaced Captain Lee at Chicago and on 14 June Captain Burt was replaced by Captain E.M. Fuller at Bay City, Michigan (Bureau of Navigation 1872). Little is known about the ship's specific routes or cargos for much of the 1873-season. The ship was recorded passing Detroit upbound on June 9 and downbound on 19 July (*Cleveland Daily Herald* 1873; *Chicago Evening Post* 1873; *Milwaukee Sentinel* 1873a). *Margaret A. Muir* brought coal to Chicago from Oswego, New York on 19 October. The next day while in tow on the South Branch of the Chicago River, *Margaret A. Muir* collided with the barge *Rutter* while navigating past the railroad bridge and lost its jibboom (*Inter Ocean* 1873a, 1873d; *Milwaukee Sentinel* 1873b).

The ship was sailing downbound on Lake Michigan in the company of the schooners *Montblanc* and *Gilbert Mollison* when a terrible storm set in near South Manitou Island on the evening of 27 October 1873. The gale separated the three ships and sank the *Gilbert Mollison*. Both *Margaret A. Muir* and *Moncblanc* were bound for Detroit. *Margaret A. Muir* departed Detroit on 9 November (*Cleveland Daily Herald* 1873b; *Sandusky Register* 1873). The ship brought lumber to Chicago from Ludington, Michigan on 27 November on its last run of the season (*Buffalo Commercial Advertiser* 1873; *Chicago Tribune* 1873; *Inter Ocean 1*873b, 1873c; *Milwaukee Sentinel* 1873c; *Oswego Palladium* 1873).

At the onset of the 1874-season, Captain Alex W. Mackey took over the helm and the Board of Lake Underwriters upgraded *Margaret A. Muir*'s insurance rating to A1, continuing its valuation at $20,000 (Bureau of Navigation 1872; BLU 1874). For *Margaret A. Muir*'s first trip of the season, the schooner loaded 22,638 bushels of corn for Jason Parker & Son and departed Chicago on 20 April 1874 bound for Buffalo. The weather was unfavorable for much of the beginning part of the route, and it took the ship eighteen days to travel as far as Detroit. The schooner arrived in Buffalo on 9 May (*Buffalo Commercial* 1874; *Buffalo Morning News* 1874; *Daily Palladium* 1874). In July and August, the ship collected cargos of lumber at Menominee, Michigan for the Chicago lumber market (*Door County Advocate* 1874a, 1874b; *Inter Ocean* 1874).

In 1875 the ship's owner, Captain David Muir returned to *Margaret A. Muir*'s helm. The schooner kept its A1 rating, but its value was reduced to $18,000 (Bureau of Navigation 1872; BLU 1875). The schooner departed Chicago in mid-May making its way to Buffalo (presumably with a grain cargo although this information alluded newsprint). On 30 May 1875, the ship cleared Buffalo light for Dresden, Ontario (*Buffalo Commercial Advertiser* 1875a; *Buffalo Morning News* 1875). Another trip to Buffalo with wheat was made in late June. In August the vessel picked up coal at Cleveland bound for Chicago (*Inter Ocean* 1875a, 1875b). *Margaret A. Muir* brought 23,000 bushels of corn to Buffalo for E.M. Eames, arriving on 24 September. It cleared on 28 September with 660 tons of coal for Chicago (*Buffalo Commercial Advertiser* 1875b, 1875c; *Inter Ocean* 1875c, 1875d). Another trip with wheat, returning with coal, was made in October (*Buffalo Commercial Advertiser* 1875d; *Inter Ocean* 1875e). On the morning of 3 November 1875 during that upbound trip with coal, *Margaret A. Muir* collied with the schooner *Senator Blood* near Point Au Pelee. *Margaret A. Muir* lost its mizzenmast. The *Senator Blood*, carrying grain from Toledo to Buffalo, lost its bowsprit, head rigging, anchor with 48 feet of anchor chain and broke several stanchions, causing the ship to leak badly. *Margaret A. Muir* sailed to Port Huron and *Senator Blood* sailed to Detroit for repairs (*Inter Ocean* 1875f, 1875g; *Milwaukee Sentinel* 1875). Upon returning to Chicago, *Margaret A. Muir* was laid up for the winter (*Inter Ocean* 1875i).

In 1876 *Margaret A. Muir*'s insurance rating was reduced to A2 and its valuation fell to $16,000 (BLU 1876). The schooner received a charter during the second week of April 1876 to haul wheat from Chicago to Kingston, Ontario and began fitting out (*Inter Ocean* 1876a; *Milwaukee Sentinel* 1876a, 1876b). The ship cleared Chicago on 27 April. When it returned to the city on 31 May, it carried a cargo of coal (*Chicago Tribune* 1876). The vessel brought grain east in mid-August and picked up coal at Charlotte, New York before returning to Chicago (*Buffalo Commercial Advertiser* 1876; *Kingston Daily News* 1876a; *Milwaukee Sentinel* 1876c). The schooner encountered a gale on Lake Erie in early October. The following wind was so strong that the ship was able to make the distance from Long Point to Four Mile Point, about forty-five miles, in four hours. *Margaret A. Muir* was then delayed for more than twelve hours at Port Dalhousie, Ontario waiting for the weather to abate before transiting the Welland Canal and continuing to Kingston (*Inter Ocean* 1876b, 1876c; *Kingston Daily News* 1876b; *Milwaukee Sentinel* 1876d; *Oswego Daily Times* 1876). The ship picked up coal at Charlotte, New York before heading back west for Chicago. While transiting the St. Clair Flats on the night of 24 October 1876, *Margaret A. Muir* was run into by an unknown steambarge with two barges in tow. The schooner lost its jibboom in the collision (*Inter Ocean* 1876d; *Milwaukee Sentinel* 1876e, 1876f). Upon returning to Chicago the ship was put up for the winter (*Inter Ocean* 1876e).

The schooner's valuation dropped in 1877 to $14,000 but it retained its A2 insurance rating (BLU 1877). The vessel made trips to the lower lakes from Chicago in May and June. It called at Collins Bay, Ontario on 16 June and cleared for Grand Island, Michigan, light (*British Whig* 1877; *Inter Ocean* 1877a). The cargoes it carried are not known. On 17 September 1877 *Margaret A. Muir* broke its centerboard on Lake Huron, near Alcona, Michigan requiring assistance from the tug *Mystic*. Repairs were made and the ship continued to Escanaba, Michigan (*Inter Ocean* 1877b; *Milwaukee Sentinel* 1877a). Another trip was made to the eastern lakes in late September and the vessel returned to Chicago with coal from Cleveland (*Inter Ocean* 1877c, 1877d, 1877e; *Milwaukee Sentinel* 1877b). On 9 November the ship cleared Chicago to pick up a cargo of lumber from Ford River, Michigan. Upon returning it went into winter quarters in the South Branch of the Chicago River (*Inter Ocean* 1877f, 1877g).

In April 1877, Captain David Muir addressed his fellow lake mariners through an editorial in the marine newspaper, *Inter Ocean*. His call was to fellow owners to unify against the railroads over concerns that railroads were taking ownership of mass quantities of ships and would gain control of the market for cargoes available to work-a-day lake vessels like his (*Inter Ocean* 1878a).

Margaret A. Muir dropped another $1000 in insurance valuation in 1878 (BLU 1878). The ship cleared Chicago on 27 April 1878 with 22,468 bushels of corn bound for Oswego (*Inter Ocean* 1878b). An arrival at Chicago was recorded with lumber from Sister Bay, Wisconsin on 5 June (*Inter Ocean* 1878c). The ship returned to Door County for its next trip (*Door County Advocate*

1878a; *Inter Ocean* 1878d). Ice was loaded at Sturgeon Bay and delivered to Chicago on 11 August (*Door County Advocate* 1877b; *Inter Ocean* 1878e). On 18 September the ship cleared Chicago for Collingwood, Ontario with grain. For the trip west at the end of September, it was chartered to collect lumber from Caseville, Michigan (on Saginaw Bay) for Chicago. Another arrival was recorded at Chicago with lumber on November 13 from Cedar River, Michigan (*Buffalo Courier Express* 1878; *Inter Ocean* 1878f; *Inter Ocean* 1878g).

In 1879, the schooner's insurance value dropped $2000 to $11,000 (BLU 1879). For its first trip of the 1879-season, *Margaret A. Muir* accepted a charter on 11 May 1879 to carry corn from Chicago to Kingston at 6 cents per bushel. It should be noted that this was above the 3 cents that was offered to carry corn to Buffalo (*Buffalo Commercial Advertiser* 1879a; *Buffalo Courier Express* 1879a). Its departure and arrival went unreported; however, the schooner was recorded passing Detroit bound west on 6 June; the cargo is unknown (*Detroit Free Press* 1879a; *Inter Ocean* 1879a). On June 22, *Margaret A. Muir* made the short trip to Milwaukee to collect 22,000 bushels of wheat to fill out a Chicago shortfall (*Milwaukee Sentinel* 1879a). In July the ship traveled to Duluth, Minnesota to retrieve a cargo of lumber and "short stuff" for Chicago (*Inter Ocean* 1879b). The vessel was noted passing Detroit in August and September; its destination and cargoes are not known (*Detroit Free Press* 1879b; *Hamilton Spectator* 1879; *Inter Ocean* 1879; *Port Huron Herald* 1879).

On 30 October 1879, *Margaret A. Muir* was loaded with corn bound for Buffalo but remained windbound at Chicago for several days (*Buffalo Courier Express* 1879b; *Inter Ocean* 1879d, 1879e). It was able to get away on 2 November but only sailed as far as Milwaukee when it was forced to seek shelter in the bay (3-4 November) along with 15 other vessels (*Buffalo Courier Express* 1879b, 1879c; *Milwaukee Sentinel* 1879b). On the morning of 11 November while making its way in thick fog and foul weather, *Margaret A. Muir* fetched up on the south end of North Harbor Reef at the head of Lake Erie in Canadian waters. The captain and crew left the ship in the yawl and rowed to the mouth of the Detroit River where they hailed the tug *Champion* to come to the ship's aid. The *Champion* struggled to free the *Margaret A. Muir* and was forced to steam to Detroit to fetch a new hawser and a lighter. The ship was freed uninjured on the afternoon of 13 November, the lightered grain was returned to its hold and the vessel continued to Buffalo (*Buffalo Commercial Advertiser* 1879b; *Chicago Tribune* 1879; *Detroit Free Press* 1879c; *Milwaukee Sentinel* 1879c,1879d; *Inter Ocean* 1879f). The schooner was expected back at Chicago on 1 December, but winter weather materialized early that season and with a questionable passage through the Straits under ice conditions the decision was made to overwinter in Port Huron, Michigan. Captain Muir stripped the schooner and made his was back home to Chicago on 8 December (*Inter Ocean* 1879g, 1879h, 1879i).

Margaret A. Muir continued its return to Chicago the first week of April 1880, but encountered a severe storm and was delay in route having to seek shelter in the bay at Milwaukee on 11 - 12 April 1880. It departed on the evening of 12 April and upon its return to Chicago went into

drydock at the Miller Brothers Dry Dock Company (*Chicago Tribune* 1880a; *Inter Ocean* 1880a; *Milwaukee Sentinel* 1880a).

In May 1880, the schooner was chartered to haul iron ore for the Union Iron Works Company of Cleveland at $3.25 per ton. *Margaret A. Muir* took on a load of ore at Escanaba on 6 May. There was a strong wind blowing out of the east as they departed. Captain Muir crossed the bay and anchored near Burnt Bluff (Fish Creek, Wisconsin) waiting for a pause in the storm. Thinking the sea was calming, he departed around daybreak and rounding Poverty Island at 5PM on 7 May. Near midnight *Margaret A Muir* was about four miles from Summer Island, when there was a sudden lull in the wind that caused the booms and gaffs to swing to leeward violently. This action broke the foremast and mainmast three feet below the crosstrees. No one was hurt in the accident. The ship drifted until 3AM when the steambarge *R.J. Hackett* came to its assistance and towed the ship to Port Huron. At Port Huron, the tug *Champion* was employed to take the schooner to Cleveland (*Buffalo Courier Express* 1880a, 1880b; *Chicago Tribune* 1880b; *Cleveland Leader* 1880; *Detroit Free Press* 1880a, 1880b; *Inter Ocean* 1880b, 1880c; *Milwaukee Sentinel* 1880b, 1880c; *Toronto Globe* 1880). Adding insult to injury when the ship arrived at Cleveland, the iron ore shipment was refused because the price of ore dropped between the time of the contract and the delivery of the ore. Captain Muir as forced to sue Union Iron Company over the subsequent year for $8,000 in losses. Six other vessel owners followed suit. The ship received two new masts and an outfit of wire rigging while on Lake Erie at a cost of $4,000. *Margaret A. Muir* returned to Chicago with coal (*Buffalo Courier Express* 1881a, 1881b; *Chicago Tribune* 1881a*; Inter Ocean* 1880d; *Milwaukee Sentinel* 1880d, 1880e, 1881).

Margaret A. Muir carried wheat from Chicago to Buffalo arriving at the port on 27 June, and corn from Duluth to Buffalo arriving on 27 July. The ship cleared Buffalo on 28 July bound for Toledo (*Buffalo Commercial Advertiser* 1880a, 1880b, 1880c; *Inter Ocean* 1880c). *Margaret A. Muir* called at Manistee, Michigan on 7 October to collect an unknown cargo (likely lumber), and brought brimstone from Buffalo to Cleveland in November. At Cleveland the ship was loaded with coal for Racine, Wisconsin. It returned to Chicago and was chartered to carry flaxseed to Buffalo, but was put in winter quarters while loaded, during the first week of December (*Buffalo Commercial Advertiser* 1880d; *Buffalo Courier Express* 1880c; *Inter Ocean* 1880f, 1880g, 1880h, 1880i, 1880j; *Toronto Globe* 1880).

The flax was delivered to Buffalo on 17 May 1881. The ship was unloaded and returned to Chicago (*Cleveland Leader* 1881a; *Detroit Free Press* 1881). In June the schooner took on coal at Cleveland for Marquette, and in July coal was shipped from Black Rock, Ohio to Duluth (*Cleveland Leader* 1881b, 1881c; *Inter Ocean* 1881a). In August and September, the vessel brought railroad iron from Cleveland to Duluth, returning to Cleveland with iron ore from Marquette. The ship wintered in Chicago (*Buffalo Commercial Advertiser* 1881; *Chicago*

Tribune 1881b, 1881c; *Cleveland Daily Herald* 1881; *Hamilton Spectator* 1881; *Inter Ocean* 1881b, 1881c).

Following the prior season's repairs and improvements, in 1882, the schooner's insurance valuation increased to $12,500 maintaining its A2 rating (BLU 1882). *Margaret A. Muir* came out of winter quarters and departed Chicago on 18 April. Newspapers reported the ship was bound for Egg Harbor, Wisconsin for its first trip of the season. The ship was weatherbound at Milwaukee for the night of 19 April and for the day of the 20th. When the weather cleared on the morning of the 21st, the vessel departed for Cheboygan, Michigan (*Milwaukee Sentinel* 1882; *Inter Ocean 1882a*). Little is known about the schooner's routes or cargoes for the 1882-season, and it may be because cargo charters were difficult to acquire. In August, the *Inter Ocean* listed the ship among more than thirty vessels waiting on charters in port in Chicago. Of the few arrivals noted, the schooner brought coal to Chicago from Oswego in October and from Cleveland in November (*Cleveland Leader* 1882; *Inter Ocean* 1882b, 1882c, 1882d).

Loaded with 23,210 bushels of corn for A. Geddes, *Margaret A. Muir* departed Chicago on 3 May 1883 bound for Cape Vincent, New York (*Cleveland Leader* 1883; *Daily Palladium* 1883; *Inter Ocean* 1883a, 1883b, 1883c). Sailing with the schooner *Ada Medora* in the northern part of Lake Michigan, the captains of the two vessels reported that the fog signals on Waugoshance Point and Skillagallee Reef were not in working order (*Inter Ocean* 1883d, 1883f). The ship brought corn to Sandusky in June and to Kingston in July, August and September (*Buffalo Commercial Advertis*er 1883; *Detroit Free Press* 1883a; *Inter Ocean* 1883e, 1883h, 1883i; *Milwaukee Sentinel* 1883a). In October the schooner was chartered to haul coal to Chicago from Charlotte and in November from Cleveland (*Chicago Tribune* 1883a,1883b; *Inter Ocean* 1883k, 1883l).

On 12 July 1883 two of *Margaret A. Muir*'s crewmembers filled a complaint against Captain Muir with the U.S. Customs House at Chicago. The captain paid their hospital taxes but reduced their pay an additional $1.50 to cover costs of medicines (*Detroit Free Press* 1883b; *Inter Ocean* 1883g; *Milwaukee Sentinel* 1883b). After loading and while still in port at Chicago on the evening of 18 September, a "committee" of unionized sailors stormed the ship and forced the non-union crew off the vessel. The ship was forced to remain in port. The next morning the non-union crew returned and while preparing the ship to depart, the "committee" returned and drove them off again. The crew came back later, found the belligerent gang still in the vicinity, but managed to get the schooner away without further confrontation. However, as *Margaret A. Muir* was being towed out of the river by the tug *Prindiville,* at the Clark Street bridge under heavy traffic the steambarge *Emma Thompson* crossed in front of the bow of the *Prindiville* and all three ships collided. *Margaret A. Muir* lost its jibboom and headgear, *Prindiville* narrowly escaped sinking, and *Emma Thompson* was also damaged. The *Margaret A. Muir* was forced to remain in port to be repaired and when it was landed, the crew of non-union men deserted the

ship for fear of another raid (*Cleveland Daily Herald* 1883; *Inter Ocean* 1883j; *Milwaukee Sentinel* 1883c).

In 1884, the schooner required light repairs and because of this *Margaret A. Muir*'s insurance value fell by $3000 but it retained its A2 rating (Inland Lloyds 1884). The schooner departed Chicago on 16 April with 21,000 bushels of grain for this first trip of the season. While loading logs at Escanaba on 6 May, crewman Patrick Roach lost his thumb and three fingers on his right hand. He later sued Captain Muir for $10,000 (*Day* 1885; *Inter Ocean* 1885c). The schooner carried oats to Collingwood in October and encountered a snowstorm while crossing Georgian Bay. In November the vessel was chartered to collect architectural stone from Vert Island in Nipigon Bay, Lake Superior for Chicago. Vert Island quarries shipped brownstone that was used in Chicago's early skyscrapers. The close of navigation came early however, and by 8 November *Margaret A. Muir* was put up for the winter at Chicago (*Buffalo Times* 1884, *Chicago Tribune* 1884a, 1884b; *Inter Ocean* 1884a,1884b, 1884c; *Northern Tribune* 1884).

The ship's value dropped another $500 in 1885 (Inland Lloyds 1885). *Margaret A. Muir* participated in Chicago's lumber trade for beginning of the season. For its first trip, the ship sailed to Charlevoix, Michigan for a cargo of lumber. It arrived there on 9 May 1885 (*Chicago Tribune* 1885; *Inter Ocean* 1885a, 1885b). In November, the vessel carried grain from Racine to Buffalo and collected coal from Charlotte for Chicago (*Cleveland Leader* 1885; *Inter Ocean* 1886a; *Journal Times* 1885; *Racine Journal* 1885).

Bound for Collingwood on 18 April, *Margaret A. Muir* was the first vessel to attempt navigating the ice in the Straits of Mackinac in the spring of 1886 (*Inter Ocean* 1886a). For convenience and to maintain a standard, in 1886 the Lumber-Shovers Union produced a printed rate card for the unloading of lumber from vessels. After *Margaret A. Muir* was half unloaded at the Chicago Lumber Market on 8 September at the standard rate of 30 cents per 1,000 feet, the union-crew went on strike for higher pay demanding 5 cents more per 1,000 feet. Captain Muir was anxious to have his vessel unloaded and to take on grain for his next charter, so he conceded to the price increase. Shortly afterwards, the men went on strike again for another 5 cents more and before the task was complete, they walked off for a fourth time demanding more pay (*Chicago Tribune* 1886; *Inter Ocean* 1886b). On 21 October 1886 while bound from Buffalo to Chicago with coal, the schooner experienced a sudden shift in the wind while off Pointe Aux Barque and lost its canvas. The vessel then struck bottom in the trough of a wave and sprung a bottom plank. The schooner required a tow to Port Huron for repairs. The recaulking and repairs cost $800. The ship continued sailing through November (*Cleveland Leader* 1886a, 1886b; Inland Lloyds 1886; *Milwaukee Sentinel* 1886).

Minimal records were discovered for the 1887-season. The ship called at Manitowoc on 30 June and 25 August 1887 to deliver coal to the Goodrich dock (*Manitowoc Pilot* 1887a, 1887b). While enroute to Buffalo in early October during a gale, *Margaret A. Muir* struck the bottom of

Lake Erie, its fore gaff was carried away, its foresail was split, and some of its sails were blown off. The tug *Bruce* towed the ship into Buffalo for repairs (*Buffalo News* 1887; *Manitowoc Pilot*. 1887a, 1887b).

Margaret A. Muir's value dropped another $500 in 1888 to $8,500 (Inland Lloyds 1888). Only two records were located for the 1888-season. The schooner's arrival was recorded on 27 October at Fairport Harbor, Ohio from Escanaba when it delivered a cargo of iron ore. The next day the ship was chartered to haul coal from Cleveland to Chicago for 95 cents per ton (*Cleveland Leader* 1888a, 1888b).

In March 1889, *Margaret A. Muir* was chartered to take 24,000 bushels of corn from Chicago to Cleveland for its first trip of the season (*Buffalo Courier Express*1889a; *Journal Times* 1889; *Kingston Daily News* 1889). The ship brought iron ore from Escanaba to Sandusky in May, June and August for the Cleveland, Southwestern & Columbus Railway. Additional ore cargos were moved from Escanaba to Pine Lake in September and from Escanaba to Cleveland in October. Once the ore was unloaded, coal was taken aboard at Cleveland for the trips west (*Buffalo Courier Express* 1889b, 1889c*; Cleveland Leader* 1889a, 1889b; *Inter Ocean* 1889a, 1889b, 1889c, 1889d, 1889e; *Sandusky Register* 1889a, 1889b, 1889c).

On 16 October 1889 when the schooner arrived at Cleveland, it was missing its jibboom, fore topmast, main topmast, and three jib sails. All items were lost in a gale. Repairs were made at were made at Ship Owner's Dry Dock and Upson, Walton & Company in Cleveland, and included recaulking, new stanchions, planksheer, and railings (*Buffalo Courier Express* 1889d; *Cleveland Leader* 1889c; Inland Lloyds 1889).

Captain Muir continued to employ non-union crews into the 1890 season. A dispute occurred in July 1890 at Detroit which cause him to find another mate and full crew (*Inter Ocean* 1890; *Milwaukee Journal* 1890). In August the ship carried coal from Cleveland to Green Bay (*Cleveland Leader* 1890; *Detroit Free Press* 1890). On 13 October 1890, *Margaret A. Muir* was moored at the Buffalo Customs House when the steamer *Northern Light* passed at high speed. Its wake parted the schooner's lines causing it to drift off, nearly striking another vessel (*Buffalo Courier Express* 1890).

Margaret A. Muir's insurance valuation dropped again in 1891 to $5,500. Because of this, the ship received new floor and ceiling planking throughout (Inland Lloyds 1891). Although he continued his anti-union stance, on 21 June 1891 Captain Muir could not otherwise find a crew, and he applied at the Seamen's Union in Cleveland (*Inter Ocean*. 1891a). The ship called at Lake Linden on the Keweenaw Peninsula and Marquette in July1891 (*Buffalo Courier Express* 1891a; *Cleveland Leader* 1891a, 1891b; *Inter Ocean* 1891b). After delivering iron ore to Cleveland, it collected a cargo of coal and departed for St. Ignace, Michigan on 4 August (*Cleveland Leader* 1891b). When the ship returned to Cleveland in late August, it was loading

coal near the Seneca Street bridge when the Seaman's Union staged an attack on the ship where they attempted to physically remove the non-union crewmembers. The police were summoned and stood watch over the vessel until it departed. That night, the union staged a similar skirmish on the schooner *Celtic* that seriously injured one man (*Cleveland Leader* 1891d). *Margaret A. Muir* made only one more call at Cleveland that season on 13 September (*Buffalo Courier Express* 1891b).

With fresh repairs to its cargo hold's planking, the ship's value rose $500 in 1892 (Inland Lloyds 1892). The vessel was recorded arriving light at Chicago on 30 June. It was in port only a few days before receiving a charter to carry gypsum from Alabaster, Michigan to South Chicago (*Detroit Free Press 1892; Inter Ocean 1892a*). On 14 July while lying at the elevator at Point Edward, Ontario, the unionized crews from the schooners *Minnie Slauson* and *Thomas H. Howland* cut *Margart A. Muir'*s lines. Of course, the crews of the union schooners claimed otherwise. Fortunately, *Margart A. Muir* was able to escape any significant damage (*Buffalo Enquirer* 1892; *Buffalo Courier Express* 1892; *Grand Rapids Herald* 1892). On 12 September the vessel came ashore at Alabaster, requiring 50 tons of plaster to be lightered from the ship before the tug *Pensaukee* could free it. It carried on to South Chicago arriving on 22 September. On 13 October the ship arrived at Chicago from Bay City, Michigan and departed on 16 October for Midland, Michigan - the cargos are unknown (*Chicago Tribune* 1892a,1892b, 1892c*; Inter Ocean* 1892b; *Plain Dealer* 1892; *Toledo Blade* 1892).

On 21 March 1893 *Margaret A. Muir'*s enrollment was surrendered at the port of Chicago for an ownership change. David Muir sold a partial share in the vessel to the ship's new Master, Captain David Clow (Bureau of Navigation 1893). David Clow was born in Watertown, New York in 1822. He came to Wisconsin around 1846, first to Oak Creek, and finally settled on Chambers Island, Wisconsin in 1852 with his wife Sarah where they raised their family of nine children. Along with his wife and family, Clow built several scow schooners on the remote island - *Sea Lark*, *Lewis Day* and *Sarah Clow*. Captain Clow was an owner-operator of these vessels and captained a few others throughout his career, including the scow *Ino* in 1854, and the scow *Consuelo* in 1863. In 1883, he purchased the schooner *A.P. Nichols* and sailed that ship until it wrecked on the rocks at Pilot Island, Wisconsin in 1893. After which, he obtained a share in the *Margaret A. Muir* (*Inter Ocean* 1893).

SUNK IN DEEP WATER

SCHOONER MUIR FOUNDERS OFF AHNAPEE THIS MORNING.

Figure 31. Headline *Milwaukee Journal* 30 September 1893

Margaret A. Muir continued in the gypsum trade between Alabaster and South Chicago in the spring of 1893 (*Inter Ocean* 1893a). On 29 September *Margaret A. Muir* was in the middle of Lake Michigan sailing southwest bound to South Chicago with a cargo 650 tons of salt valued at $3,500 from Bay City, when a southeast gale struck. The ship's machinery was functioning well through the night, but on the morning of 30 September as the schooner was three miles off Ahnapee, Wisconsin, it fell into a trough of the mountainous sea as an enormous wave broke over the deck. The captain ran aft and cut the lines to free the small boat just as the schooner keeled over and sank in 50 feet of water. The crew of seven took to the boat, bailed it free of water and made their way three miles through the breakers and to the beach. The ship was valued at $6,000 but only insured for $4,000 with Smith, Davis & Co. of Buffalo. The company also insured the cargo independently (*Ahnapee Record* 1893a, 1893b, 1893c, 1893d; *Buffalo Courier Express* 1893; *Chicago Tribune* 1893a, 1893b; *Door County Advocate* 1893a, 1893b; *Door County Democrat* 1893; *Green Bay Press Gazette* 1893; *Inter Ocean*1893b; *Janesville Gazette* 1893; *Manitowoc Post*, 1893; *Manitowoc Pilot* 1893a, 1893b; *Milwaukee Journal* 1893; *Milwaukee Sentinel* 1893a, 1893b).

Following the sinking of the *Margaret A. Muir*, the loss of schooner *A.P. Nichols* (sunk the season prior on the rocks at Pilot Island), and the loss of the schooner *Lewis Day* (driven ashore on Plum Island in a storm in 1881), Captain David Clow announced his retirement stating, "I have quit sailing for the water seems to have no liking for me." Two of *Margaret A. Muir*'s masts remained standing and posed a hazard to navigation. The government tug *Lorena* arrived in mid-October but only managed to remove the ship's bowsprit and stern - these pieces of wreckage were moved and left sunk in the river. In July 1894, one of the Goodrich steamers struck the derelict pieces. The *Lorena* returned on 15 July 1894 and dynamited the wreck dropping the remaining obstructions to navigation (*Sturgeon Bay Democrat* 1894; *Door County Advocate* 1894a, 1894b, 1894c).

Site Description

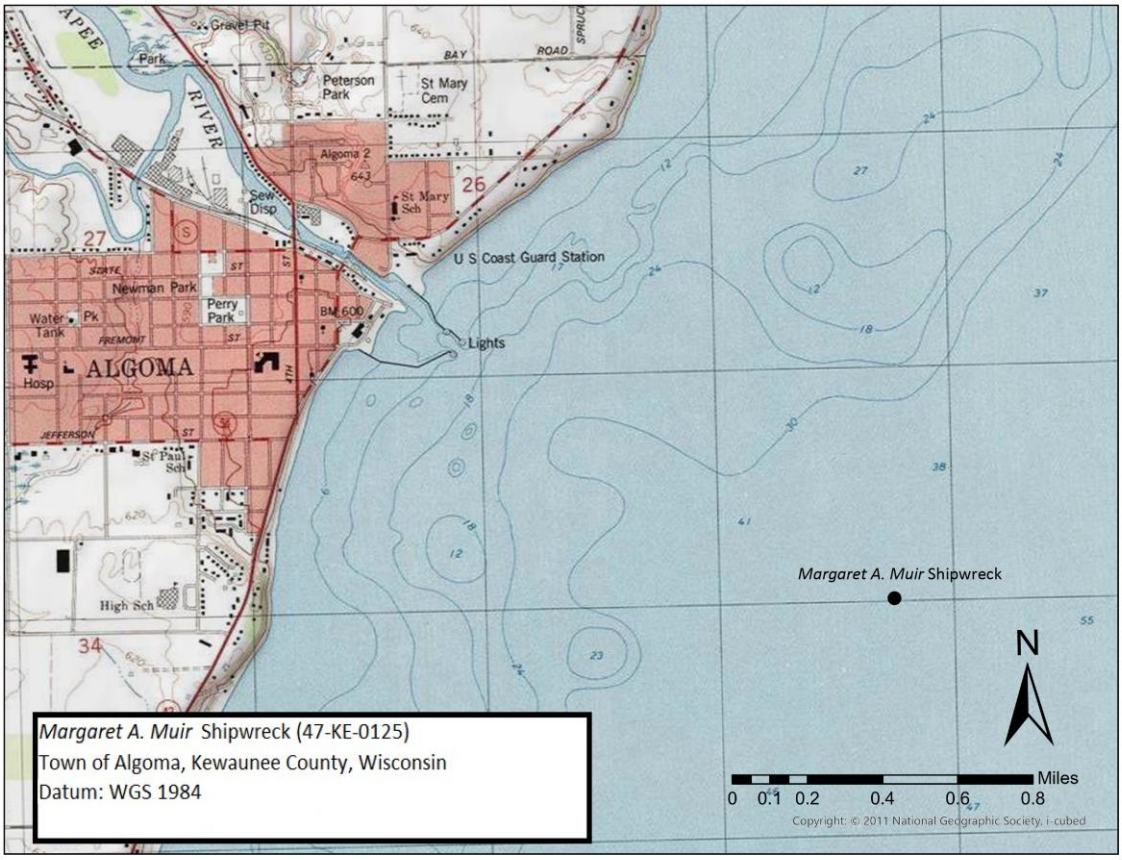

Figure 32. Location of the *Margaret A. Muir* shipwreck site

The remains of the schooner *Margaret A. Muir* (47SB0474) sit on a heading of 230 degrees, 1.65 miles southeast by east of the of the Algoma Pierhead Light, in Algoma, Wisconsin, and rests in 57 feet of water under the surface of Lake Michigan. The vessel is broken at the turn of the bilge with all components of the ship present less its masts and a portion of its stern. The remains are well-preserved due to the recentness of the discovery. All of *Margaret A. Muir*'s deck machinery, centerboard, centerboard trunk, keelson and hull structure remain extant on the site.

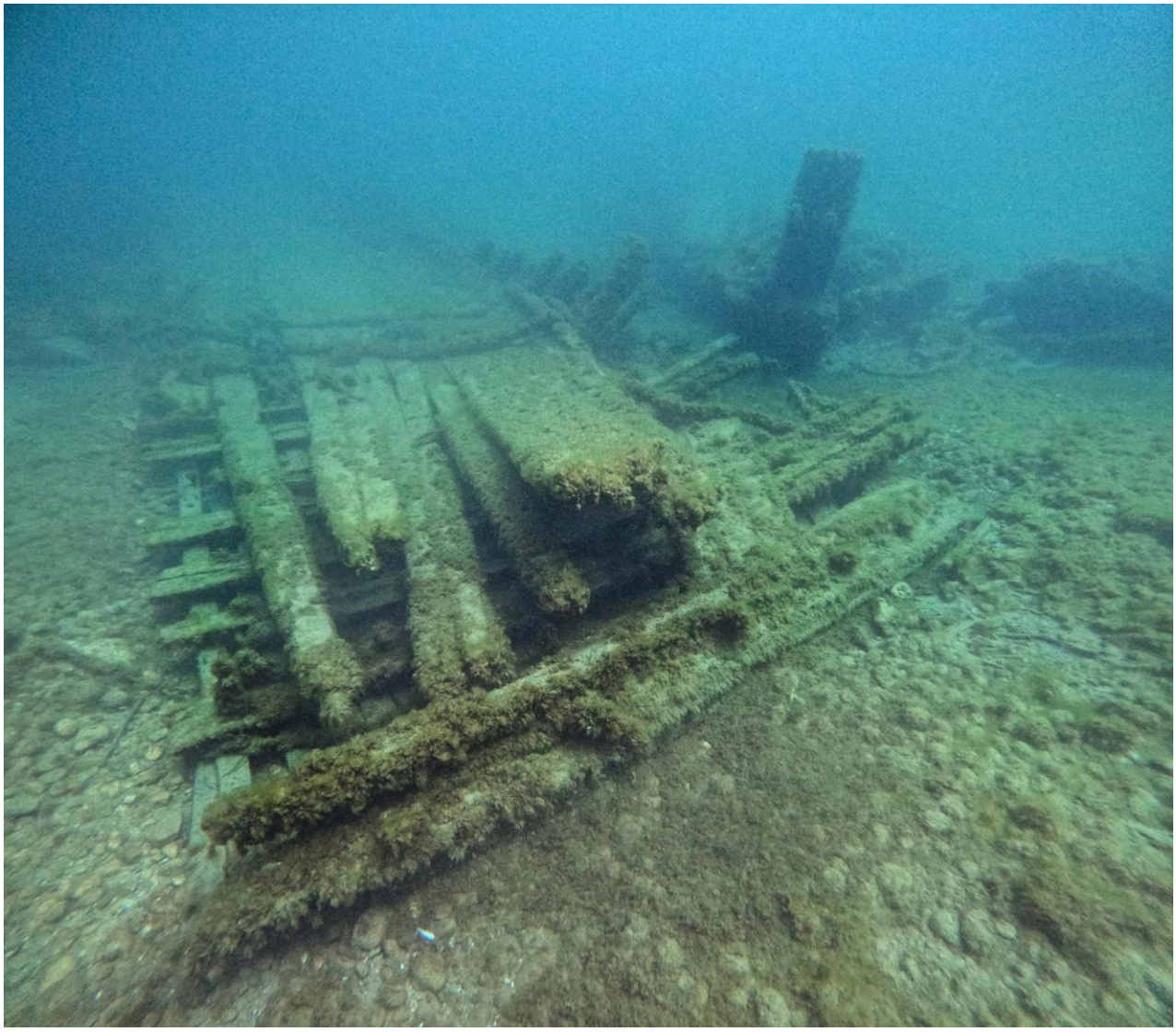

Figure 33. *Margaret A. Muir*'s false stem and starboard hull

The schooner *Margaret A. Muir* was constructed by Master Shipbuilder Hans M. Scove at the Hanson & Scove shipyard in Manitowoc, Wisconsin in 1872. On 30 September 1893, the *Margaret A. Muir* sank off Algoma, Wisconsin while the schooner was sailing from Bay City, Michigan to Chicago, Illinois, with a cargo of salt. As an integral part of the maritime transportation system, many features of this vessel type were common to other ships on the Great Lakes. As mentioned in the Multiple Property Documentation *Great Lakes Shipwrecks of Wisconsin* (Cooper and Kriesa 1992), the schooner was the favored lake rig until the decline of commercial sail on the Great Lakes. The schooner has been called the most important American sailing rig, both in total tonnage built, and tonnage of cargo carried. They were used mostly for rapid, short voyages with a quick cargo turnover and dominated the American coastal trade. The efficiency of this rig combined with a Great Lakes clipper hull (incorporating a schooner rig and a centerboard) is proven by the long existence of these vessels, which were used commercially in the United States well into the twentieth century. Needing only a small crew

and handy in confined waters, the schooner increased in use at a time when other rigs were disappearing (Chapelle 1935; Greenhill 1980; Labadie and Murphy 1987; MacGregor 1984).

Figure 34. *Margaret A. Muir*'s keelson with rider and upright deadwood in distance

The remains of the schooner *Margaret A. Muir* were located in May 2024 by maritime historians from the Wisconsin Underwater Archaeology Association (WUAA) as the result of a deliberate search. In cooperation with WUAA, the wreck site was investigated in May and July 2024 by Wisconsin Historical Society (WHS) maritime archaeologists and volunteers. A baseline was stretched 130 feet down the centerline of the bilge section and measurements were taken from this baseline. The length of the shipwreck is 130 feet, and the vessel's beam, measured across the floor to the turn of the bilge at its widest point, is 26 feet. Given the wreck dimensions, location, the lack of cargo remaining in the hold, and a comparison of vessel losses in the vicinity based on historic newspaper accounts, the vessel remains were determined to belong to the schooner *Margaret A. Muir*.

The *Margaret A Muir* shipwreck rests on its keel with the bow of the ship leaning 9 degrees to the port side. At the center of the ship there is list of 2 degrees to starboard and at the stern a 12-degree list toward the starboard side. This indicates that the keel is broken and twisted.

The keelson measures 2.3 feet wide and is flush with the floor. As such, the thickness was unable to be determined. A first rider is fastened atop the keelson from 11 to 22 feet on the baseline and is 1.0 feet thick. A thin second rider keelson sits on top of the first rider keelson. It is present from 11 to 18 feet on the baseline and is 0.2 feet thick. A third rider keelson sits atop the second rider keelson is present from 11 to 18 feet along the baseline. It measures 1.7 feet wide and 0.4 feet thick and tapers to 0.2 feet thick on the aft end.

The leading edge of the centerboard trunk would have been positioned at 28 feet on the baseline. The trunk has broken from the keelson and lies off the port side of the vessel's bilge section. It is comprised of 9 boards, each 1 foot wide and 0.5 feet thick. Overall, the trunk measures 9 feet tall, 28.2 feet long, and is 1.8 feet thick. It broke off with a 24-foot piece of the starboard side of the first rider keelson which is split to accommodate the centerboard passing through the keel. The halved first rider keelson measures 1.0 feet wide and 0.9 feet thick. A fragment of the centerboard extends 4.5 feet from the bottom of the trunk. Boards for the centerboard measure 1.0 feet wide and 0.4 feet thick. The centerboard's pivot pin remains 5 feet from the leading edge of the trunk and 0.5 feet above the rider keelson fragment. The pin is 0.2 feet in diameter. The ship's centerboard winch lays in the sand off the aft end of the trunk. The base of the frame of the winch measures 2 feet long and 3 feet wide. It has one barrel with warping ends. The spur wheel is 1.8 feet in diameter and 0.2 feet thick.

Outward from the keelson structure is one ceiling plank that measures 1.2 feet wide, then a 0.6 feet gap. This gap represents the position of the limberboard which is missing. It would have fit above the limber, the channel used for cleaning the bilge. The limberboard is missing for nearly 80 feet on the starboard side. The limberboard is only missing in two 8-foot sections on the port side. The ceiling continues outbound of this gap on both sides of the ship.

A slot for the centerboard penetrates the keel and keelson from 32.5 feet to 67.2 feet on the baseline. A fragment of the centerboard that measures 0.4 feet thick starts 39.8 along the baseline. Aft of 57.3 feet on the baseline and on either side of the centerboard trunk, the keelson is split and measures 0.8 feet wide and 1.1 feet thick.

The capstan is located on the starboard side of the keelson assembly aft of the centerboard slot. It measures 3.3 feet tall. The top of the capstan is 1.0 feet wide, and its base is 2.0 feet square. A bilge pump is located 6.5 feet to the port side of the bilge section 80.5 feet aft of the bow. The base of the bilge pump is 2.6 feet wide and 1.0 feet deep. The central cylinder is 0.9 feet in diameter and 2.4 feet tall.

Figure 35. *Margaret A. Muir*'s keelson assembly with centerboard slot. Capstan has fallen and rests on the starboard side of the keelson

A first and second rider keelson is again present from 79 feet to 107 feet on the baseline. These keelsons measure 0.3 feet thick and 0.5 feet thick. Pump shaft holes 0.4 feet in diameter penetrate the keelson at 27.6 feet and 67.5 feet on the baseline. A slot for a stanchion or machinery support was found cut 0.35 feet deep into the keelson and measures 0.2 feet long and 0.5 feet wide at 114.5 feet along the baseline. 112.7 feet aft of the bow, a series of riders are stacked on top of the keelson to form steps. They measure 1.0 feet thick and are 1.1 feet, 1.0 feet, 1.6 feet, 1.3 feet, 1.0 feet and 1.0 feet long. The stern rises 10 feet above the bottom. The sternpost is 0.9 feet wide and sculpted 0.2 feet to accept the rudderpost.

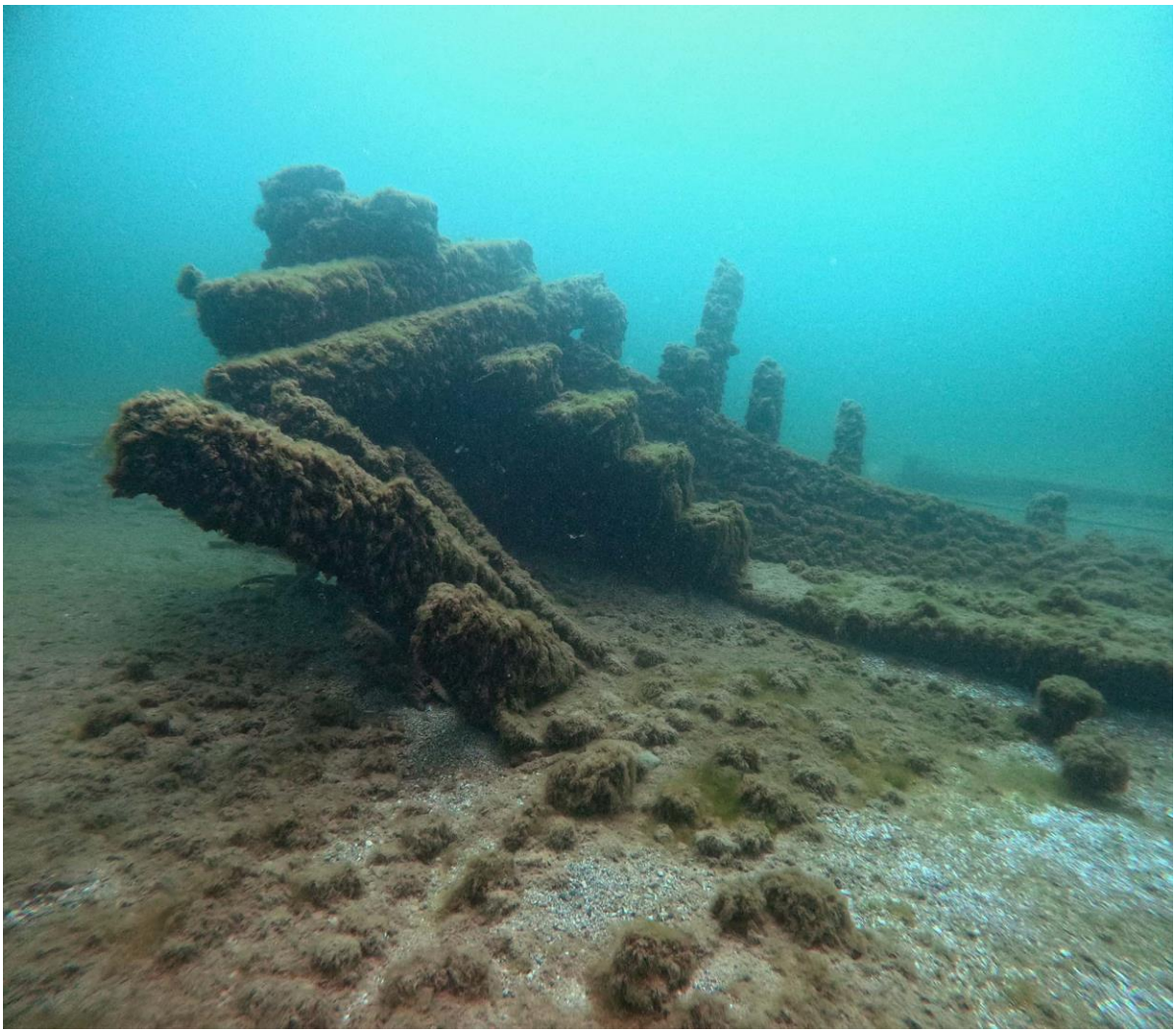

Figure 36. *Margaret A. Muir*'s unique stepped stern formed with stacked riders

The ship's rudder is 19.4 feet tall from top of the rudderpost to the end of the pintle. The rudderpost is 1.1 feet in diameter. An iron ring 0.45 feet wide encircles the top of the rudderpost and was part of the steering quadrant. A portion of one spoke of the quadrant remains attached and the others have broken off flush. The rudder blade starts 5.3 feet from the top of the rudderpost. The blade is comprised of four boards and is 14.1 feet long and 4.7 feet wide. The widest point is the bottom of the blade. The rudder blade is tapered from 0.75 feet thick at the rudderpost to 0.2 feet thick at the trailing edge. The pintle is centered on the bottom of the rudderpost and measures 0.5 feet long and 0.15 feet wide.

The port side hull fragment has drifted aft and lays at a 60-degree angle to the keelson. It is 101 feet long and sits ceiling up. The hull is extant from the turn of the bilge to the deck shelf. No portion of the bulwark is present. Seven hanging knees remain attached to the hull section. Knees measure 4.0 feet tall, 2.3 feet long at the deck, 0.5 feet thick and 1.1 feet across the throat. The starboard side hull is 5 feet forward of the bilge section and rests at a 40-degree

angle to the keelson. It is 132 feet long and rests ceiling up with much of its bullwark intact. However, only a few nubs of the hanging knees remain.

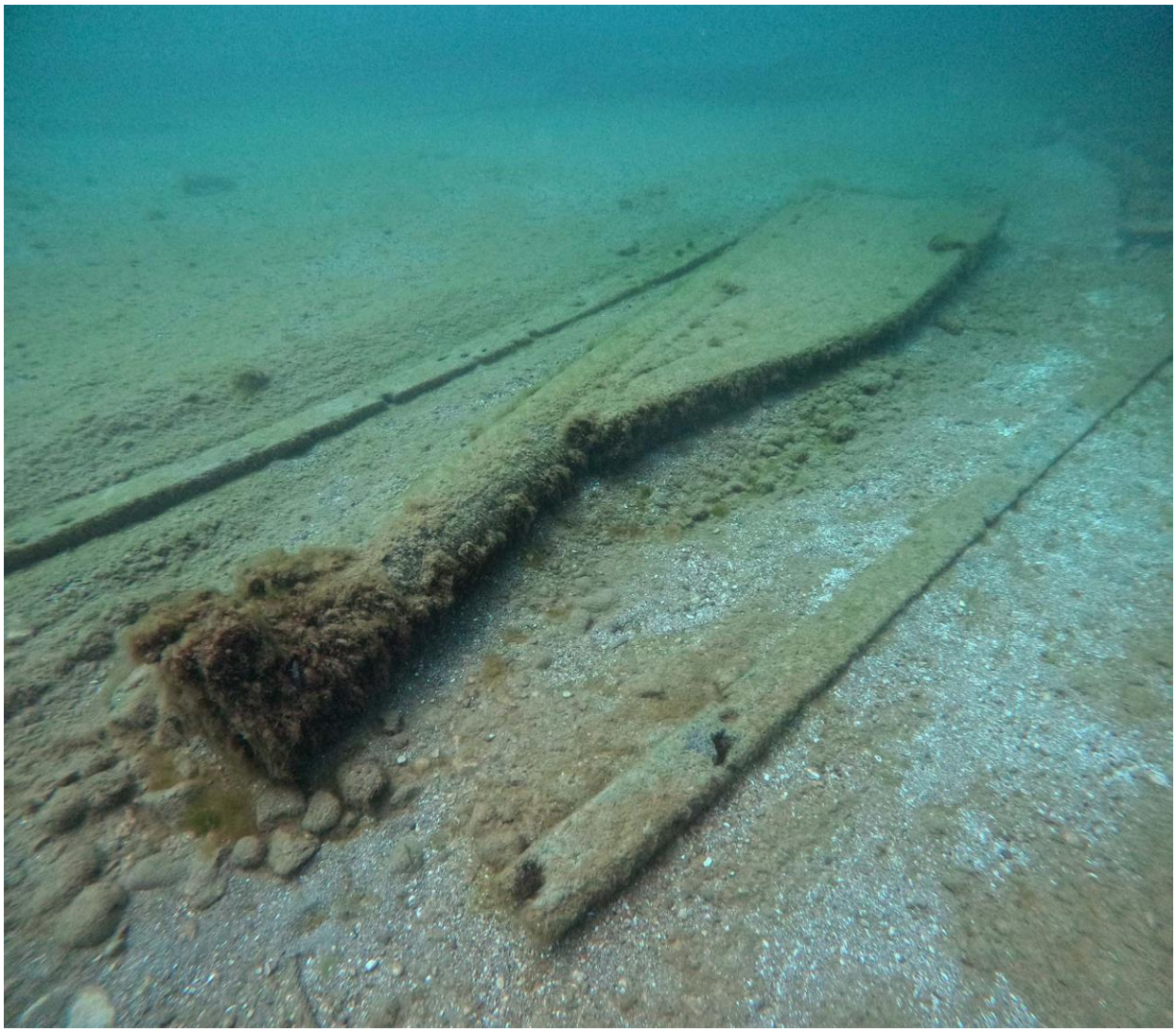

Figure 37. *Margaret A. Muir*'s rudder

Bulwarks are intact from 59 feet to 132 feet on the starboard hull fragment. Bulwark stanchions measure 0.6 feet sided and 0.4 feet moulded, with 1.0 feet between stanchions, or 1.6 feet spaced. Atop the stanchions sit the cap rail which measures 0.4 feet wide and 0.1 feet thick. Two paneling pieces are mounted to the inside of the bulwarks down from the cap rail. These measure 1.0 feet wide and 0.2 feet thick with a 0.3-foot space between the boards. Below this is 2.0 feet of open bulwarks down to the covering board. The covering board measures 1.2 feet wide and 0.2 feet thick. The covering board sit on top of the deck shelf. The deck shelf measures 0.65 feet wide with gaps notched 0.7 feet long that would have accepted the deck beams. Deck beams had a space of 2.9 feet between beams. 3.6 feet below the deck shelf is a 0.3 feet gap in the ceiling planking that forms a row of salt channel used to brine the ship. A

single bitt is located 42.6 feet aft of the bow, and a set of bitts was found 80.4 feet from the bow on this hull fragment. The bitts measure 5.0 feet tall, and each post measures 0.7 feet square with 2.4 feet between each post.

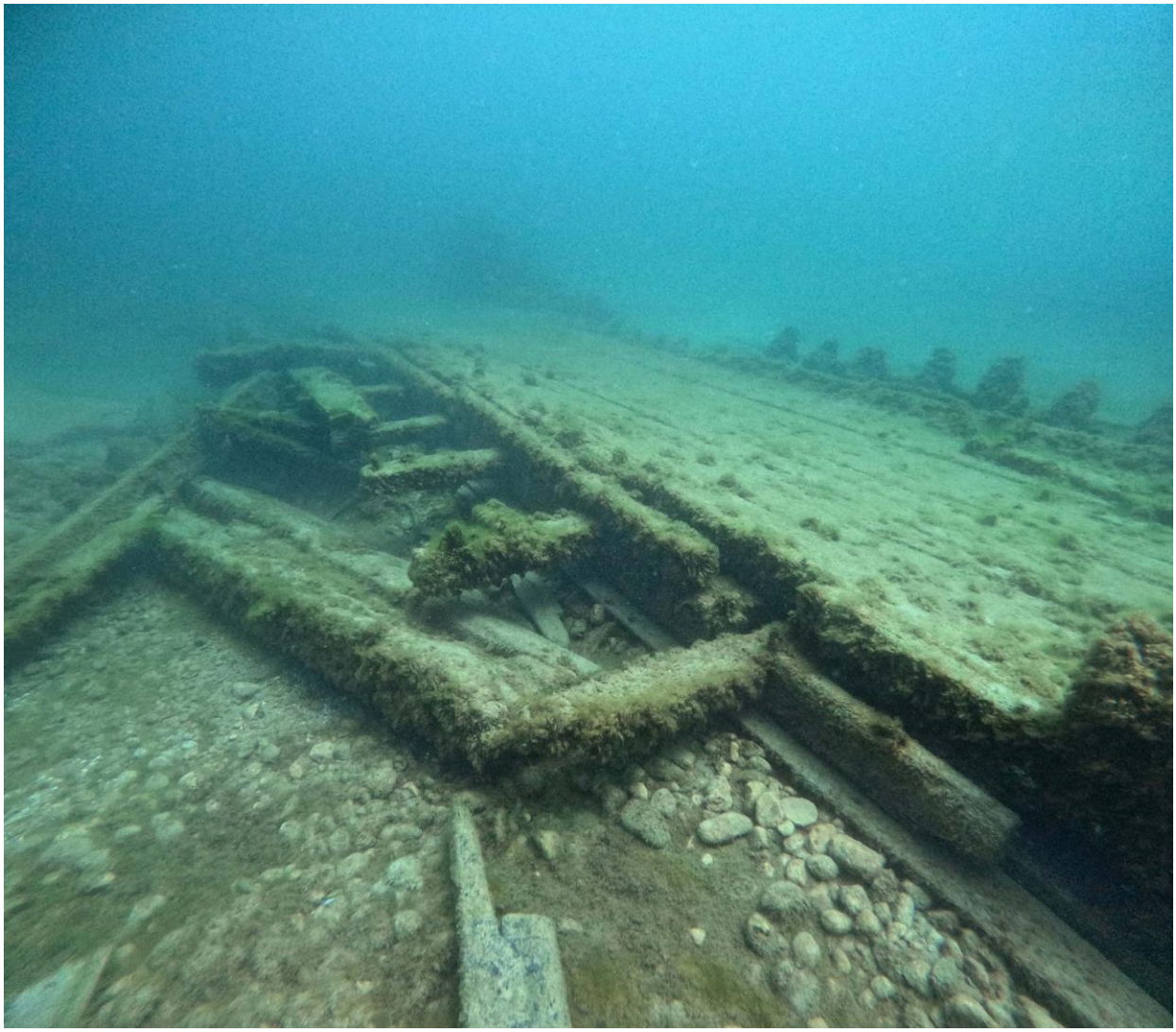

Figure 38. *Margaret A. Muir*'s starboard side hull and bulwarks

The ship's windlass lies 9.8 feet off the port side at the bow. The barrel has separated from the stand. The windlass barrel measures 12.1 feet in overall length. The central barrel containing the purchase rims and pawl rim measures 2.1 feet long and 0.8 feet in diameter. The whelps measure 2.4 feet long and 1.6 feet in diameter. The windlass ends are different from each other, with one measuring 1.5 feet long and the other 1.8 feet long. Anchor chain is strung off the windlass 108 feet in a gradual loop to the south and is also thickly piled across the keelson assembly aft of the deadwood. The chain passes through a hawsepipe deposited off the

starboard side hull section. It measures 1.2 feet outside diameter with an interior diameter of 0.6 feet.

Figure 39. *Margaret A. Muir*'s windlass and port side anchor

The starboard side anchor lies 31.9 feet aft of the bow, alongside and slightly under the starboard side hull. It has a wooden stock measuring 11 feet. Its shaft is 8.1 feet from stock to crown with arms measuring 2.6 feet from shaft to bill. Its flukes measure 1.4 feet across the palm and 2.0 feet long.

The port side anchor lies 14.7 feet to the port side of the bow. It has a wooden stock measuring 10 feet long that is 1.0 feet in diameter at the shaft, and 0.6 feet in diameter at the distal ends. Its shaft measures 9.3 feet from stock to crown with arms measuring 2.8 feet from shaft to bill. Its flukes measure 1.7 feet across the palm and 2.0 feet long.

Figure 40. *Margaret A. Muir*'s starboard side anchor

A fragment of the vessel's transom was located at the aft end of the port side hull fragment. The fragment is 3.05 feet tall and 22.5 feet wide (although one end is buried in the sand), and 0.9 feet thick. The piece has evidence of a nib scarfing. At the center of the transom fragment is a rabbet that, although well-worn, varied in depth between 0.1 feet to 0.3 feet deep.

Several other tools and pieces of the ship's fittings lay at various places around the wreck site. Fragments of wire rigging are deposited at various locations around the site. A mast cap rests in the sand to the starboard side of the centerboard. The mast cap is 2.7 feet long, 1.1 feet wide and 0.3 feet tall. The square side has a 1.0 feet square internal dimension and would have fit on top of the lower portion of a mast. Given the location, it may have belonged to the mainmast. The circular side is 1.1 feet in diameter and would have fit the topmast. Part of a trestle tree was located under the starboard side hull; it measures 3.9 feet long. The front plate measures 1.7 feet long and the cross-brace measures 1.3 feet long with a 1.1- foot space to accept the top. Several different rigging blocks are located on the site. A double sheeve block 0.6 feet long, 0.4 feet tall with an iron hook on one end. A single block 0.9 feet long and 0.25 feet tall with an

iron eye at one end. A large sheet block 1.4 feet long and 0.4 feet tall with a 0.5 feet long iron hook. Chainplates measure 0.3 feet wide and 0.025 feet thick. Deadeyes associated with the chainplates measure 0.5 feet tall and 0.3 feet thick. No masts or spars remain on the site, but wire rigging remains draped across the shipwreck.

A mallet was found in the stern of the ship wedged between frames at 106.6 feet on the baseline. The head measures 0.6 feet long and 0.3 feet in diameter. Its handle is 2.2 feet long. A crowbar was also found in this same area. It measures 4.6 feet long and is 0.1 feet thick. The vessel's tiller arm was located on the starboard side of the keelson structure in the stern. The arm is 0.2 feet in diameter and measures 4.0 feet long. It forks into a two-pronged 1.7-foot-long saddle spread 0.8 feet apart and ending in ball ends, 0.3 feet in diameter. The balls would have fit into the top of the steering mechanism. At the other end, the arm is built up 0.4 feet long and 0.5 feet thick. A fairlead was located 72 feet to the starboard side off the stern in the sand. It likely was atop a corner of the transom. The fairlead measures 2.0 feet long, 0.5 feet wide and 0.5 feet tall. The opening to accept the line is 0.9 feet at the top.

Two fragments of the cargo hull scrappers were located with the debris field. They are curved, shaped to match the lines of a ship's hull and measure 5.5 feet and 4.1 feet on its sides. On the end, it is smoothed and measures 3.7 feet. At the top it measures 3.0 feet and has two iron eyes formed from folded over metal straps to form one half of a hinge 0.2 feet in diameter. The wood that forms the interior of the device is 0.7 feet thick. One is located under the starboard side hull fragment 76.3 feet aft of the bow; the other is located off the port side. Due to the shifting sands in the area, many more artifacts likely remain protected beneath the sand.
It should be noted that the site has marked lack of invasive quagga mussel colonization. It sits within a depression of the lakebed carved out around the shipwreck features. Both general observations may be connected to the salt cargo and should be studied in the future

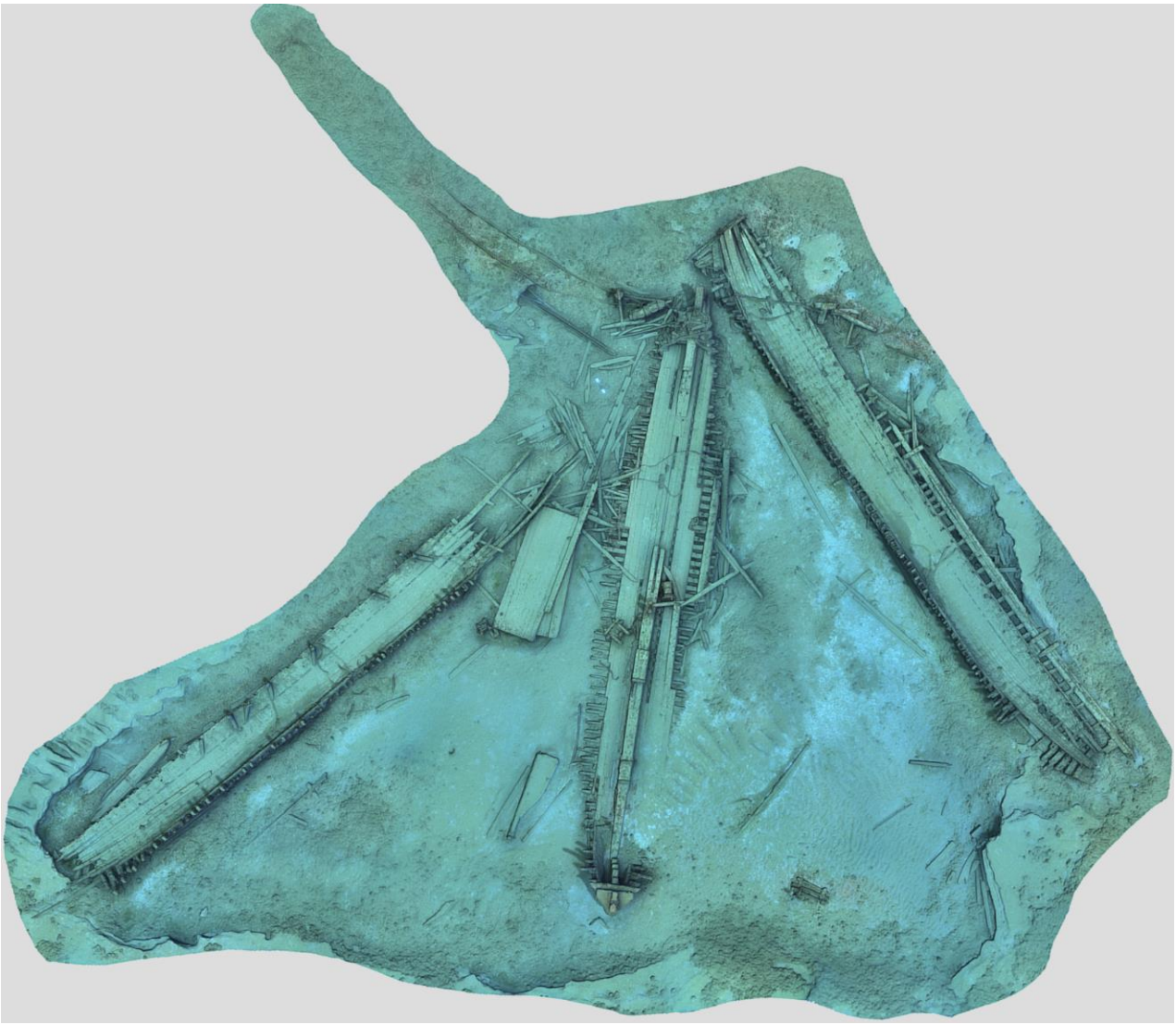

Figure 41. Photogrammetry model of *Margaret A. Muir* (Zach Whitrock)

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CHAPTER SIX
Barkentine *MOJAVE*

In mid-June 1863, the keel of *Mojave* was laid down at the shipyard of Master Shipbuilder Stewart McDonald in Detroit. It was constructed with identical dimensions and build as the barkentine *Ravenna*. *Mojave* was launched from the yard in 1861 for George W. Bissel to be used in support of the produce and commission house, Backus & Bissell. *Mojave* was built for $17,000, also for Bissel. Construction proceeded throughout the summer months and the boat's launch was set for 12 November 1863. Inclement weather pushed the ceremony back a few days. The ship was christened on the afternoon of 16 November 1863 by the shipbuilder's niece, who named the ship *Mojave* after the Native American people she had learned about in school who were indigenous to the Colorado River and Mojave Desert. The staunch new ship glided off the ways and splashed to the cheers of the multitude that collected for the event (*Buffalo Daily Courier* 1863b; *Detroit Free Press* 1863a; Register of the Ships of the Lakes & River St. Lawrence, 1864)

Mojave was described as a bark-rigged canaller measuring 136 feet 8 inches long and 26 feet in breadth with a depth of hold of 11 feet 6 inches. These dimensions were specified so that the vessel could transit the Welland Canal, the canal that bypasses Niagara Falls and enables ships to trade between the upper lakes and Lake Ontario. The vessel's capacity was calculated at 381 4/95 tons. It had three masts, a square stern, and no figurehead. *Mojave* was built with features used on the open ocean, which was uncommon so it could participate in the Detroit - Liverpool trade. Its bulwarks were taller than ordinary, and a monkey rail was added on top, which heightened them considerably. Other mechanical improvements were added to make it strong and seaworthy. The cabin accommodations were elaborate and fully equipped making *Mojave* one of the most elegant ships of its kind afloat. It was described as exquisitely beautiful and a fast sailer. *Mojave*'s home port was Detroit, and it was given an insurance rating of AE (Bureau of Navigation 1864*; Detroit Free Press* 1863a; 1863b; Register of the Ships of the Lakes & River St. Lawrence 1864)

Captain Darius Nelson Malott was named in the press as the barkentine's Master. Before *Mojave*, he commanded the bark *Ravenna*. Before *Ravenna*, he oversaw the schooner *Augusta*, which was also owned by George Bissel. Malott was a young, but experienced and competent navigator, but his career was darkened by tragedy. On the night of 8 September 1860, *Augusta* rammed the steamer *Lady Elgin* in a gale. The *Augusta* struck the steamer below the waterline, sinking the steamer and sending to the bottom 388 members of Milwaukee's Union Guard who were returning from Chicago where they had spent the day listening to political and campaign speeches in support of presidential candidate Stephen Douglas. *Augusta* displayed only a single white light, mounted on the Samson post at the bow. Malott claimed that he was unable to avoid the collision. Malott was arrested and tried in Chicago and found not guilty of navigational negligence (*Detroit Free Press* 1863a; *Marine Record* 1888; Stein 1969).

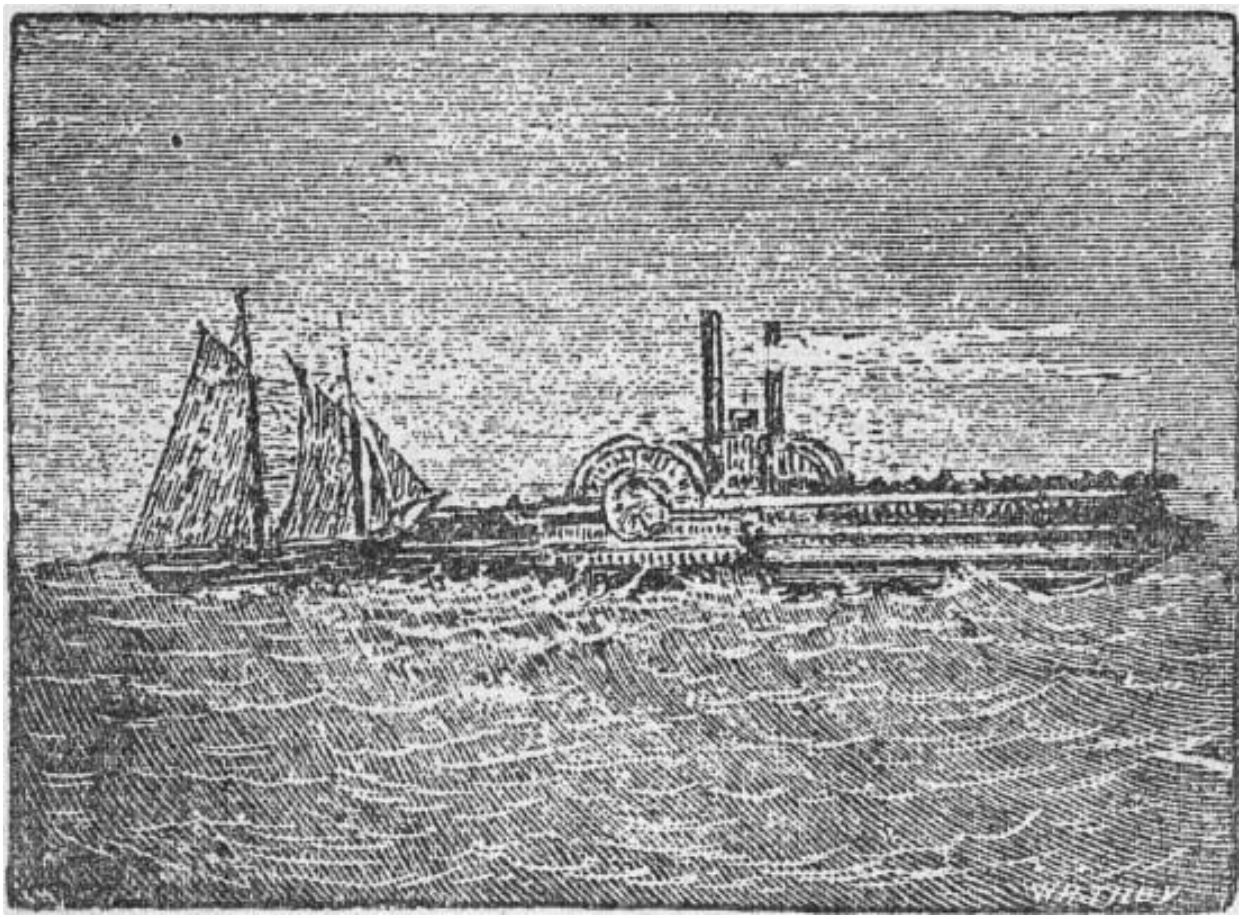

Figure 42. "THE LOSS OF THE LADY ELGIN" (Warwick's old Canadian Third Reader)

Although Malott was acquitted of charges in the deaths of the 388 passengers aboard the *Lady Elgin*, in the court of public opinion, he was a *persona non grata* in Milwaukee and Chicago. Starting in 1861, Bissel changed *Augusta*'s name to *Colonel Cook* and moved it to a route between Detroit - Liverpool carrying barrel staves. The ship was given a new captain, Captain Jasper Humphrey. When Malott was cleared of all charges, he was given the command of Bissel's new ship, the barkentine *Ravenna.* He sailed *Ravenna* from Chicago in June 1861, only returning on one other occasion to collect a cargo of grain in late September of the same year (*Chicago Tribune* 1861; *Boston Daily Advertiser* 1861; Stein 1969). Captain Malott sailed routes overseas connecting with the ports of Quebec, Cleveland, and Detroit through at least the end of the 1863-season, largely avoiding the lingering Lake Michigan politics that surrounded the *Lady Elgin* accident (*Boston Daily Advertiser* 1861; *Buffalo Daily Courier* 1863a; *Chicago Daily Tribune* 1864a; *Cleveland Daily Leader* 1863a, 1863b; *Marine Record* 1888; *New York Herald* 1864).

It is not known if *Mojave* sailed in the 1863 season. Bissel did not enroll the vessel at the Customs House until the following spring. No reports of arrivals or clearings for the ship were

located before this. *Mojave* was first registered at the port of Detroit on 6 April 1864. The document indicated that George W. Bissel owned a three-quarters share, with John Davidson owning the remaining one-quarter of the barkentine. Instead of Captain Malott at the helm, Captain Walter Perry was listed as its Master (Bureau of Navigation 1864).

After enrolling the ship, *Mojave* immediately departed Detroit with a cargo of hay bound for Toledo. Once the cargo was discharged, *Mojave* returned west, bound for Pigeon Bay to collect a cargo of wood for Chicago. During the return trip on the night of 7 April 1864, while sailing in a thick fog, the schooner grounded on the southwest side of Middle Island in Lake Erie. The tug *Bob Anderson* was sent from Detroit on 10 April to pull the ship free, after which it was taken to Detroit for repairs (*Buffalo Commercial Advertiser* 1864).

Mojave was next recorded clearing Detroit in late April with 186 cords of wood bound for Milwaukee. The ship's arrival was logged at Milwaukee on 3 May 1864. On 6 May 1864, *Mojave* cleared Milwaukee for Buffalo with 19,500 bushels of wheat. The ship unloaded and immediately returned to Lake Michigan. It arrived at Milwaukee on 3 June and was chartered the next day to carry another cargo of wheat to Buffalo. It took on 19,000 bushels of wheat and cleared the port on 8 June (*Milwaukee Daily Sentinel* 1864a, 1864b, 1864c).

On 23 June 1864, *Mojave* again cleared the port of Milwaukee bound for Buffalo with 19,500 bushels of wheat shipped for Angus Smith & Company (*Buffalo Daily Courier* 1864a; *Chicago Tribune* 1864b). During the night of 24 June while en route to Buffalo, the ship grounded on Skillagalee Reef (Ile Aux Galets) in northern Lake Michigan. In thick fog, the captain went off course and fetched up on the reef (*Chicago Tribune* 1864c, 1864d; *Daily British Whig* 1864; *Milwaukee Daily Sentinel* 1864d).

The next morning, wind and heavy sea from the southwest blew the ship further up on the reef. The crew threw a large quantity of cargo overboard to get the boat off. Word of the struggling schooner was conveyed by a passing vessel to the tug *Leviathan* at bay in Mackinaw City, Michigan. *Leviathan* went to *Mojave*'s relief but was unable to assist until the weather abated. *Leviathan* returned to Mackinaw City, acquired a lighter (barge), and returned to the scene. Initially, it was thought that *Mojave* would be a total loss (*Chicago Tribune* 1864c, 1864d; *Daily Milwaukee News* 1864d*; Oswego Commercial Times* 1864). On 1 July the steam wrecker *Michigan* left Milwaukee with two steam pumps on board to assist in the relief effort. *Mojave* was removed from the reef and taken into Duncan Harbor where it was allowed to sink in shallow water. Upon the arrival of the *Michigan*, the two steam pumps were placed aboard and put to work to dewater its hull before the ship could be taken in tow to Detroit. The pumps were run continuously during the trip. On 7 July it arrived at the Clark Dry Dock for repairs (*Daily British Whig* 1864a; *Chicago Tribune* 1864d).

Mojave was back in service by mid-September. Newspapers reported Captain John McKenzie at its helm (*Daily Milwaukee News* 1864e). The research did not reveal background information for Captain McKenzie, including his prior service record on the lakes. According to information brought forward by Captain McKinzie's family conducting genealogical research, after completing service in the Union army in 1863, he took a job on the lakes. *Mojave* may have been his first command (Osterloh 2024).

Under the command of Captain McKenzie *Mojave* cleared Buffalo on 20 September 1864 with 250 tons of coal bound for Milwaukee. Having arrived at Milwaukee (on 29 September) the ship was quickly chartered to carry wheat to Buffalo at 8.5 cents per bushel. It loaded and departed on 30 September. The ship completed the trip in 12 days and arrived at Buffalo with 20,000 bushels of wheat consigned to J. R. Bentley & Company. On 13 October, *Mojave* departed Buffalo for Chicago with 200 tons of coal (*Buffalo Daily Courier* 1864b, 1864c, 1864d; *Daily Milwaukee News* 1864e).

During the first week of November 1864, *Mojave* loaded 18,460 bushels of wheat at Chicago for William Petrie & Company of Buffalo. When the ship departed Chicago Captain Darius Nelson Malott was in command. It is plausible that Malott was picked up enroute on the run from Buffalo to Chicago and at Chicago he took command of the ship. On 8 November 1864, while on its trip northbound on Lake Michigan, *Mojave* was sailing four miles behind the Canadian barkentine *Monarch* when they encountered heavy gales. The last time the crew of the *Monarch* saw the *Mojave*, it was sitting low in the water and rolling heavily in the seas. The *Monarch*'s crew said they were well out into the lake between Sheboygan, Wisconsin, and Ludington, Michigan, when the *Mojave* went down into a trough of the waves, became swamped, and sank quickly. A sailor was sent aloft to the masthead of the *Monarch* to look for the ship, but *Mojave* was not seen again (*Detroit Tribune* 1864; *Milwaukee Daily Sentinel* 1864f; *Weekly Pioneer and Democrat* 1864; *Chicago Tribune* 1864e; *Daily British Whig* 1864b, 1864c; *Marine Record* 1886). Family records show that Captain John McKenzie was also aboard and died on the *Mojave*. It is likely that he was taking passage home to Michigan or to take another assignment when the ship was lost (Osterloh 2024). Its cargo was insured for $38,000 – $5,000 in Morehart's of Chicago, $16,500 in the Security, and $16,500 in the Western Insurance Company of Buffalo (*Cleveland Daily Herald* 1864).

Site Description

The remains of the canaller *Mojave* (47SB474) lies in 295 feet of water under the surface of Lake Michigan, northeast of the Sheboygan Breakwater Lighthouse. The shipwreck is located within the boundaries of the Wisconsin Shipwreck Coast National Marine Sanctuary. The vessel is completely intact up to the main deck and two of its three masts remain standing. The remains are well-preserved due to their great depth in the cold waters of Lake Michigan. All of *Mojave*'s deck machinery, spars, rigging, and cabin structure remain extant on the site.

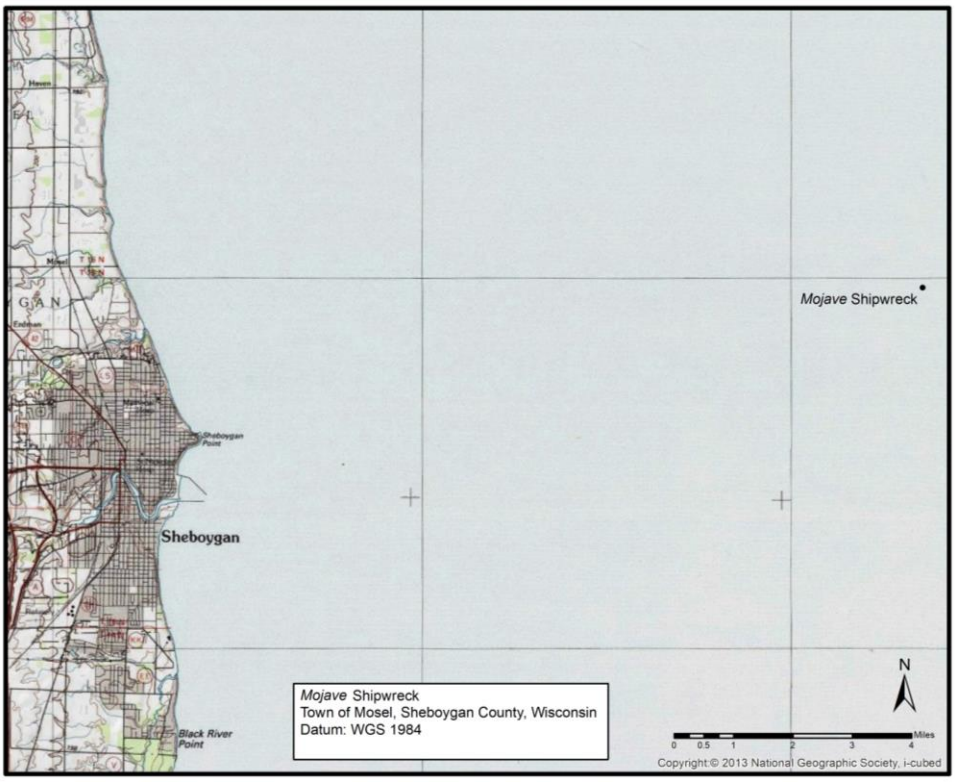

Figure 43. Location of *Mojave*

The *Mojave* was constructed in 1863 as representative of a class of sailing vessels called canallers. Canallers were a unique vessel type to the Great Lakes, designed to transit the locks of the Welland Canal – the canal that bypassed Niagara Falls – while carrying the maximum amount of cargo through the locks with only inches to spare. Grain, collected from the farmlands of the Midwest, was transported from Lake Michigan ports, and vessels returning to Lake Michigan were often loaded with coal, used for heating homes and powering factories. As an integral part of the maritime transportation system, many features of this vessel type were common to other canallers on the Great Lakes. As described in the Multiple Property Documentation *Great Lakes Shipwrecks of Wisconsin* (Cooper and Kriesa 1992), barkentines were both square and fore-and-aft rigged. They had three or more masts with square sails on the foremast and fore-and-aft (usually gaff-rigged) sails on the other masts. The *Mojave* shipwreck site has yielded significant information about early wooden barkentine construction and has great potential to yield further archaeological information in future surveys.

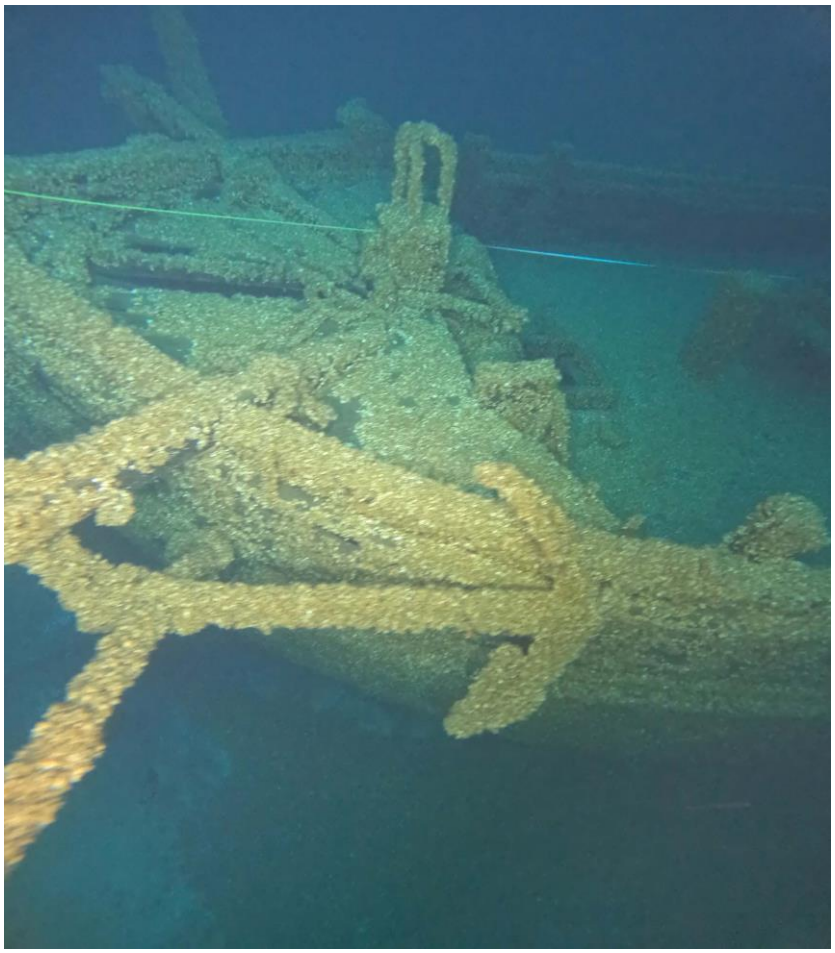

Figure 44. At *Mojave*'s bow, the starboard side anchor hangs from the cathead. In the background rising above the weather deck is the Samson post with bell stand. Below is the ship's windlass (Zach Whitrock)

The remains of the barkentine *Mojave* were found in 295 feet of water off Sheboygan in June 2016 during a search conducted by maritime historian Steve Radovan. In cooperation with Radovan, the wreck site was investigated in July 2023 by Wisconsin Historical Society (WHS) maritime archaeologists and volunteers as well as with a remotely operated vehicle (ROV), equipped with multibeam sonar and video cameras, supplied and operated by Crossmon Consulting, LLC. All measurements, which were taken from the multibeam sonar survey data and photogrammetry model, are approximate. The length of the ship is 136 feet, and the vessel's beam, measured at its widest point, is 26 feet. Given the wreck dimensions, location, lack of cargo remaining in the hold, and a comparison of vessel losses in the vicinity based on historic newspaper accounts, the remains were determined to belong to the *Mojave*.

The vessel's bluff bow is angled 7 degrees forward. The bow of the vessel sits on a 4-degree list to port, while the stern sits on a 2-degree list to port. The stempost is 0.7 feet sided, 1.2 feet moulded, and extends 19.8 feet vertically from the keelson. A metal cutwater is fastened to the

forward edge of the stempost. Major components of the vessel's standing rigging are extant, including the foremast, mainmast, bowsprit, and jibboom. Forward of the stempost, a 7.4-foot portion of the bowsprit is intact and remains pinned in place. The starboard and port pins are located on either side of the bowsprit. They measure 0.5 feet in diameter and rise 1.0 feet and 1.2 feet, respectively, above the railing. These pins hold the bowsprit in place and are a common feature of canallers. The remaining, broken portion of the bowsprit and the jibboom angles towards the bottom off the starboard bow. The broken portion of the bowsprit measures 17.7 feet long, 1.7 feet wide, and 1.1 feet thick. The jibboom is 29.3 feet long and 1.1 feet in diameter.

Both the port and starboard catheads are fully extended across the deck railing 1.4 feet from their ends near the Samson post. The outboard ends of the catheads measure 0.9 feet wide, 0.9 feet thick, and extend 3.9 feet from the outer edge of the rail cap. The catheads extend 5.6 feet inboard of the rail cap, and the butt ends are cut at an angle that is perpendicular to the vessel's centerline. Inboard of the rail cap, the cathead tapers to 0.6 feet wide and 0.4 feet thick towards its end to present a lower profile atop the windlass deck. Both catheads feature an iron hinge 3.7 feet from their butt ends. These hinges are located on top of the catheads, which are made of two separate timbers. These hinges are another feature unique to canallers that allowed the catheads to be flipped inboard of the railing, along with the attached anchors, allowing the canaller to fit through the Welland Canal locks. Although not initially identified on other canaller vessels, it is apparent that this was a common feature on these vessels, allowing a ship that measured 26 feet in beam, to fit through a canal lock that measured only 26.6 feet wide. Both of *Mojave's* anchors remain on the site and are attached to the catheads; the starboard anchor has a wooden stock while the port anchor has an iron stock. The starboard anchor's iron anchor shaft measures 6.4 feet long. Both arms, measured from bill (fluke tip) to bill, measure 6.7 feet. The flukes measure 2.0 feet wide, and 2.7 feet from arm to bill. The anchor's eye measures 0.9 feet in diameter, and 0.3 feet thick. An anchor ring goes through the eye and is attached to the anchor chain. The ring measures 0.3 feet thick and is 1.6 feet in outer diameter. The anchor's stock is made of wood and measures 10.3 feet from end to end. At the shaft, the stock measures 1.4 feet in diameter and tapers to 0.7 feet in diameter at both ends. The port anchor's iron anchor shaft measures 7.3 feet long, and both arms, measured from bill (fluke tip) to bill, measure 5.1 feet. The flukes measure 1.8 feet wide, and 1.9 feet from arm to bill. An anchor ring goes through the anchor's eye and is attached to the anchor chain. The anchor's iron stock is 0.6 feet in diameter and measures 9.2 feet from end to end. Each anchor's shaft hangs outboard of the ship's railing and is attached to the catheads. One of the flukes of each anchor sits atop the railing and extends slightly over the weather deck, as was common on sailing vessels. The port anchor chain wraps around one side of the stock of the port anchor. Anchor lining is present on both sides of the bow underneath the anchors. It measures 2.2 feet wide, 4.4 feet long, and 0.1 feet thick. The anchor chains extend out of the vessel's hawsepipes, which are located 2.9 feet aft of the stempost. These hawsepipes measure 1.6 feet in diameter and are lined with iron, measuring 0.5 feet wide.

The forward edge of the vessel's Samson post is located 9.7 feet from the forward edge of the stempost. The Samson post itself measures 1.7 feet moulded by 1.3 feet sided and rises 2.0 feet above the weather deck. The bowsprit remains mortised into the Samson post. The covering board for the bowsprit is missing. These components are indicative of a canaller and would have allowed the bowsprit to be raised while the vessel was traversing the Welland Canal, permitting the vessel more clearance in the canal locks.

Mojave's windlass remains intact just aft of the Samson post, 11.7 feet aft of the stempost, and measures 13.3 feet in overall length. The iron crosshead is still attached to the forward side of the Samson post and measures 2.6 feet long, 0.5 feet wide, and 0.3 feet thick. The two purchase rods connecting the crosshead to the purchase rims extend down through the deck. A 3.8-foot portion of the windlass' strongback remains; it measures 0.5 feet wide by 0.5 feet thick. The windlass ends (gypsy heads) are 1.7 feet wide and 1.7 feet in diameter on the distal end. The carrick bitts are 1.3 feet by 0.7 feet and stand 4.2 feet above the main deck with 1.0 feet exposed above the weather deck. The standard knees, which support the carrick bitts, are tucked under the weather deck. The cheeks of the carrick bits measure 1.4 feet wide, 0.7 feet thick, and rise 3.1 feet off the main deck. The pawl measures 2.3 feet from the Samson post to its aft extent, and 0.7 feet wide. The purchase rims are 0.5 feet wide by 0.3 feet thick. The central barrel in which the pawl engages is 1.6 feet wide and the windlass whelps measure 2.7 feet long and 1.8 feet in diameter. On the weather deck, forward of the Samson post next to the butt end of the port cathead, lie two windlass hand-levers that were used to manually operate the crossheads on the windlass. The identical hand levers lie one on top of the other. The handle of the hand levers is 4.8 feet in length, and has a round shank 0.3 feet in diameter, with a central rod that is 4.1 feet long and 0.2 feet in diameter. The V-shaped brace for the handle makes an equilateral triangle that measures 1.1 feet on each leg. The ship's bell is missing. The yoke in which the bell hung had three supports on the port, starboard, and aft sides, remaining open to the bow. The yoke rises 4.0 feet above the weather deck and all three supports extend down to the weather deck. Both port and starboard side anchor chains are wrapped around the windlass. The starboard chain is wrapped several times around the windlass and drapes across and down into the forecastle scuttle before extending into the starboard chain pot. Although there are several wraps of chain around the port side of the windlass, the chain does not extend into the port chain pot, which is covered. These chain pots are holes that lead into the chain locker within the forecastle allowing the chain to be stored below decks. Both chain pots, which measure 0.7 feet in diameter, are located 3.6 feet aft of the windlass. A forecastle scuttle is located immediately aft of the windlass and is 3.9 feet long by 3.2 feet wide with a coaming that rises 0.6 feet above the deck. The coaming measures 0.3 feet in thickness. A set of stairs with seven treads leads down into the forecastle; the treads measure 1.8 feet long, 0.3 feet wide, and 0.2 feet thick. There is no evidence of an aft-facing companionway covering the entrance to the forecastle scuttle on *Mojave* as in many other similar vessels.

The main rail is intact around the entire perimeter of the deck. It measures 1.4 feet wide and 0.5 feet thick. The rail rises 5.2 feet above the main deck in the bow just aft of the weather deck, 4.0 feet at midships, and 5.3 feet at the stern just forward of the cabin. A monkey rail has been added atop the main rail 38 feet aft of the bow. An additional monkey rail extends from the transom 33.6 feet forward; it measures 0.8 feet thick at the transom and steps down just aft of the aft hatch to 0.6 feet thick, which further tapers to meet the main rail in line with the forward end of the aft hatch. The rail is supported by bulwark stanchions that are 0.7 feet sided by 0.5 feet moulded, with a space of 2.6 feet between stanchions. The outer and inner bulwark planking is present along most of the perimeter of the ship, except on the starboard side amidships. There is one set of fairleads on each side of the bow located 6.0 feet from the stempost along the railing. They measure 0.4 feet in overall width, 1.5 feet in length, and have an opening of 0.4 feet.

Figure 45. A diver swims over *Mojave*'s cabin, broken mizzenmast, and covered hatch (Zach Whitrock)

There are twelve mooring bitts in total installed on both sides of the deck: a set at the bow located forward of the foremast chainplates about 21 feet aft of the stempost, another amidships

just aft of the second cargo hatch about 59 feet aft of the stempost; and another in line with the aft-most cargo hatch about 102 feet aft of the stempost. Each bitt is paired, and all of the bitts are fastened to the inside of the bulwark stanchions. The forward pairs of bitts are each 1.1 feet thick, 1.3 feet wide, rise 5.0 feet above deck level, and are 3.0 feet spaced. The amidships and aft pairs of bitts are each 0.8 feet thick, 0.9 feet wide, rise 5.0 feet above deck level, and are 2.2 feet spaced.

Two separate single bitts are located along the centerline of the ship 22.1 feet and 109.7 feet aft of the bow. These bitts are located forward of the foremast and forward of the mizzenmast, respectively. The forward bitt measures 1.2 feet long by 1.0 feet wide and rises 3.8 feet above the deck. The aft bitt measures 1.2 feet long by 1.2 feet wide and rises 3.8 feet above the deck. Arms attached to the aft face of the aft bitt extend 0.7 feet from either side of the bitt latterly to form a cleat. These arms measure 0.5 feet thick and are located 2.8 feet above the deck. *Mojave* featured three bilge pumps that remain on the vessel's intact deck. The forward bilge pump is located 32.1 feet aft of the stempost and 2.3 feet forward of the forward headledge of the forwardmost cargo hatch. This pump is a two-cylinder force pump (dual action bilge pump). The pump measures 1.3 feet wide and stands 2.0 feet above the deck, with each cylinder measuring 0.7 feet in diameter. The pump's starboard brake, or handle, is deployed. It measures 2.7 feet long and 0.5 feet in diameter. The other brake is detached and lies below and to the port of the pump on the deck, extending over the open forwardmost cargo hatch. It measures 3.5 feet long and 0.5 feet in diameter. Another two-cylinder bilge pump, with a central holding chamber, is located 78.5 feet aft of the stempost and 3.0 feet aft of the mainmast. The pump measures 1.1 feet wide and stands 1.8 feet above the deck. The central holding chamber measures 2.0 feet wide and rises 0.5 feet above the deck, with each cylinder measuring 0.5 feet in diameter. The pump's starboard brake is deployed. It measures 6.1 feet long and 0.5 feet in diameter. The port brake is detached and lies to the port of the pump on the deck next to the third cargo hatch. It measures 5.0 feet long and 0.5 feet in diameter. A third dual-action bilge pump is located 100.5 feet aft of the stempost and 1.1 feet forward of the aft-most cargo hatch. The pump measures 1.0 feet wide and stands 1.8 feet above the deck. The central holding chamber measures 1.4 feet wide and rises 0.4 feet above the deck, with each cylinder measuring 0.5 feet in diameter. Neither brake is deployed.

Additionally, the vessel's capstan remains on the main deck 47.2 feet aft of the stempost. The capstan measures 2.0 feet in diameter at its base and stands 3.2 feet in height above the deck. The capstan drum measures 2.1 feet in diameter and 2.7 feet thick. The drum cap measures 2.4 feet in diameter and 0.6 feet thick. The capstan has a pawl rim at its base measuring 2.6 feet in diameter and 0.3 feet thick.

Four cargo hatches allowed access to the hold; the forward hatch and third aft hatch are the largest with the other hatches of slightly smaller construction. The forward cargo hatch, located 35.3 feet aft of the stempost, measures 6.8 feet wide and 7.4 feet long; it has an interior height

of 1.5 feet along the port and starboard coamings, and 1.5 feet at the tallest point of the fore and aft head ledges. The second aft hatch, located 54.5 feet aft of the stempost, measures 5.0 feet wide and 5.0 feet long. The third aft hatch, located 84.4 feet aft of the stempost, measures 6.8 feet wide and 7.2 feet long; it has an interior height of 1.6 feet along the port and starboard coamings, and 1.7 feet at the tallest point of the fore and aft head ledges. The aft-most cargo hatch, located 102.1 feet aft of the stempost, measures 5.2 feet wide and 5.4 feet long. The forward and third aft cargo hatches are missing their hatch covers while the hatch covers are present on the second aft and aft most cargo hatches.

Figure 46. A clock mounted on the side of a deck beam in the cabin reads 4:49 (Zach Whitrock)

The extant hatch covers offer a look at hatch cover construction. In many cases, escaping air during a vessel's sinking caused hatch covers (and cabin roofs) to blow out, leaving hatchways open. In the case of *Mojave*, there is no significant damage to the deck that would have permitted air to escape, thus allowing two of the cargo hatch covers to remain in place. However, it is interesting to note that the covers are missing from the two largest hatches. The loss of the largest hatch covers may have allowed adequate air to escape such that the two smaller hatch covers remained. As one of few examples of shipwrecks with intact cargo

hatches, this documentation adds to the historical record and provides information to strengthen understanding of ship construction. Both extant hatch covers are cambered. The second hatch (forward most covered hatch) measures 1.1 feet in height at its center, and 0.9 feet high at both the port and starboard edges. An iron strap extends longitudinally along the center of the hatch cover and measures 0.3 feet wide and 0.1 feet thick. The third hatch (aft-most covered hatch) measures 1.4 feet in height at its center, and 1.0 feet high at both the port and starboard edges. An iron strap extends longitudinally along the center of the hatch cover and measures 0.3 feet wide and 0.1 feet thick. All cargo hatch coamings extend 0.8 feet above the deck.
The *Mojave* carried a single centerboard, probably located on the vessel's centerline. The location of the centerboard winch suggests that the centerboard trunk is located between the second hatch and the mainmast. The centerboard winch, which is toppled backward, is located on deck 2.6 feet forward of the mainmast. The winch measures 3.5 feet tall, 1.2 feet wide, and 2.9 feet long at its base. The chain spool is 1.0 foot above the base. It is difficult to discern whether any turns of the chain are wrapped around the winch; it is impossible to tell if the centerboard is extended or stowed.

The recessed stern cabin, which remains largely intact, is covered by a roof that measures 19.0 feet wide at its widest point and extends 18.4 feet forward of the transom. The interior of the cabin is largely in disarray though is possible to identify a doorway with a clock above it as well as ceramic plates and other wares resting on shelves or tables and scattered on the floor. Additional artifacts likely remain preserved beneath the thick layer of debris and silt. The cambered roof of the recessed cabin stands 2.9 feet in height above the main deck at its center and 2.5 feet in height above the main deck on the port and starboard sides. There are two entryways on the forward side of the cabin; one is located 2.3 feet from the port side and the other is located 5.7 feet from the starboard side. Both entryway openings appear to measure 2.2 feet wide and extend 3.2 feet aft of the forward wall of the cabin. Cabin lights with intact glass and octagonal metal collars are located on the forward cabin wall, including one between the port entryway and port railing, one between the port and starboard entryways, and one between the starboard entryway and starboard railing; the lights allowed sunlight into the cabin. A circular stovepipe hole is located near the forward port corner of the cabin roof above the port cabin light. The stovepipe hole is protected by a metal cage guard with four rods located around the hole that meet directly above the hole at a height of 1.4 feet above the cabin roof. The top of the port entryway opening is partially blocked by the entryway's hatch cover, which is slid slightly forward, whereas the starboard entryway hatch cover is fully retracted.

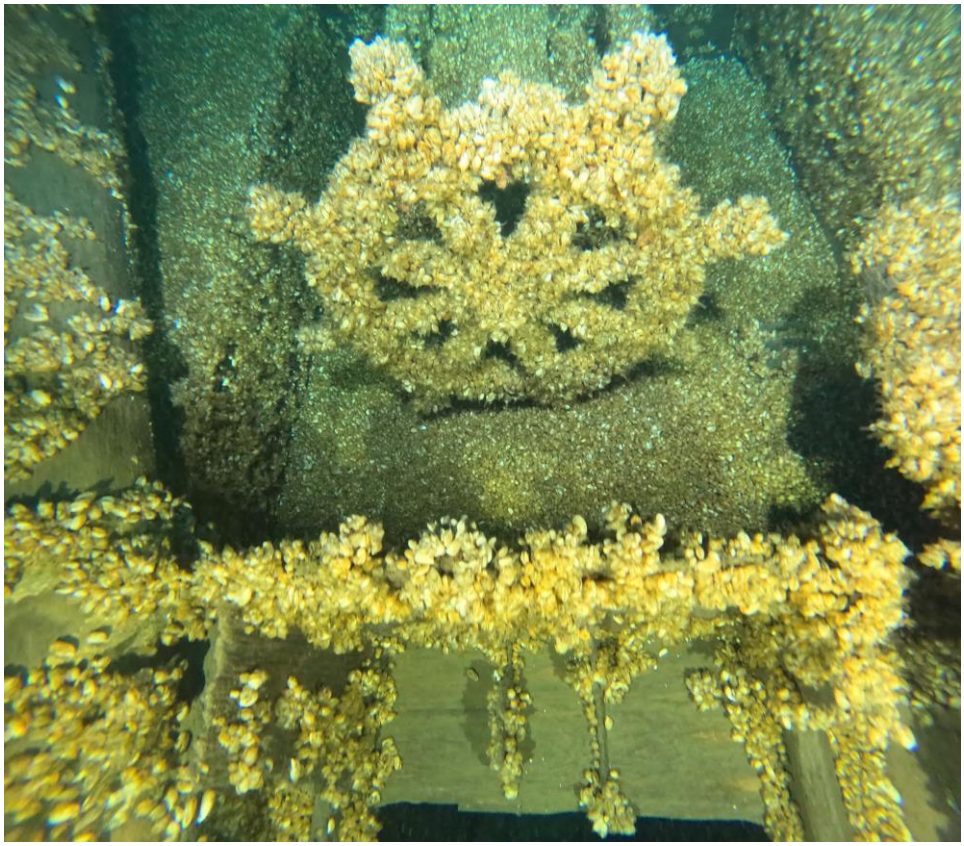

Figure 47. *Mojave*'s wheel and worm gear remain within a well at the vessel's stern (Zach Whitrock)

The central aft side of the cabin roof appears to feature the remnants of a companionway that led into the sunken steering area at the stern. A portion of the cabin roof planking is missing in this location, but there are two wooden guides or coamings on either side of the possible companionway. These guides/coamings may have fortified the walls of the companionway; each guide is 2.5 feet wide, 10.5 feet long, and 0.2 feet high. There also appears to be a set of three stairs on the forward side of the cabin just to the port of the mizzenmast; these stairs are in line with the location of the possible companionway and may have allowed entry into it. The companionway has not survived in a recognizable form; it may have been crushed when two spars, which are still present, fell on the area during or after the sinking. At the aft end of the companionway, just forward of the sunken steering area, is a vertical wooden barrier that appears to be split down the middle with two holes on either side. This may be a door with lights/windows – the glass no longer extant – that opened into the sunken steering area from the companionway. There are two metal pins or rods at the bottom of the forward side of the door that may have served to secure it when under sail. The sunken steering area itself is 2.8 feet deep, is located on the centerline of the vessel, and is 1.2 feet forward of the transom. It is 4.0 feet wide and 5.2 feet long and contains the intact wheel, wheel stand, and worm gear.

The forward side of the rudderpost is located 4.2 feet forward of the transom. The rudderpost is 1.4 feet in diameter and is flush with the cabin roof. The vessel was steered with an eight-spoked wheel, which is located 4.4 feet forward of the transom mounted to the aft deck, and connected to the worm gear. The rudder is turned slightly to starboard and is 9.3 feet tall, 1.0 feet thick, and extends 3.1 feet aft of the rudderpost at its widest part. The blade is constructed from vertical timbers attached to the rudderpost. The sternpost is not raked and sits at 90 degrees to the keel.

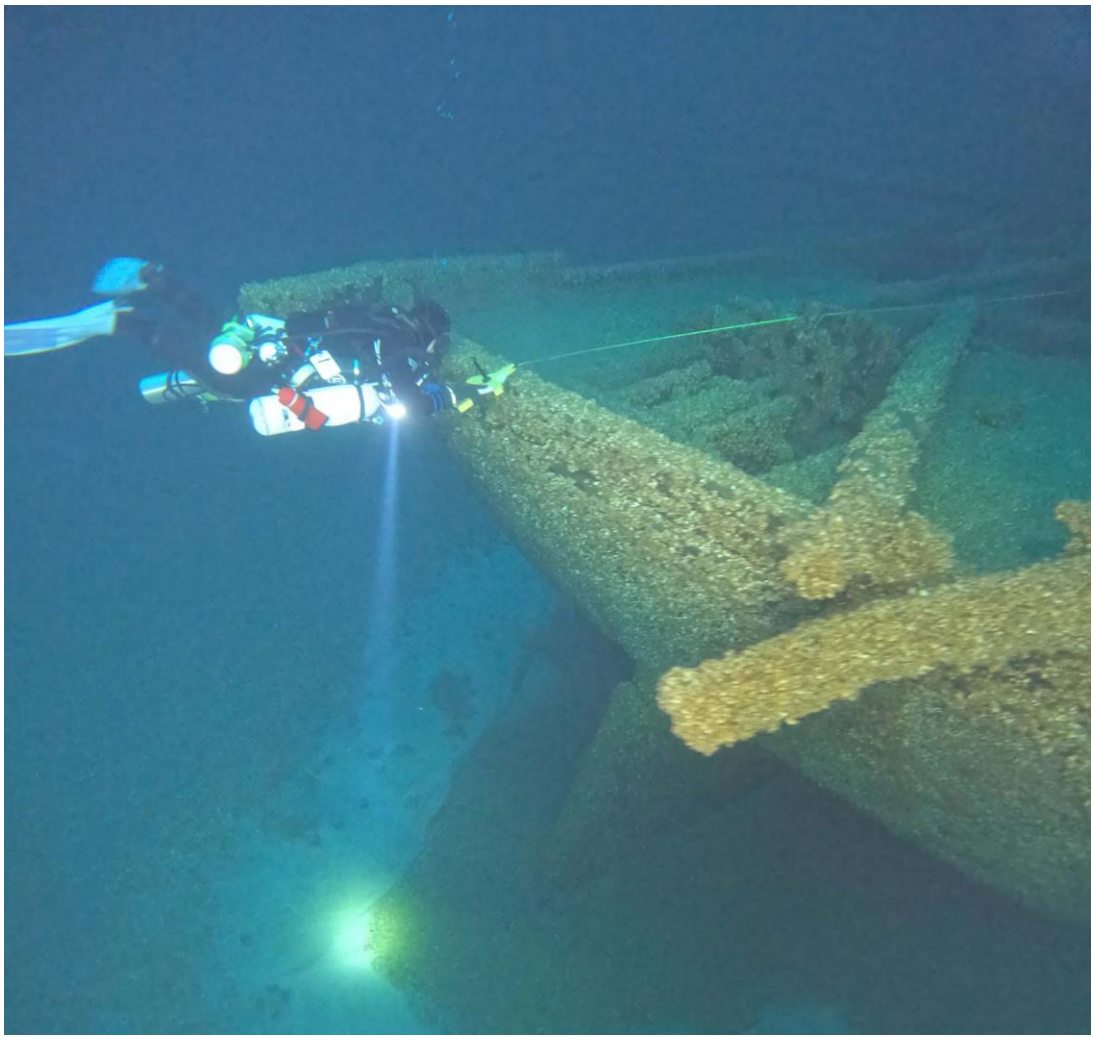

Figure 48. *Mojave*'s stern. The rudder is slightly to starboard. Both retractable davits are ajar (Zach Whitrock)

The transom is angled at 35 degrees and is 18.1 feet wide at the rail. The outside of the transom features horizontal planking. Two portlights are located 3.6 feet below the transom railing. These lights, which allowed sunlight into the cabin spaces, measure 0.7 feet in diameter and are spaced 9.8 feet apart, each 4.9 feet away from the centerline of the ship. Glass remains within both lights. The lights are held to the transom with octagonal metal collars that measure 1.2 feet wide by 1.3 feet long. The transom railing measures 0.8 feet wide and is 1.0 feet above the stern

deck/cabin roof. Three wooden cleats adorn the stern deck just inboard of the transom railing: one on the port side, one on the centerline, and one on the starboard side. These measure 2.1 feet wide, 0.4 feet thick, and stand 0.5 feet off the deck. The port and starboard cleats are located 2.7 feet from the bulwarks.

At the stern, both folding davits are extant. The davits would have been used to store, raise, and lower the vessel's yawl boat. Both davits remain in place on the vessel's stern, folded outward at the hinge. The upper arms of the davits measure 4.5 feet long, 0.7 feet thick, and 0.7 feet wide. The lower arms of the davits measure 6.3 feet long, 0.5 feet thick, and 0.3 feet wide on the forward end, broadening to 1.0 feet wide on the aft end. The davits were hinged so the upper arm could be lifted or stowed along the aft main rail. The hinge is located just inboard of the transom. Folding davits were a key feature of canallers.

Mojave's three masts remain on the site, although the mizzenmast is broken near the main deck. Based on the extant spars on the site, it appears that *Mojave* may have been rigged as a topsail schooner with both a square topsail and a fore-and-aft sail on its foremast. Although barkentines are technically fully square-rigged on their foremast, terminology can be fluid. On the Great Lakes in the nineteenth century, topsail schooners were sometimes classified as barkentines since their foremast was partially square-rigged. Alternatively, *Mojave* may have been re-rigged as a topsail schooner later in its career and never reclassified in enrollment records.

The vessel's foremast is located 28.1 feet aft of the stempost. The foremast table is intact on the main deck, measuring 3.9 feet wide and 5.6 feet long. A 0.7-foot-wide metal collar is visible where the foremast meets the table. The foremast, which remains completely intact, measures 2.2 feet in diameter at its lower end and extends 64.8 feet from the main deck to its upper end. The semicircular foremast trestletree is still attached to the foremast 49.2 feet above the main deck. A 17.1-foot-long portion of the foretopmast is attached to the foremast above the trestletree. An 18.7-foot-long portion of the foretopmast, with the foretopmast trestletree still attached, is located leaning on the port side of the vessel in line with the foremost cargo hatch. The head of the foretopmast measures 5.4 feet long, has a diameter of 1.1 feet, and has an intact cap. The trestletree extends 3.6 feet out from the mast on one side and measures 4.7 feet wide by 0.4 feet thick. The fore topgallant mast is still connected to the foretopmast and measures 26.6 feet long, with a diameter of 1.1 feet at its end, or heel, tapering to 0.6 feet in diameter at its tip. A 41.6-foot-long fore topgallant yard is attached to the fore topgallant mast 3.7 feet below the upper end of the fore topgallant mast.

The foremast boom and gaff lie together on the main deck, extending from the centerboard winch forward to where they lie against and extend past the port deck rail. The boom measures 41.2 feet in length from the ends of the boom jaws just off the port side near the forward port pair of mooring bitts. The boom has a diameter of 1.4 feet near the jaws and 0.9 feet at its end.

The foremast gaff measures 30.8 feet in length from the ends of the boom jaws leaning against the foretopmast to the end lying on the main deck. The gaff has a diameter of 1.3 feet near the jaws and 0.7 feet at its end. Two unidentified spars, or broken portions of spars, lie against the port side near the foremast. The forward spar has a diameter of 1.7 feet and extends from the lakebed upwards and to starboard about 55 feet to where it rests against the foremast. The other spar is 22.4 feet long with a diameter of 1.7 feet.

Figure 49. *Mojave*'s upright mainmast with mast table. The centerboard winch toppled to starboard (Zach Whitrock)

The *Mojave*'s mainmast remains standing with an intact trestletree and topmast. The mainmast table, which is still extant on deck, measures 3.7 feet wide and 4.8 feet long. The mainmast measures 1.8 feet wide at its base and extends 64.1 feet from the main deck to its upper end. The mainmast trestletree is still attached to the mainmast 55.4 feet above the main deck. The main topmast, which measures 53.1 feet long, extends upwards from the mainmast trestletree. The mainmast boom and gaff remain on the site near each other. The mainmast boom, which measures 39.3 feet long, extends aft diagonally across the deck; the jaws are located slightly starboard and aft of the mainmast with the other end located off the port railing. The boom has

a diameter of 1.6 feet near the jaws tapering to 0.8 feet at the other end. The mainmast gaff also extends aft diagonally across the deck; the jaws are located slightly starboard and aft of the mainmast with the other end located against the port railing. The gaff measures 38.2 feet long and has a diameter of 1.3 feet near the jaw tapering to 1.0 feet at the other end.

The mizzenmast measures 2.1 feet in diameter at its lower end and is broken 5.2 feet above the main deck. A 48.9-foot-long broken top section of the mizzenmast, with the trestletree still attached, extends from just above the broken lower portion of the mizzenmast forward and off the starboard railing of the vessel into the lakebed. The trestletree, which hangs above the deck near the aft-most cargo hatch, extends 4.1 feet out from the mast on one side and measures 3.2 feet wide by 0.4 feet thick. The mizzenmast gaff and an unidentified spar lie crisscrossed on the cabin roof. The unidentified spar, which may be a broken portion of the boom, measures 33.0 feet in length from its aft end near the starboard davit to its forward end above the main deck between the aft-most cargo hatch and the aft-most port set of mooring bits. The aft end has a diameter of 0.7 feet tapering to 0.5 feet at its forward end – no boom jaws are evident on either end. The mizzenmast gaff measures 25.1 feet in length from the ends of the jaws on the stern cabin near the wheel to its other end above the aft-most cargo hatch. The gaff has a diameter of 1.2 feet near the jaws tapering to 0.6 feet at its other end. One additional unidentified spar, or broken portion of a spar, lies on the starboard deck, extending from above the starboard cabin entryway to the starboard railing. The spar is 31.0 feet long with a diameter of 0.9 feet.

The vessel's masts have associated chainplates on the port and starboard sides. The foremast has six associated chainplates on each side, the mainmast has four on each side, and the mizzenmast has three on each side. The six foremast chainplates each measure 0.4 feet wide and 0.2 feet thick; they are spaced between 0.9 and 2.0 feet apart. The four mainmast chainplates each measure 0.4 feet wide and 0.2 feet thick; they are spaced 1.7 feet apart. The three mizzenmast chainplates each measure 0.4 feet wide and 0.2 feet thick; they are spaced 1.3 feet and 1.9 feet apart. Lower deadeyes – which are bolted to the chainplate by the flat metal band, or strop, wrapped around their outer edge – remain extant in all starboard chainplates as well as the port mainmast and mizzenmast chainplates. The deadeyes for the port foremast chainplates are missing or obscured by foremast debris. The foremast and mainmast belaying pin racks, inboard of the chainplates, remain on *Mojave*. Several belaying pins remain within the belaying pin racks. Other belaying pins likely remain on the site obscured by mussels and debris. Several deadeyes and blocks remain attached to extant features around the vessel. There is also a double block between the mainmast boom and gaff near where the two intersect on the deck and another double block aft of the foremast between the foremast table and the second cargo hatch.

Due to the great depth at which this vessel lies, many of the associated artifacts remain intact. Despite this, the extent of the quagga mussel colonization at this depth in recent years has obscured many of the smaller artifacts located on the deck and in the associated debris field. In

addition, smaller artifacts are likely also located in the cabin and within the hold, which were not explored during the initial investigation. Because of this, the probability for additional artifacts to be identified in subsequent years remains high. The archaeological data collected during this survey has provided additional information about the construction of Great Lakes canallers and nineteenth-century maritime commerce but more remains to be uncovered.

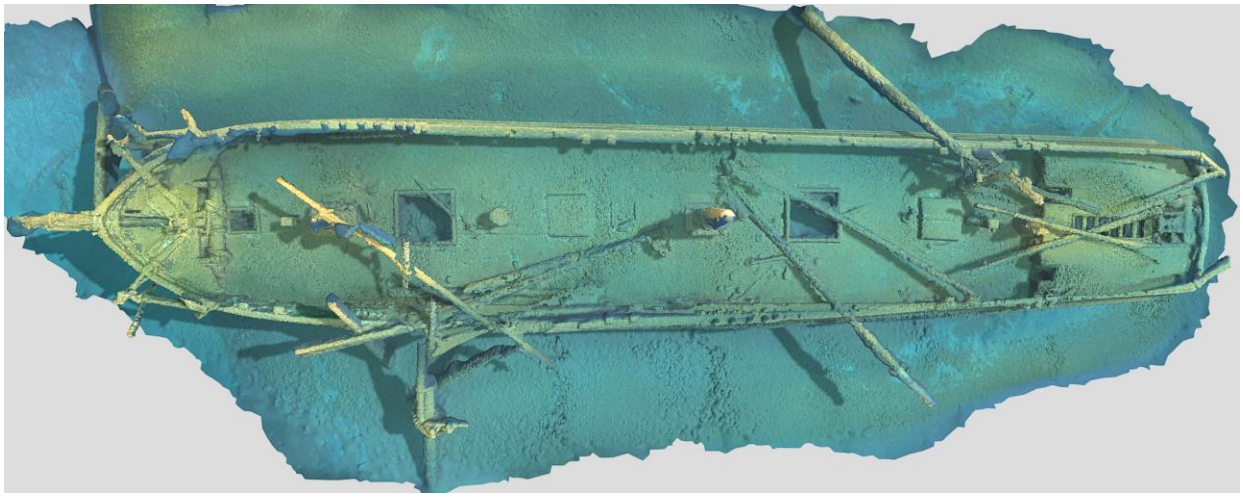

Figure 50. Photogrammetry model of *Mojave* (Zach Whitrock)

CHAPTER SEVEN
SCHOONER *PRIDE*

During the *Pride*'s service career from 1866-1898, three other vessels on the Great Lakes bore the same name:

• *Pride* (1849-1901) is a schooner built at Sandusky, Ohio. [Owned in Sandusky, Ohio, Racine, Wisconsin, Milwaukee, Wisconsin, Pentwater, Michigan, Sheboygan, Wisconsin, and Detroit Harbor, Wisconsin.] The vessel was lengthened by 20 feet and converted from a two-masted to a three-masted vessel in 1868. It wrecked in 1901 on the north side of Washington Island, Lake Michigan. It frequented the same ports at the same times as the vessel documented in this report.

• *Pride* (1869-1883) is a schooner built in 1869. It was owned in New Baltimore and Detroit, Michigan. The deposition of the vessel is unknown. It is not listed in service after 1883.

• *Pride* (1870-1873) is a scow schooner built in Saginaw River, Michigan, and rebuilt at New Baltimore, Michigan, in 1872. It is named on a list of tonnage in the Detroit District in 1874 but disappears from the rolls after this.

Every effort has been made in research and documentation to follow the trail of owners, masters, and ports to separate out the schooner *Pride* (1866-1898) and not confuse its service history with those of the others.

The schooner *Pride* was built by Master Carpenter Henry Dutton (H.D.) Root at Black River, Ohio, in 1866. Root was a native of Lorain County, Ohio, born in 1833. He started sailing on the lakes at age fifteen, became a captain at twenty, and spent thirteen years sailing before he learned the shipbuilding trade from William Jones (known as the father of Great Lakes shipbuilding) at Lorain, Ohio. In 1853 Root started building ships of his own at Black River with his brother under the name H.D. Root & Brother, and later under his own name. He built scows, clippers, steam barges, and tugs throughout his career. *Pride* was only the fourth "clipper-style" schooner built by Root (Beers 1894; Bureau of Navigation 1866); it was built with a sleek cutwater and fast lines.

Pride was described as schooner-rigged with one deck, two masts, a plain head, and square stern. It measured 77 feet long, with a 20.2 feet beam and 6.6 feet depth of hold. Its tonnage was calculated at 69.34 tons of which 61.87 tons capacity was under the tonnage deck and 7.47 tons capacity was within enclosures on the upper deck (Bureau of Navigation 1866). The ship was owned equally by James Chapman, his wife Elizabeth Chapman, and their eldest son, Charles B. Chapman, each of Black River (Bureau of Navigation 1866).

James Chapman was born in Lorain about 1821 to a pioneer family of Lorain. He spent his life sailing on the Great Lakes. His wife Elizabeth Burk Chapman was born in Hesse-Darmstadt (Germany) in 1825 and immigrated to the United States in 1839 (Beers 1894; U.S. Census

Bureau 1870a). Black River became the vessel's homeport, and 21-year-old Charles B. Chapman became its first master (Bureau of Navigation 1866).

The schooner *Pride* departed Black River on 5 May 1866 bound for Cleveland. It was enrolled on 7 May at the port of Cleveland. The ship picked up cargo at Bay City, Michigan, Ogdensburg and Buffalo, New York, and Toledo and Cleveland, Ohio during its first season. The type of commodity carried went unreported. (Bureau of Navigation 1866; *Cleveland Plain Dealer* 1866a, 1866b, 1866c, 1866d, 1866e, 1866f, 1866g, 1866h, 1866i, 1866j, 1866k, 1866l). The vessel laid up for the season in mid-November, spending the 1866-67 winter in Black River (*Cleveland Plain Dealer* 1867a).

Figure 51. Horace Duncan Moore (*History of Allegan and Barry Counties, Michigan*)

Pride came out of winter quarters early in April 1867 and headed for Cleveland. It cleared Cleveland, leaving Lake Erie permanently on 18 April bound for Chicago. The remainder of its career was spent on Lake Michigan. The ship's arrival at Chicago evaded newsprint. On 27 July 1867, *Pride*'s enrollment was surrendered at Grand Haven, Michigan, for a change of owner, homeport, and districts. *Pride* was sold to Horace Duncan Moore of Saugatuck, Michigan. The ship's length was measured at 71 feet. All other measurements remained the same. Saugatuck

became the schooner's new homeport and Captain John W. Archer took over the helm (Bureau of Navigation 1867). Moore was a manufacturer of tools and was heavily involved in the lumber industry in Saugatuck, with a mill and cutting business that he had started ten years prior. His lumber operation spanned 1857 to 1875, during which time he cut more than 200 million feet of timber and employed various tugs and vessels (Ensign 1880). In 1860, the 46-year-old Moore reported $41,000 in real estate and $1000 in personal estate value, well over $1.5 million in 2024-dollar equivalency (U.S. Census Bureau 1860a). Many of *Pride*'s activities during the 1867 season remain unknown. However, two cargoes of 63,000 board feet of lumber were delivered to Chicago from Saugatuck in November of 1867 (*Chicago Tribune* 1867a, 1867b).

On 9 April 1868, *Pride*'s document was surrendered at the port of Chicago for a change in owner, homeport, and district. Horace Moore sold two-thirds of the vessel to Charles Deering of Chicago. Since Deering assumed the managing owner role, the vessel's home port was changed to Chicago, and Captain R. Aries took command. The vessel's official number (U.S. 19681) was assigned sometime during the year and was handwritten onto the document in red ink (Bureau of Navigation 1868). During the season, *Pride* delivered mixed cargos of boards, strips, lath and shingles to Milwaukee, Wisconsin, in April, June, and July from Saugatuck. In August the ship delivered lumber, strips, lath, and mixed wood from White Lake, Michigan. In October, it brought timber, scantlings, and joists to Milwaukee from Manistee, Michigan (*Daily Milwaukee News* 1868a, 1868b, 1868c, 1868d, 1868e; *Semi-Weekly Wisconsin* 1868a, 1868b, 1868c). Research did not identify information about other cargoes or locations.

Deliveries of boards, strips, and lath continued to Milwaukee from Saugatuck in April and May 1869 (*Chicago Tribune* 1869; *Daily Milwaukee News* 1869a, 1869b). During the sailing season, a schooner *Pride* lost its centerboard during a storm on Lake Michigan. However, research could not confirm that the damaged vessel is the *Pride* of Chicago (Hall 1869).

At the start of the 1870 shipping season, *Pride*'s enrollment document was surrendered at the port of Milwaukee for change of owner, homeport, and district. A new document was entered on 11 April 1870. Gideon J. Truesdell of Kenosha, Wisconsin, purchased the ship and became the sole owner. The vessel's homeport was changed to Kenosha, and Captain Archer returned to its helm (Bureau of Navigation 1870). Truesdell was a lumberman born in Holland in 1812. It is unknown when he immigrated, but by 1860 he was living in Muskegon, Michigan. The 1860 U.S. Census indicated he held real estate valuing $40,000 and had $15,000 in personal estate value. Truesdell, his wife, and 18-year-old daughter were living with lumber baron Joseph Hackley at his estate. By 1870, the family moved to Pleasant Prairie. Truesdell listed his occupation in the 1870 U.S. Census as lumber merchant and farmer. His personal estate was valued at $19,475, and he held real estate totaling $125,000 (U.S. Census Bureau 1860b, 1870b). Little was found in contemporary newsprints about the schooner's activities during the season. Only one arrival was recorded at Racine, Wisconsin, from Filer City, Michigan on 2 September with scantling, joists, and medium length timber (*Daily Milwaukee News* 1870).

Pride was recorded as one of eleven vessels wintering over in Kenosha (*Kenosha Telegraph* 1871a).

Figure 52. Gideon J. Truesdell (Find-A-Grave)

Around 11 April 1871, *Pride* was loaded with feed and sundries when it ran aground and went far up on the beach on Little Point Sable, Michigan. It took the efforts of the wrecking tugs *Waukesoo* and *Tempest* to remove the ship. On 27 April, *Pride* was towed into Pentwater, Michigan, for repairs (*Chicago Evening Journal* 1871; *Daily Inter Ocean* 1871a, 1871b; Hall 1871; *Kenosha Telegraph* 1871). The ship remained out of newsprint for the rest of the season and all of 1872. A note appeared in the annual compendium of vessel damage and losses on the Great Lakes in the *Detroit Free Press* that indicated in September 1873 a schooner *Pride* lost its foresail sprit. Research did not confirm which *Pride* this report described (*Detroit Free Press* 1873).

On 18 March 1874, *Pride*'s enrollment was surrendered for a change of owner. Lysander W. "L.W." Miller, Charles Chauncey "C.C." Miller, and John M. "J.M." Miller became equal one-third owners of the *Pride*. Kenosha remained its homeport and C.C. Miller became its new Master (Bureau of Navigation 1874). The *Pride* was valued at $3,500 with a B1 insurance rating (Board of Lake Underwriters 1874). The Miller brothers lived in Pleasant Prairie, Wisconsin. C.C. Miller was the oldest, born in 1835 in Erie, Pennsylvania. He was a lifelong sailor. L.W. Miller was younger than C.C. by two years and J.M. was two years younger than L.W. (U.S. Census Bureau 1870b). The schooner evaded newsprint in 1874 and 1875.

In 1876, *Pride* delivered lumber to Racine during the season. By 4 December the ship was in winter quarters at Kenosha (Hall 1876; *Racine Daily Journal* 1876).

Pride was fitted out in early April 1877, but before clearing Kenosha for points north, Captain Miller bought out his brothers and registered as sole owner and master of the ship (Bureau of Navigation 1877; *Kenosha Telegraph* 1877). The *Pride* was showing its age and repairs were needed. By the end of December, the vessel was expected at the Manitowoc, Wisconsin, shipyards for a rebuild to take place over the winter months. However, at 5 p.m. on 14 December Captain Miller's son, Charles died in the vessel's cabin while he was making repairs to the ship. Flags were lowered to half-mast in maritime circles at Kenosha (*Daily Inter Ocean* 1877a, 1877b).

Despite the tragedy, a full rebuild of the vessel was completed over the winter months (Board of Lake Underwriters 1879). On 4 March 1878, *Pride* was fitted out and cleared Kenosha bound for Baileys Harbor, Wisconsin. The ship arrived at Higgins' Pier and collected a load of wood for A. Higgins (*Door County Advocate* 1878; *Green Bay Advocate* 1878; *Kenosha Telegraph* 1878).

By 1879, the schooner's value decreased to $1500 and was rated a B1 insurance rating (Board of Lake Underwriters 1879). In August 1879, the *Pride* arrived at Kenosha with 50 cords of wood for E. Pennoyer and 200 posts for Backus & Glover. In September, the ship arrived at Kenosha with wood for Hastings & Holderness and then carried a cargo of hay to Baileys Harbor for Fitch Higgins. The ship returned to Kenosha again in November and December bringing wood for Hastings & Holderness (*Kenosha Telegraph* 1879a, 1879b, 1879c, 1879d).

Pride came out of winter lay up during the first week of March 1880 and departed Kenosha for Ludington, Michigan, on 11 March. Captain Miller was anxious to get out ahead of an approaching northeast gale, but their departure was delayed. To escape the storm's fury, the ship put in at Racine (*Kenosha Telegraph* 1880a, 1880b; *Daily Milwaukee News* 1880; *Racine Daily Journal* 1880a). *Pride* made the crossing and picked up a load of railroad ties at Ludington bound for Racine. In coming back across Lake Michigan, the schooner was caught in another gale which forced the ship into Milwaukee for shelter on 25 March (*Chicago Tribune* 1880; *Racine Daily Journal* 1800b). The prevalence of sudden squalls on the lake in the early season led to warning mariners to take an excess of caution (*Kenosha Telegraph* 1880b).

By early April 1881, although the lake was still ringed with a belt of ice, Kenosha harbor was clear and open to navigation and Captain Miller had the *Pride* fitted out for the season during the first week of the month. Wood was in short supply at Kenosha, and the ship left for Baileys Harbor on the evening of 10 April in the first favorable wind. Unexpectedly, the wind brought a snowstorm, and the ship was forced to seek shelter at Racine. While entering the harbor, the *Pride* struck the dock, and the vessel was slightly damaged. While the ship lay windbound for several days, it was repaired. *Pride* was finally able to continue its journey north, departing Racine on 20 April 1881 (*Chicago Tribune* 1881a, 1881b; *Daily Inter Ocean* 1881; *Kenosha*

Telegraph 1881a, 1881b, 1881c; *Racine Daily Journal* 1881a, 1811b). Following the collision with the dock, a leak developed that could not be curbed, and on 9 August, *Pride* went into dry dock at Milwaukee for more substantive repairs (*Chicago Tribune* 1881c). On 11 October, *Pride* was again forced to seek shelter from the wind. It was bound from Kenosha to Frankfort, Michigan, when it was forced into Milwaukee when a gale from the east northeast created heavy seas (*Chicago Tribune* 1881d).

Pride's 1882 seasonal fit-out went unreported in the papers. It could be that the ship was forced to winter at a port other than Kenosha. The schooner's trade went largely unreported in 1882 other than a brief mention that the ship was in Kenosha harbor during the first of June (*Kenosha Telegraph* 1882).

Captain Miller started preparations for the season on 1 March 1883 by conducting general maintenance, repairs, and painting of the ship (*Kenosha Telegraph* 1883a). On 7 April 1883, *Pride* was remeasured at Milwaukee under the new rules outlined in the Congressional Act of 5 August 1882 and received deductions in tonnage of 3.46 tons for a new net tonnage of 65.88 tons. Rather than issue new paperwork, these deductions are handwritten onto the enrollment document in red ink (Bureau of Navigation 1877). The trip to Milwaukee was the last for *Pride*'s mate, 21-year-old Louis Miller, son of the captain. Upon returning to Kenosha, he contracted diphtheria and died on 18 April after a short illness. Flags were again lowered to half-mast at the Life Saving station and on vessels at Kenosha harbor, in respect of the Miller family and to honor the promising young sailor (*Kenosha Telegraph* 1883b, 1883c). On 25 April, *Pride* sailed to Pentwater to fetch a cargo of hardwood lumber for the Bain Wagon Company (*Kenosha Telegraph* 1883d). Arrivals and departures of the vessel were recorded at Racine and Kenosha in May, June, and August (*Racine Daily Journal* 1883; *Kenosha Telegraph* 1883d, 1883e). In September, *Pride* loaded wood at MacEacham's Circle Ridge Dock in Sturgeon Bay (*Door County Advocate* 1883; *Weekly Expositor Independent* 1883).

On 24 April 1884, *Pride* arrived at Kenosha with a cargo of lumber marking its first delivery of the season. *Pride* was also recorded as the first vessel to arrive at Egg Harbor for the season. The ship took cordwood for Kenosha on Captain Miller's account at Kirtland's Pier on 27 April. Unfavorable winds kept the ship in port for an additional day. Regular trips through the Sturgeon Bay Ship Canal were recorded as the schooner was said to be engaged in freighting wood from Egg Harbor to Kenosha for Miller's own wood yard – this is the first notation of Miller's involvement in lumber sales outside of transportation to market (*Kenosha Telegraph* 1884; *Door County Advocate* 1884 a, 1884b; *Weekly Expositor Independent* 1884a).

Starting in July 1884, *Pride* began hauling small cargos (approximately 15 cords) of building stone to Kenosha from the Washington Ice Company's quarry in Sturgeon Bay. The quarry was open in 1880 by L.R. McLachlan, and although most of the stone was harvested for government harbor construction projects, the market for building-grade stone had not yet been realized in the southern part of the region, and Captain Miller was seeking to promote it (*Door County Advocate* 1884c, 1884d; *Weekly Expositor Independent* 1884b). On one trip through the

Sturgeon Bay Ship Canal, *Pride* was seen flying a "Blaine & Logan" flag from its masthead in support of the Republican ticket of presidential candidate James G. Blaine and vice-presidential candidate John A. Logan (Blaine lost to Democrat Grover Cleveland) (*Door County Advocate* 1884c).

Captain C.C. Miller became ill in the spring of 1885 and stayed at home for several trips, relinquishing command and other duties to his mate, John A. Hartnell. The ship was not seen in Sturgeon Bay until July, taking on its first cargo of building stone for the season on 29 July from the Laurie Stone Quarry. Captain Laurie also opened his quarry in 1880 and typically distributed his building stone to Marinette and neighboring towns. Kenosha was a blossoming market (*Weekly Expositor Independent* 1885).

In August, the ship began calling at Baileys Harbor and hauling wood to Racine and Kenosha on regular trips. In the early morning hours of 24 August 1885, while sailing a cargo of wood from Baileys Harbor to Kenosha in a storm, the schooner strained under the heavy load and sea conditions, resulting in a leak off Manitowoc. To lighten the vessel, two-thirds of its deck load was cast into the water. The ship was taken in tow in its waterlogged condition to Milwaukee where it was brought directly to the shipyard for repair (*Kenosha Telegraph* 1885a; *Oswego Daily Times Express* 1885; *Racine Daily Times* 1885). *Pride* remained out of newsprint for the rest of the season outside of a notation on 20 November indicating that the schooner was going into winter quarters at Kenosha (*Kenosha Telegraph* 1885b).

On 30 March 1886, *Pride*'s enrollment was surrendered at the port of Milwaukee for a change in owners. Captain Miller sold one-third of the vessel to 24-year-old John A. Hartnell for $333. The new registration defines this asset split and names Hartnell as the vessel's new master. Hartnell was born in 1862 in Newfoundland, Canada and immigrated with his family in 1876 to Salem, Wisconsin where he soon after became a sailor (Bureau of Navigation 1886a; *Door County Advocate* 1886a; *Racine Daily Journal* 1886a; *Kenosha Telegraph* 1886; *Marine Record* 1886a; U.S. Census 1880). Just two weeks later, on 14 April 1886 the ship's document was surrendered again for another change of owners. C.C. Miller sold his two-thirds share to Harry Hervig of Racine. *Pride*'s homeport was changed to Racine. Hartnell retained his one-third share and command of the vessel (Bureau of Navigation 1886b).

Harry Hervig was born Halvardius Hervig in 1859 in Porsgrunn, Telemark, Norway. He immigrated from Norway and made his way to Racine in 1881. Although he had prior sailing experience, *Pride* may have been the first vessel he owned. He later owned and sailed aboard the schooner *Jason Parker* (Gjerset 1979; U.S. Census 1900).

Labor disputes slowed shipments loaded from Door County lumber docks in the early season. During the last week of May, *Pride* picked up a cargo of lumber at Eliason's Pier in Ellison Bay for Andrew Nelson, and in June delivered wood for Mr. Higgie to Racine. In July and August, the ship brought wood to N.P. Nelson's dock in Racine. Each time the vessel would unload and

clear light, without cargo (*Door County Advocate* 1886b; *Racine Daily Times* 1886a, 1886b, 1886c, 1886d, 1886e).

By August 1886, Hervig had taken command of the ship and was having some difficulties managing finances while at the same time sailing the vessel. *Pride* laid to Racine's harbor for several days so Herving could manage his financial issues. Hervig brought in his brother Nils Peder Hervig, three years his junior, to help (*Racine Daily Journal* 1886b; U.S. Census 1920). On 19 August the ship's enrollment document was surrendered at the port of Milwaukee for a change in owner and master. The new document listed "Harry" Hervig as sole owner and Nils Peder Hervig took over the helm (Bureau of Navigation 1886c). For the remainder of August and through September, near weekly shipments of cordwood were delivered to Racine aboard the *Pride* (*Racine Daily Journal* 1886c, 1886d, 1886e). The ship remained out of newsprint in October and November. On 18 December, it was announced the ship's foremast needed to be replaced. It is likely this work was completed at Milwaukee as the ship wintered over in that harbor (*Marine Record* 1886; *Racine Daily Journal* 1886f).

At the beginning of February 1887, work started on *Pride* to replace its foremast. It was discovered that other repairs were needed, and the vessel received a complete overhaul. Along with the new foremast, the vessel's stern was also replaced at a cost of $400 (*Racine Daily Times* 1887a; *Racine Daily Journal* 1887a).

On the morning of 12 April 1887, *Pride* cleared Racine for Ahnapee, Wisconsin but was forced to drop anchor just outside the Racine harbor entrance for lack of wind (*Racine Daily Times* 1887b). Cordwood was delivered to Kenosha on 29 April. The vessel was unloaded and cleared that afternoon for Baileys Harbor. Additional loads of cordwood were delivered on 6 May, 13 May, 20 May, 15 July, and 5 August, each time unloading and clearing light on the same day (*Kenosha Telegraph* 1887a, 1887b, 1887c, 1887d, 1887e, 1887f). The ship stopped at Racine windbound on 27 May and 23 June. Deliveries of wood to Racine were made for Mr. Johnson on 5 July, to the West Shore Lumber dock on 8 August, and to Hedstrom & Company. on 26 October (*Racine Daily Journal* 1887b, 1887c, 1887d; *Racine Daily Times* 1887b, 1887c, 1887d, 1887e, 1887f, 1887g).

In November 1887, the Hervig brothers placed several announcements in local papers advertising the schooner *Pride* for sale. No buyers came forward, and by the end of December, the ship was put in winter quarters at Racine (*Racine Daily Journal* 1887e, 1887f; *Marine Record* 1887).

Pride's first trip of the season was to Baileys Harbor to collect a cargo of wood for Racine. Mrs. George Larson took passage to Racine on the schooner leaving Baileys Harbor on 29 April 1888. Mixed wood and lumber were collected from Baileys Harbor and Jacksonport, Wisconsin. *Pride* delivered wood to Milwaukee on 7 May. Deliveries to Racine were made to Kelley, Weeks & Company on 15 May, 28 May, and 26 June; to E.L. Hedstrom & Company on 30 July; to L. and N. Johnson on 23 July, 30 July, and 19 September; and to J.R. Morris on 6

October and 18 October. Other deliveries of slabs and cordwood were made on 9 July, 1 August, 20 August, and 27 August. The ship was delayed by wind on 18 May and 8 October at Racine (*Independent* 1888a, 1888b; *Racine Daily Journal* 1888a, 1888b, 1888c, 1888d 1888e, 1888f, 1888g, 1888h, 1888i, 1888j, 1888k, 1888l, 1888m, 1888n; *Racine Daily Times* 1888a, 1888b, 1888c, 1888d, 1888e).

On 26 June 1888, when the ship was unloaded, Captain N.P. Hervig mistakenly hired two competing gangs to unload the vessel. Trouble was avoided by paying one team $12 for their work. The other team settled on $2 and a keg of beer (*Racine Daily Journal* 1888e). At the end of the season another round of advertisements was placed offering the vessel for sale – this year adding "FOR SALE – CHEAP" and "in good sailing order, has been repaired the last two seasons" (*Racine Daily Journal* 1888o, 1888p). Still no buyer came forward.

As in the previous season, in 1889 wood was picked up from Baileys Harbor and Jacksonport. Deliveries at Racine were made for Lawrence & Company of steamboat wood on 24 May and cordwood on 7 June. Other deliveries were made on 15 July, 3 September, and 30 September (*Independent* 1889a, 1889b, 1889c; *Racine Daily Journal* 1889a, 1889b, 1889c). On 2 October, *Pride* was laid up early for the season without explanation. It was hauled up the Root River where it was put to winter quarters losing nearly two months of sailing (*Independent* 1889d; *Racine Daily Journal* 1889d, 1889e).

In February 1890, information was leaked to the press that the schooner needed to be hauled out to receive extensive repairs to its hull. The next day, an advertisement appeared offering the ship "FOR SALE – CHEAP," this time with the provision "if sold before March 15" (*Racine Daily Journal* 1890a, 1890b). The extent of the rebuild is not known, but the schooner did not return to service until mid-June. Deliveries of wood to Racine for the 1890 season occurred on 18 June, 7 July, 11 August, 29 August, and 10 September. No information was located about the ship's whereabouts later in the fall or winter (*Racine Daily Journal* 1890c, 1890d, 1890e, 1890f; *Racine Daily Times* 1890a, 1890b).

In February 1891, the Hervig brothers published their perennial advertisements for the sale of the ship, indicating that it was offered at "a very low figure" and asserting that the *Pride* was "one of the staunchest and fast sailing schooners on the lake, of her size" (*Racine Daily Journal* 1891a, 1891b). Again, no interested parties came forward. Deliveries of wood at Racine during the 1891 season were made on 2 May and 25 July for Fellows & Bliss, and others on 13 May and 27 June (*Racine Daily Journal* 1891c, 1891d, 1891e; *Racine Daily Times* 1891; *Weekly Wisconsin* 1891).

An incident occurred on 22 July 1891 while loading lumber at White Lake, Michigan, for Fellows & Bliss. The cook went on deck to dip a bucket into the water when he slipped and struck his head on the rail. He fell overboard and sank to the bottom. His body could be seen clearly on the bottom in only 12 feet of water, but no one could find a pike pole and the depth was beyond the ability of those that could swim. A member of the life-saving crew was

summoned. He was able to dive down and bring the cook to the surface. After nearly 30 minutes on the bottom there was waning hope for his survival. The cook was laid out on the deck but before efforts were started to revive him, he opened his eyes, gasped, and got to his feet, apparently not having aspirated any water (*Racine Daily Journal* 1891f; *Weekly Wisconsin* 1891).

Another incident occurred on the night of 10 October 1891. Captain Hervig mistook the light on a rolling mill for the pierhead light at Racine. The mistake was not noticed until the ship was in the breaker. Both anchors were dropped in hopes of keeping the vessel off the beach. The life-saving crew stood by all night and ran a line from the schooner to the tug *Hagerman*. At daybreak the tug brought the schooner inside the harbor. On board the *Pride* were only the captain, his wife, and their child (*Racine Daily Journal* 1891g).

Deliveries at Racine during the 1892 season included wood for L.A. Nelson on 1 June and wood for Fellows & Bliss on 1 August, 26 August, and 5 November. Other deliveries included slabs on 26 April and wood on 17 October for unidentified parties (*Racine Daily Journal* 1892a, 1892b, 1892c, 1892d; *Racine Daily Times* 1892a, 1892b).

On 2 February 1893, *Pride*'s enrollment was surrendered at Milwaukee for change of owner. New paperwork was filed indicating that Jacob Wilson was the vessel's sole owner and master. Captain Wilson was a career sailor living at 12th Avenue in Milwaukee. Although valued at $800, Captain Wilson purchased *Pride* from Harry Hervig for $1,000. *Pride*'s homeport was changed to Milwaukee (Bureau of Navigation 1893; *Racine Daily Journal* 1893a; Wright 1893).

On 10 June 1893, the schooner loaded a cargo of bark at Herring Creek, Michigan, and was bound for Milwaukee when in the early morning hours of 11 June and 15 miles off Big Point Au Sable, the vessel suddenly capsized. The crew managed to get into the ship's yawl and rowed against heavy seas to shore. The turtled schooner was left floating in the lake. Later in the afternoon on 11 June off Manitowoc, the steamer *P.D. Armour* spotted the *Pride* floating on its side with its spars out parallel to the surface of the water. The schooner was drifting in a field of its bark cargo. The vessel was righted, pumped out, and towed into Milwaukee where it was moored at the Milwaukee Tugboat line dock. Although capsizing is typically associated with squalls that spring up on the lake before a crew can lower the ship's canvas, the *Pride*'s crew indicated that there wasn't a ripple on the surface, and the accident was caused by the weight of bark piled twelve feet high on its deck. This made the ship top-heavy. The sailors on board said, "she was upset as though some unseen power was pulling her over" (*Algoma Record Herald* 1893; *Buffalo Enquirer* 1893; *Daily Inter Ocean* 1893; *Manitowoc Pilot* 1893; *Racine Daily Journal* 1893b, 1893c).The *Pride* was back in service by September and called twice at Reynolds' pier in Jacksonport, on 4 September and 25 September, taking on lumber for Milwaukee (*Door County Advocate* 1893a, 1893b).

Beginning in 1894, the trail of documents used to construct a complete service history for the schooner *Pride* becomes sparse. In 1894, two news articles mention a schooner *Pride*. The information provided is limited, making it impossible to confirm which *Pride* is referenced. On 10 July a schooner *Pride* became stuck in the draw of the bridge at Sturgeon Bay (*Door County Advocate* 1894). On 16 August a schooner *Pride* bound for St. Joseph, Michigan, came into Racine to wait out a headwind (*Racine Daily Times* 1894). There is no mention of the vessel in newsprint in 1895. On 25 April 1896, a schooner *Pride* loaded wood at Horseshoe Bay and came into Sturgeon Bay to wait for a favorable weather window before departing for points south (*Door County Advocate* 1896). On 17 September 1896, a schooner *Pride* loaded wood at Reynold's pier in Jacksonport (*Door County Democrat* 1896). There is no mention of the vessel in newsprint again in 1897. And on 19 June 1898, a schooner *Pride* was anchored in Sturgeon Bay waiting for a wood cargo down the bay shore (*Advocate* 1898a). The ambiguous nature of these accounts could be attributed to either the 1849 or the 1866 ship, both with the same name, both of which were operating in the same region, and both running on very similar routes.

The *Pride* left Milwaukee on 20 August 1898, arriving at Egg Harbor on the afternoon of 22 August. After setting anchor, Captain Wilson went ashore to contract for a cargo of wood while his 24-year-old son and the ship's mate, Thomas Wilson, set the canvas to dry and started preparing dinner. When the captain returned to the ship, the sky looked ominous. The two men set to work furling the canvas before retiring to the cabin to eat. Just as they sat down at the table, a squall struck from the northwest hitting them with wind, rain, and hail. The men instinctively ran up to the bow and let out 270 feet of chain (45 fathoms). The mate returned aft to secure oil skins (rain gear), and at that moment, the ship was whipped around its anchor in a cyclone and was caught broadside by a gust so strong it capsized the ship. As the captain realized the vessel was going over, he jumped into the water. *Pride* was flipped over with such force that its two masts became embedded in the mud bottom. Captain Wilson clung to the overturned hull before fisherman Truman Thorp came to his aid in a pound net boat from shore. A thorough search of the area was made for Thomas Wilson, but he was not found. It was assumed he was trapped and drowned in the cabin. On 24 August, the wrecking tug *Albert J. Wright*, with the assistance of the Sturgeon Bay life-saving crew, righted the *Pride*. An extensive search of the ship was made, but the mate was not found. Inside the cabin the crew was able to rescue the ship's mascot, Wilson's Newfoundland dog who was found alive. Thomas Wilson's body was recovered from the water a week later and buried at Bayside Cemetery in Sturgeon Bay. The Newfoundland, named Hobson, was presented as a gift to Dr. Horace F. Eames, a well-respected doctor and influential community leader in Egg Harbor (*Advocate* 1898b, 1898b, 1898f; *Racine Daily Journal* 1898; *Wisconsin State Journal* 1898).

The *Pride* was taken in tow to Sturgeon Bay, and its hulk sold to Leathem & Smith to satisfy their wrecking costs. The ship was tied up on the north side of the Leathem & Smith coal dock near the wrecked steamer *Fountain City*, in an area locally referred to as the "marine cemetery." The schooner sprung a leak, broke its ties, and drifted away from the dock (*Advocate* 1898c, 1898d). A copy of *Pride*'s enrollment was surrendered on 21 August 1899 at Milwaukee.

Erroneously the document stated that the ship capsized in Sturgeon Bay, not Egg Harbor. The paperwork indicated that the vessel was a total loss, and it was towed into the harbor and sunk (Bureau of Navigation 1893).

The location to which *Pride* drifted put it in the path of vessels transiting Sturgeon Bay. It became a hazard to ships navigating through the draw of the bridge while avoiding other known obstructions in the bay. A notice to mariners was issued in regional papers. In response to this outcry, in September 1899, the sunken schooner was transferred to the south end of Dunlap Reef (*Advocate* 1899a, 1899b; *Cleveland Plain Dealer* 1899).

By April 1900, the shipyard began to give serious consideration to raising and restoring the schooner. *Pride* was thought to be sound enough that with a reasonable investment of funds and effort it could likely sail again. This may have been wishful thinking in part due to Captain Wilson's employment at the yard for the prior two years (*Advocate* 1900a, 1900b). On 4 June, the tug *Nelson* attempted to pull the *Pride* off the end of Dunlap Reef, but it proved to be too big of a job for one tug. On the afternoon of 6 June, *Nelson* was joined by the tug *Leathem*. With the two tugs working together, they were able to move the *Pride* to the west end of the bridge where it was run ashore and would be pumped out. However, by the end of July, work on the vessel had gone no further, and by mid-August the *Pride* was slowly going to pieces. The irony of the situation is that *Pride* was transferred to Leathem & Smith to cover their salvage costs, but with inaction after removing it from the reef it fell apart -- in the words of *The Advocate* (1901), "this was a case where both wrecker and the wrecked were losers."

Site Description

The remains of the schooner *Pride* lie 250 feet north of the intersection of West Juniper Street and North Lansing Avenue in Sturgeon Bay, Wisconsin, in the waters of Sturgeon Bay. The vessel sits on a heading of 244 degrees and lies parallel to the shore, in a bed of silt and thick weeds. The remains are heavily colonized by quagga mussels. The shipwreck rests in eight feet of water, and the hull of the vessel remains intact up to the turn of the bilge, with the hull sides, deck shelf, and bulwarks fallen outward. Its centerboard trunk has been displaced to port side of the keelson. The deck with deck planking and deck beams has lifted and now sits perpendicular to the hull off the port side of the vessel. At the time of the survey in May 2023, the transom was not visible above the sediment. All the vessel's construction components and artifacts remain within its hull.

A temporary baseline was attached at the sternpost and stretched 80 feet down the length of the vessel along the keelson, past the ship's bow to include the debris of the port side forward quarter of bulwarks, and its fallen stempost. The vessel's upper works have detracted, spun counterclockwise and came to rest on the port side of the ship, perpendicular to the hull and bilge. This was likely caused by ice. A second temporary baseline was placed along this 50-foot section of the vessel's upper works. The deck section's baseline was plotted on the site plan

using trilateration to the keelson baseline to achieve the correct angle. All measurements and documentation for the survey were taken from these baselines.

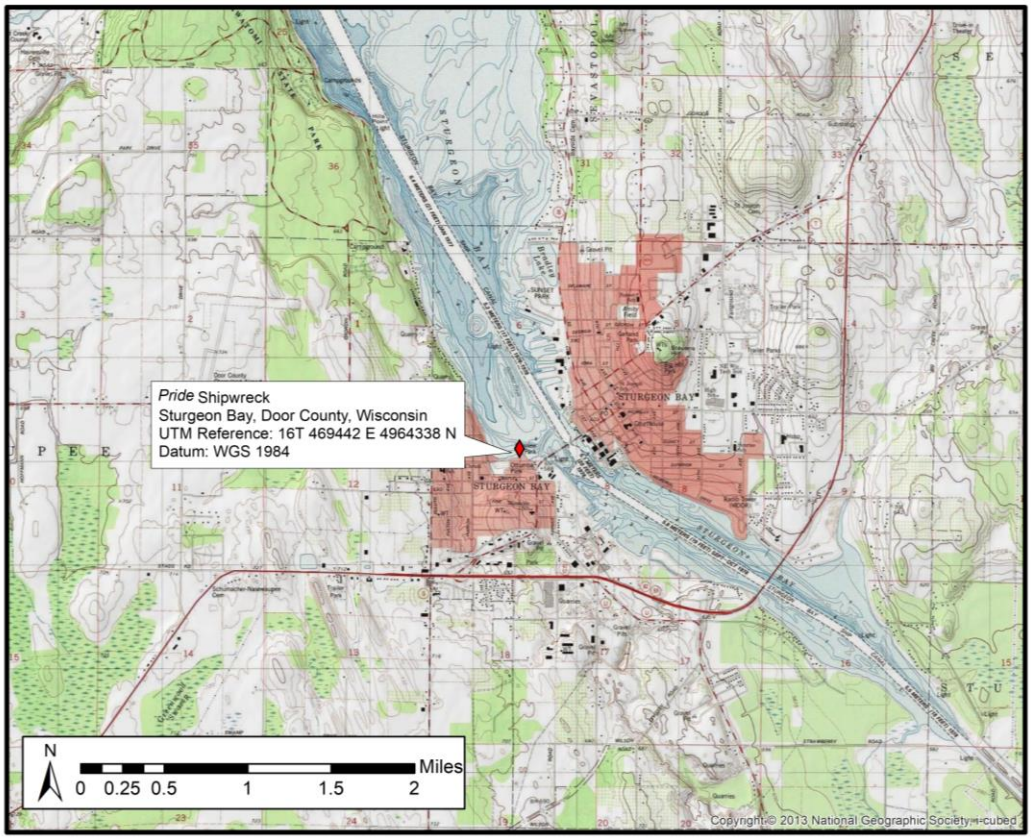

Figure 53. Location of the *Pride*.

After it was abandoned, the vessel settled deeply into the soft sediment of the bay, rendering its removal impossible. Different portions of the vessel are visible dependent on the conditions of the shifting sediment. The site was marked on early maritime charts after its abandonment, but the identity of the wreckage and the location was not retained. The wreckage rises approximately 4.5 feet off the lakebed measured from the silt to the top of the sternpost.

In early 2021, maritime historian Dr. Richard Boyd shared an early 1900s nautical chart of Sturgeon Bay that included markings of generalized locations of some shipwrecks with maritime historian Robert Jaeck. On 13 May 2021 Jaeck located the long-forgotten schooner *Pride* using a combination of the historic map and a Lowrance Structure scan 455/800 KHZ sonar. Jaeck applied for a Public Lands Field Archaeology Permit from the Office of the Wisconsin State Archaeologist, and along with members of the Wisconsin Underwater Archaeology Association, they initiated a survey of the shipwreck in May 2022. Due to wind direction, water clarity issues, and other weather concerns, the team was only able to complete two dives on the site. In June 2022 Jaeck reached out to the Wisconsin Historical Society (WHS) for assistance in completing the work. In May 2023 a team from the WHS Maritime

Preservation and Archaeology program completed a Phase II archaeological survey as a three-day field training exercise for the program's volunteer divers. Given the wreck's dimensions, location, and a comparison of vessels abandoned in the vicinity based on historic newspaper accounts, the remains were determined to belong to *Pride*.

The *Pride* is representative of the class of sailing vessel which transported bulk cargo and general merchandise within its hull. As an integral part of the maritime transportation system, many features of this vessel type were common to all schooners on the Great Lakes. As described in the Multiple Property Documentation Great Lakes Shipwrecks of Wisconsin (Cooper and Kriesa 1992), schooners were fore-and-aft rigged, and had two or more masts, carrying square-rigged topsails on their foremasts augmented with a triangular sail. Most Great Lakes schooners were single decked, with a small cabin structure on the deck. At the time of its registration, the *Pride* was described as a wooden schooner with one deck and two masts, a gross tonnage of 69.34 tons, a length of 71 feet, breadth of 20.2 feet, and a depth of hold measuring 6.6 feet (Bureau of Navigation 1866).

The stempost has fallen forward; it is detached from the keelson and lies on the bottom of the lakebed, angled 16 degrees to starboard. The stempost measures 0.9 feet wide by 0.7 feet thick and is 9.6 feet long. The sternpost measures 0.9 feet wide by 0.7 feet thick, and 4.5 feet is exposed above the sediment. The sternpost leans 32 degrees to the starboard side with a 6-degree tilt aft. The hull has separated from both stempost and sternpost. Both sides of the hull broke at the turn of the bilge and fell outward. The hull pieces lie on an even keel on the bottom although only about 35 feet of either hull side is exposed above the muck.

The keelson assemblage is twisted. The first twenty feet of the keelson aft of the bow is angled six degrees to starboard. The keelson is broken 18 feet aft of the bow, and a repair is evident. The replacement section is abutted side by side 18 to20 feet aft of the bow. The next ten feet lean 12 degrees to starboard. At 30 feet aft of the bow the keelson rights and is angled 10 degrees to starboard. From 50 to60 feet aft of the bow the keelson leans 20 degrees to starboard. Aft of this to the stern, it leans to the starboard side 22 degrees.

The keelson measures 0.4 feet wide and 0.6 feet thick. A rider keelson is located from 43.7 feet to 69 feet aft of the bow and measures 0.6 feet thick and 0.7 feet wide. On top of this is a secondary rider keelson that is located from 56 feet to 69 feet. It measures 0.4 feet wide and 0.7 feet thick. A third rider rests atop this from 58.7 feet to 69 feet and is 0.4 feet wide and 0.4 feet thick. A partial sister keelson is exposed from the sediment on the port side of the keelson from 38.6 to 41.3 feet aft of the bow and measures 0.2 feet wide and 0.5 feet thick.

The keelson structure (twisted) and floors remain on an even keel. The hull is broken at the turn of the bilge between the first and second futtocks. The side walls have fallen outward. The top of the first futtock and the bottom of the second futtock is all that is exposed. The upper extent of the hull frames to the deck shelf remains covered with sediment. The *Pride* was double framed with a room of 0.45 feet and a space of 1.2 feet. Individual futtocks vary from 0.15 feet

to 0.2 feet wide with consistent thickness of 0.3 feet. Four cant frames were visible on the starboard side at the bow. These measure 0.2 feet wide and 0.25 feet thick with irregular spacing between 0.6 feet and 1.0 feet.

Figure 54. Frame sets at turn of bilge protrude from *Pride*'s hull.

Twenty-two feet aft the bow and three feet to the port side of the baseline lies a fragment of the vessel's centerboard trunk. The trunk detached from the keelson, has fallen outward, and is lying on its side. Four boards are visible on the upturned side of the trunk. These boards alternate between 1.1 feet and 0.8 feet in width, and these individual boards measure 0.2 feet thick. Overall measurements of the centerboard trunk are 14.5 feet long and 4.2 feet tall with a thickness of 0.8 feet. No centerboard remains within the centerboard trunk. Attached to the keelson assembly 35 feet aft of the bow remains a fragment of the centerboard trunk indicating where the aft end of the trunk would have been located. It measures 0.6 feet wide,0.8 feet long, and matches the end timber of the trunk.

Ceiling planking was measured on the hull side near the stern. It measures 0.65 feet wide and 0.05 feet thick. Outer hull planking measurements were taken in the same area. It similarly measured 0.65 feet wide and 0.05 feet thick.

Two, 35-foot sections of the bulwarks are exposed on port and starboard sides of the ship. Bulwark stanchions measure 0.35 feet wide and 0.35 feet thick with 1.8 feet spacing. The rail cap measures 0.6 feet wide and 0.15 feet thick. Bulwark planking is 0.5 feet wide and 0.1 feet thick. A portion of the deck shelf remains attached to the bulwarks. It is located 2.5 feet below the rail cap. The deck shelf measures 0.6 feet wide and 0.13 feet thick.

Double bitts were located at the bow. These bitts measure 3 feet long and are 0.35 feet wide and 0.2 feet thick with 1.3 feet spacing. The bitts would have topped the rail cap by 0.8 feet. The bow bitts are disarticulated forward from their original location but remain associated with their respective sections of bulwarks. Two single stern bitts remain on the port and starboard side of the site. They are located 50 feet aft of the bow and 13.5 feet on the port side of the baseline, and 52 feet from the bow and 11 feet on the starboard side of the baseline. Each measure 3 feet tall, 0.4 feet wide, and 0.2 feet thick. The bottom of the stern bitt tapers 0.5 feet toward the bulwark stanchions. The rail cap is notched 0.1 feet on the inner rail to accept the bitt.

Figure 55. *Pride*'s Samson post.

Fourteen feet aft of the bow and 6.4 feet to the port side of the baseline lay the detached deck structure. Eleven deck beams are extant. Deck beams are 0.3 feet thick but vary in width by 0.3 or 0.4 feet wide. The spacing of deck beams measure 1.3 feet forward of the forecastle

combing, 1.7 feet aft of the forecastle but forward of the foremast, and 1.4 feet aft of the foremast. Several pieces of deck planking remain attached to the deck beams. Deck planking measures 0.3 feet wide and 0.03 feet thick.

The Samson post remains with the deck section debris. It rises 8.6 feet above the sediment through the deck five feet aft of the bow. The Samson post leans aft 62 degrees and is resting 14 degrees to the port side. The Samson post measures 0.8 feet square and is mortised on its forward face. The mortise measures 0.4 feet long, 0.85 feet wide, and is 0.2 feet deep. This mortise would have received the vessel's bowsprit.

The windlass would have stood on the deck aft of the Samson post. The windlass is not extant and all that remains is one windlass standard knee on the port side of the Samson post. The knee measures 8.2 feet long and stands 0.65 feet tall. It tapers toward the bow 0.9 feet from the aft end of the knee, where the taper stops and flattens out. It appears to have been broken. An iron support strap for the windlass cheek remains attached. The strap measures 1.3 feet long and 0.2 feet wide. It is fastened to the aft end of the knee and pinned in place.

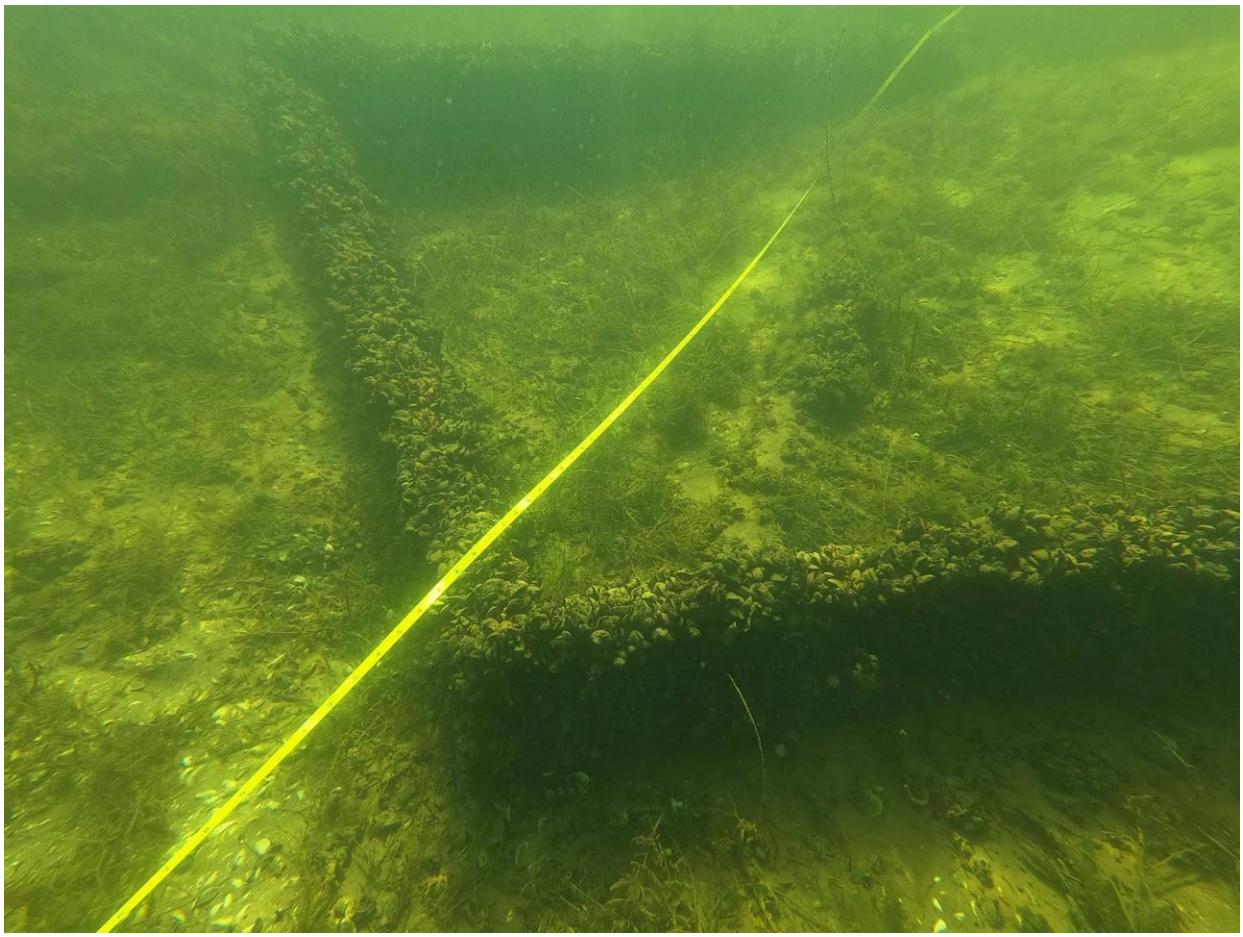

Figure 56. *Pride*'s cargo hatch combing.

The forecastle hatch combining is located 7.5 feet aft of the bow on the secondary baseline. This would have been the entryway for sailors below deck and provided access to the ship's

chain locker. The forecastle hatch combing is two feet square and 0.7 feet tall. Although heavily eroded, the combining on its lower margins is 0.13 feet wide.

Centered at 14.7 feet on the secondary baseline is the foremast hole. Given the size of the hole, it is estimated that the foremast would have been approximately 1.6 feet in diameter. The deck beams adjacent to the foremast hole are split to accommodate the spar. The end of an eyebolt is exposed from the sediment forward of the mast hole at 12 feet on the secondary baseline. The purpose of this fastener is not known.

Aft of the foremast hole and 18.5 feet on the secondary baseline is a deck machinery platform. This platform is 2 feet long, 3 feet wide, and 0.07 feet thick. It would have held either a bilge pump or machinery used to assist in raising the sails. The machinery is no longer present on the site.

The cargo hatch likely originated aft of the machinery platform. The hatch combing has detached, ajar to its original position, and is located 26.5 feet aft of the bow on the secondary baseline. The hatch combing internal dimensions is 6 feet square. It is 0.8 feet tall and topped with a metal cap. The metal cap is 0.15 feet wide and 0.02 feet thick.

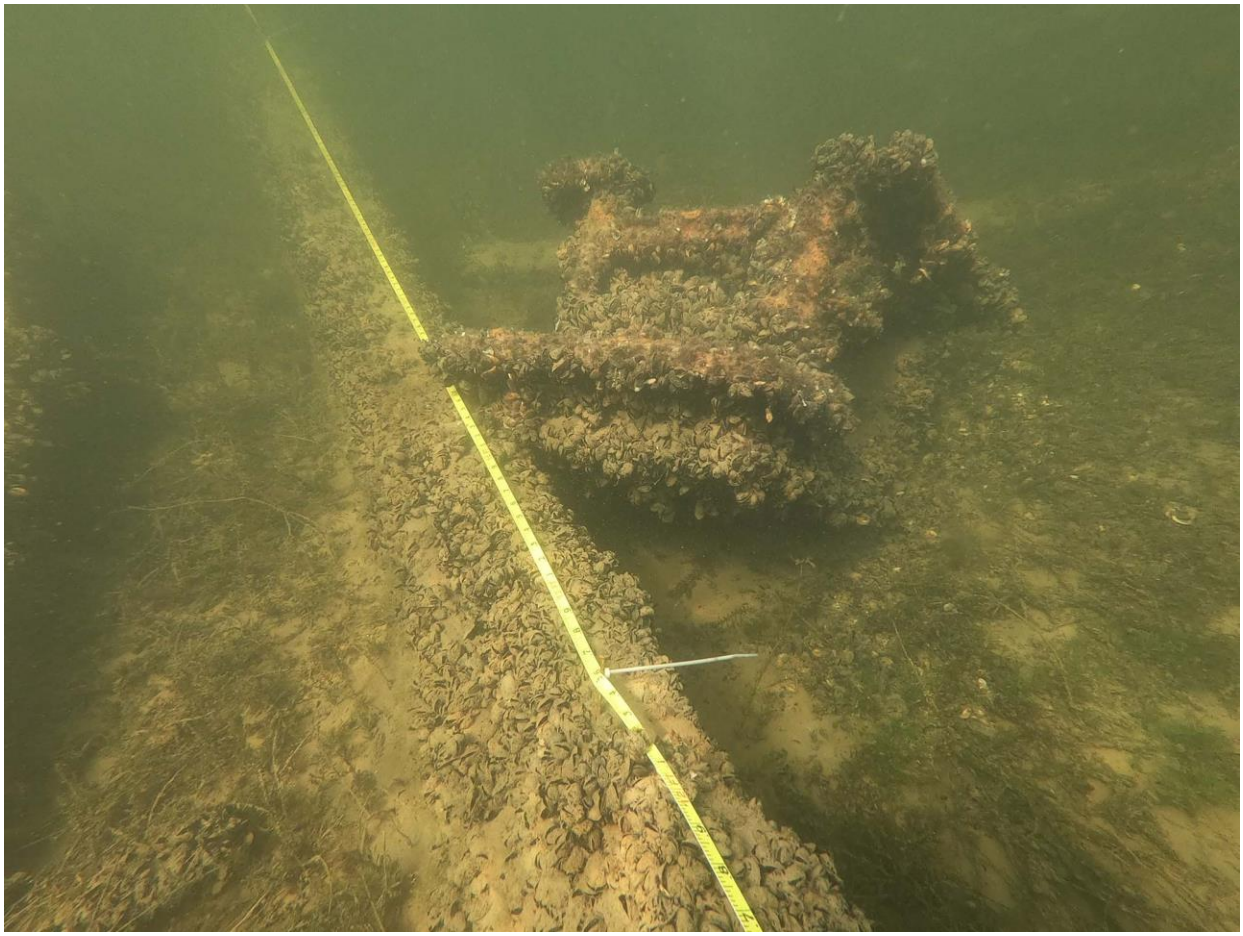

Figure 57. The ship's stove is partially balanced on the edge of the keelson assembly.

Along the port side of the deck section are three strands of wire rigging protruding from the silt. At the end of two of these wires are wooden deadeyes. The deadeyes measure 0.5 feet wide and 0.25 feet thick. The wire around deadeye is 0.06 feet thick and the larger cable leading up to the deadeye is 0.08 feet thick. These wires represent stays for the foremast.

A double sheave block was located 60 feet aft of the bow on the main hull section of wreckage and 6 feet to the port side of the baseline. It measures 0.7 feet wide and 0.5 feet thick. The sheaves are 0.5 feet in diameter and 0.1 feet thick. There is a hook at the top of the block that measures 0.5 tall and is 0.12 feet in diameter.

Figure 58. *Pride*'s rudder.

Fifty-six feet aft of the bow on the hull section's baseline is the stove, which sits upright on the starboard side of the keelson and is partially balanced on top of the edge of the keelson assembly. The top of the stove measures 2 feet long, 3.4 feet wide, and is 1.7 feet tall. The remains of the cooktop are broken and inside the stove. The oven chamber inside the stove's body was accessed through an L-shaped opening. The doors were not located during the survey. It has an oval flue at the back that was 0.7 feet wide and 0.34 feet tall. The multilevel protrusions, the L-shaped door and the oval flue are similar in design to Acme Wonder Cook Stoves; but the make and model has not been confirmed (Crown Publishers 1902).

The ship's rudder was found 20 feet off the starboard side of the main baseline, 30 feet aft of the bow. The unlikely location of the rudder is potentially attributed to ice moving features around the site. The rudder post measures 11.5 feet long, 0.45 feet wide, and is 0.5 feet thick. Its blade measures 6.5 feet tall along the rudder post and 3 feet wide at its base, with a thickness of 0.4 feet. An iron pintle protrudes 0.45 feet from the bottom of the rudder post and measures 0.12 in diameter.

This vessel lies buried deep in silt and under heavily weeded conditions, many of the associated artifacts remain intact on the site. The extent of the quagga mussel colonization at this depth in recent years has obscured any smaller artifacts that may be in the associated debris field. Because of this, the probability for additional artifacts to be identified in subsequent years remains high. Although some salvage occurred on the site and the hull is broken, the archaeological integrity of the site remains high, with most of the components of the ship represented. Data collected during the survey has provided additional archaeological information about the construction of Great Lakes sailing vessels and nineteenth-century maritime commerce but more remains to be uncovered.

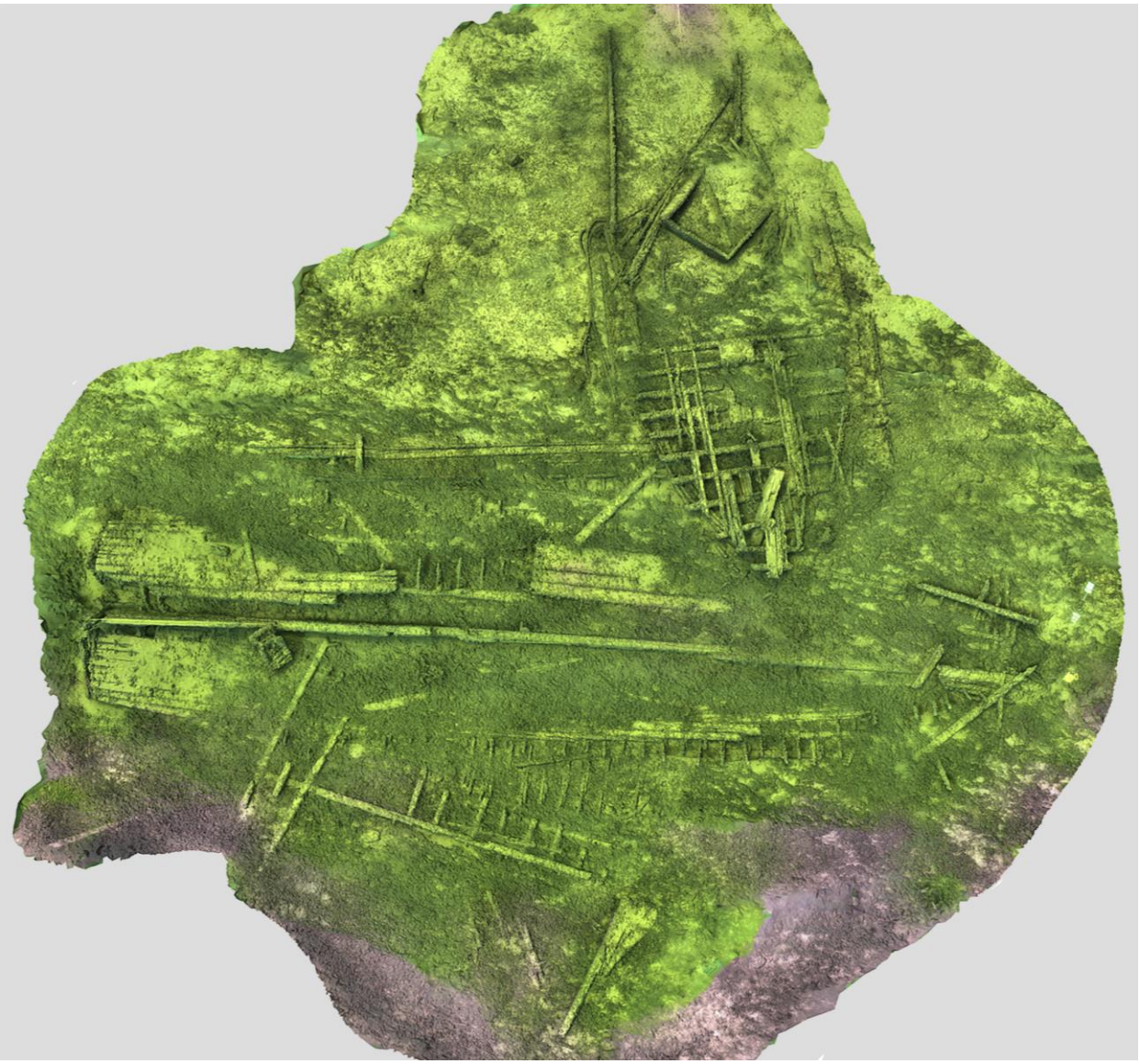

Figure 59. Photogrammetry model of the schooner *Pride* (Zach Whitrock)

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CHAPTER EIGHT
SCHOONER *SASSACUS*

In the mid to late1880s three Great Lakes vessels carried the name *Sassacus*. In October 1864 a 250-ton steam tug *Sassacus* was launched from the Quayle & Martin shipyard in Cleveland, Ohio and in 1888 the 11-ton steam yacht *Sassacus* was built by Bowdish & Co. at Skaneateles, New York for A.E. Bradley of Buffalo, New York (*Cleveland Leader* 1864). Every effort has been made in writing this text to avoid confusion with these two other ships.

In 1867 the schooner *Sassacus* (U.S. 22916) was built at the Lee & Navagh shipyard in Oswego, New York in 1867 by builder John Navagh. *Sassacus* was described as schooner-rigged with two masts, one deck, a square stern, and plain head. It measured 94.7 feet long, 22.3 feet beam and 6.7 feet depth. The ship's total tonnage was calculated at 109.02 tons of which 103.56 tons capacity was under tonnage deck and 5.46 tons capacity of enclosures was on the upper deck. John Navagh, Isabella Lee, and Robert Hayes equally owned the vessel. The ship was enrolled at port of Oswego on 14 May 1867 and Captain Robert Hayes was assigned as its first Master (Bureau of Navigation 1867; *Marine Record* 1892; *Oswego Palladium* 1934).

John Navagh was born 25 November 1827 in Navin, Meath, Ireland. John Navagh, *Sassacus*' owner and builder was the younger brother of Lee & Navagh shipyard partner, James Navagh. The Navagh brothers followed in their father's footsteps learning the shipbuilding trade after immigrating as a family in 1829 (*Oswego Palladium* 1892; U.S. Census 1850). Isabella Lee was the daughter of prominent Oswego shipbuilder John Lee. She was born in Canada in 1827. Her father, John Lee (along with James Navagh) was a principal in the shipbuilding firm Lee & Navagh where he worked as a ship carpenter and shipbuilder for many years (*Oswego Palladium* 1890; U.S. Census Bureau 1850). Captain Hayes was a pioneer lake seaman from Oswego. He worked his way up to Mate of the brig *Andes* before taking command of the *Sassacus*. Later in his career he captained *Carthaginian, A.H. Moss*, *Sunshine*, and *Kate Kelly*. He moved to Buffalo before he was lost overboard from the barge *Ogarita* in Lake Erie in May 1892 (*Marine Record* 1892).

Little is known about *Sassacus*' first year of service. On 17 April 1868 a new enrollment for the vessel was entered at the port of Oswego for change in owners. Captain Patrick Ryan replaced Captain Hayes at the helm and took control of his share in the ship (Bureau of Navigation 1868). Ryan was a career sailor that boarded in Oswego (Fitzgerald 1868).

Sassacus worked in the Chicago lumber trade throughout the 1868 season. Dimensional lumber was delivered there from Detroit in May. In June the ship collected strips from White Lake, Michigan. July through November the schooner brought multiple loads each month to market, ranging from 85,000-90,000 board feet of lumber to railroad ties, all from Saugatuck, Michigan (*Chicago Evening Post* 1868a, 1868b; *Chicago Republican* 1868a, 1868b, 1868c, 1868e,

1868f). A lawsuit was filed in U.S. District Court in Chicago by Charles Werner for damages caused by the tug *Monitor* and the schooner *Sassacus*. The details of the incident are not known, and the case was dismissed on 25 August 1868 (*Chicago Republican* 1868d). The ship spent the 1868-69 winter at Chicago (*Buffalo Commercial Advertiser* 1868).

Sassacus came out of winter quarters the first week in April and cleared light for Saugatuck. The ship brought lumber and lumber products to Chicago from Saugatuck, White Lake and Montague, Michigan during the season. It remained active, making multiple trips each month across Lake Michigan through November (*Chicago Evening Post* 1869a, 1869b, 1869c*; Chicago Republican* 1869a, 1869b, 1869c, 1869d, 1869e, 1869f, 1869g, 1869h, 1869i). In October while *Sassacus* was returning to Chicago from White Lake, when it lost its deck load of lumber during a gale. On 19 November the ship lost its foresail during a stormy crossing from White Lake. The vessel immediately went into winter quarters upon arriving at Chicago (*Chicago Evening Post* 1869c; *Chicago Republican* 1869i; Hall 1869; *Milwaukee Daily Sentinel* 1869).

Opening its season at the onset of May, the ship called at the ports of White Lake, Montague, Manistee, and Muskegon, Michigan to collect lumber cargoes for Chicago during the 1870-season (*Chicago Tribune* 1870a, 1870b, 1870c, 1870d, 1870e; *Daily Milwaukee News* 1870). On 14 October *Sassacus* was involved in a collision with an unnamed vessel off Chicago. Its bowsprit and jibboom were carried away. Once the spars were replaced, the ship sailed for Grand Haven. During the trip, the ship was dismasted in a storm off that port. The tug *Laketon* came to the schooner's assistance and saved the lives of the captain and crew by towing them inside the protection of the harbor. Once the storm abated, *Sassacus* was towed across the lake to Chicago on 28 October 1870 and taken to the shipyard. Repairs were carried out over the winter months (*Chicago Republican* 1870; *Daily Press* 1870; *Milwaukee Daily Sentinel* 1870).

The ship was fitted out during the middle of April 1871. On 27 April *Sassacus* was chartered to bring joists and scantling from White Lake to Chicago. The vessel called at White Lake and Whitehall for various lumber cargoes during the shipping season (*Daily Milwaukee News* 1871; *Milwaukee Daily Sentinel* 1871a, 1871b, 1871c). On the afternoon of 20 July Captain Ryan was somehow injured while the Lake Street bridge in Chicago was turning. The extent of his injuries is unknown, and the ship's documents do not indicate that he was replaced (*Chicago Republican* 1871). On 8 August 1871 during a particularly severe storm on Lake Michigan, *Sassacus* sprung a leak. The pumps couldn't keep up with the rising water and the crew abandoned the vessel, taking to the yawl. The next day, the tug *Campbell* was sent out in search of the ship. It located the schooner and brought it into Grand Haven where it was presumably repaired. No other information for the season was located (Hall 1871; *Milwaukee Daily Sentinel* 1871d, 1871e).

Over the winter months, *Sassacus* was sold. The ship's 1872 enrollment document, however, has been lost to history. It is known that the new owners registered the ship in the Oswego District on 26 April 1872, but information about them, the Master and homeport is not known (Bureau of Navigation 1872). In May and June, *Sassacus* was used to move cargoes of pig iron from Bear Creek and Ontario, New York on Lake Ontario to Cleveland, Ohio on Lake Erie. In July the ship carried a load of lumber from Toledo to Oshawa, Ontario (*Daily News* 1872a, 1872b, 1872c). No other information about the vessel's routes or cargos was located for 1872 or 1873.

The 1874 Board of Lake Underwriters list of vessel classifications provided a $2,500 valuation on *Sassacus*' hull and a B2 insurance rating. The register indicated that Captain Ryan remained owner and Master of the ship (BLU 1874). An incident involving *Sassacus* occurred in Oswego harbor in early November 1874. The captain of the schooner *Ben Franklin* discharged a gang of men that was hired to load his ship. When he refused to pay them $20 that they were due, they called the police and chased him into the cross trees of his ship. The police boarded a tug and attempted to tow the schooner out into the lake. The police officer ordered the helm of the tug over one direction, the crew of the *Ben Franklin* put its helm over in the other direction causing the *Ben Franklin* to ram the *Sassacus* which had been tied up at the dock. *Sassacus*' injuries were said to be serious, however the exact of damage is unknown. The Master of the *Ben Franklin* was hauled off to jail but discharged on a $500 bail bond (*Detroit Post* 1874).

In the spring of 1875, *Sassacus* was tied up at Charlotte, New York on the night of 1 April when it was damaged by an ice floe leaving the harbor. The schooner had a portion of its bow broken off. In the fall the ship rode out a gale at anchor off Pultneyville, New York (*Daily Inter Ocean* 1875, 1876).

On 23 August 1876, *Sassacus* was anchored along the lee shore near Sheldon's Point in Oswego when the wind unexpectedly picked up from the north. The vessel could not be worked out in the heavy seas and came to ride about 50 feet off the pier with waves running over its deck. At 4AM on 24 August the tug *Steve H. Lyon* was able to make its way out to the ship and took it in tow inside the protection of the harbor. The *Sassacus* had timber onboard for D.L. Couch, but lost 500 feet from its deck, and lumber and shingles for E. R. Weed from Toronto (*Daily Inter Ocean* 1876; *Oswego Palladium* 1876a, 1876b).

Sassacus spent the 1877-78 winter at Oswego, and the ship was put up for sale. Advertisements ran in the Oswego papers in January, February, and March 1878, embellishing the vessel's description with "Lately Rebuilt". In December 1878 the ship sank to its deck at the dock just below the lower bridge in Oswego *(Daily Inter Ocean* 1878; *Milwaukee Daily Sentinel* 1877; *Oswego Palladium* 1878a, 1878b, 1878c). Remaining in this sunken condition through the 1879-season, the Board of Lake Underwriters refused to give the ship a valuation or insurance rating and declared the vessel "uninsurable" (BLU 1879). Rumors began circulating around

town that the ship was haunted by ghosts. Mariners and towns people claimed to hear handspikes being driven in and death-like moaning coming from inside the ship's hull at night. On 29 July 1879 a fire was started on the stern of the vessel by an arsonist. Soon afterwards, a call was made to clean up the harbor of derelict vessels, and Oswego's Harbor Master gave orders to have the *Sassacus* removed. Captain Ryan, however, was in hard times financially and could not afford the expense of raising the ship (*Oswego Morning Herald* 1879a, 1879b; *Oswego Palladium* 1879).

In late April 1880, the schooner was to be turned over to the city and sold at public auction in its sunken condition. Unexpectedly on 15 May 1880 the auction was called off. The Sherriff's auction was rescheduled for 2 June and the ship was purchased on speculation by James McCarty of Oswego for $152, plus a dockage fee of $50, that was also assumed by the purchaser. *Sassacus* was then pumped out and put into the Mitchell & Gallagher floating drydock. After the boat's condition was assessed, the ship was sold by McCarty & Marsh on 17 August 1880 to E.M. Becker and William J. Donaldson of Cleveland, Ohio for $400. The ship received $1,500 in repairs at Oswego or what was described as "sufficient enough repairs to keep it afloat" and was taken to Detroit on 2 September 1880 in ballast (Bureau of Navigation 1880a; *Cleveland Daily Herald* 1880; *Daily Inter Ocean* 1880; *Daily Times* 1880a, 1880b; *Milwaukee Daily Sentinel* 1880a, 1880b; *Plain Dealer* 1880a, 1880b).

Twenty-two-year-old William J. Donaldson sailed since boyhood alongside his father, Captain David D. Donaldson. At 16-years-old William was placed in command of the scow *E. Bailey* replacing his father upon his death (Marine Record 1883a).

Sassacus received additional repairs at Detroit and made a trip to Erie before arriving at its new homeport of Cleveland on 17 September 1880. At Cleveland it was registered and received a new permanent document where Captain William J. Donaldson was listed as sole owner and Master. The ship's measurements remained the same as the previous enrollment, however the vessel was described as a scow with a plain head and square stern (Bureau of Navigation 1880b; *Plain Dealer* 1880c). In September and October *Sassacus* collected several stone cargoes from the Lake Erie Islands for Cleveland. The ship wintered over at Detroit (*Plain Dealer* 1880d, 1880e, 1880f, 1880g).

On 22 April 1881 Captain Donaldson sold ½ share in the *Sassacus* to J. Murphy of Cleveland. A temporary document for the change in owners was taken out at Detroit while the vessel was out of its home port and district. On 6 June 1881 the vessel was chartered to carry coal from Cleveland to Detroit. Having arrived at its home port of Cleveland to collect the load, a permanent enrollment was entered at the port. Both 1881 enrollments describe the vessel as a schooner and not a scow or scow schooner. At Detroit the ship was chartered to bring lumber from Au Sable, Michigan to New Baltimore, Michigan and deliveries were made on 14 June and 20 July. Cargoes of lumber were delivered to Erie from Tawas and Alpena, Michigan in late

July and August. Coal was taken from Cleveland to Detroit in late August. In October the ship carried several loads of stone from the Lake Erie Islands to Oscoda, Michigan for a harbor project, and in November the ship brought lath from Au Sable to Toledo and coal from Sandusky to Sarnia. *Sassacus* put up for the winter at Cleveland (Bureau of Navigation 1881a, 1881b; *Buffalo Commercial Advertiser* 1881; *Chicago Daily Tribune* 1881; *Cleveland Daily Herald* 1881a, 1881b, 1881c, 1881d, 1881e, 1881f, 1881g, 1881h, 1881i, 1881j, 1881k; *Daily Inter Ocean* 1881a, 1881b; *Milwaukee Daily Sentinel* 1881).

The ship was fitted out at the end of April 1882 and began its season by carrying coal from Toledo to Port Huron. On 1 May *Sassacus* entered the shipyard at Detroit to have its mast replaced. In July and August, it called at Bay City, Michigan and Leamington, Ontario for lumber cargos for Cleveland. The ship brought a cargo of stone from the Lake Erie Islands to Cleveland in early September, and brought in other shipments from Lorain, Ohio and Rondeau, Ontario during the month. In October and November, the vessel returned to the lumber trade calling at the ports of Detroit and Grindstone City, Michigan before returning to Cleveland for the winter (*Buffalo Courier* 1882; *Buffalo Courier Express* 1882; *Chicago Daily Tribune* 1882; *Cleveland Daily Herald* 1882a, 1882b, 1882c; *Milwaukee Daily Sentinel* 1882; *Oswego Palladium* 1882).

On 3 April 1883 a new enrollment was entered at the port of Cleveland for the ship. Kate Donaldson (it is not known if she was wife or mother of Captain William J. Donaldson) replaced J. Murphy as ½ owner of the vessel. With this registration, the ship was given deductions in tonnage of 5.45 tons as made under the Act of Congress of 5 August 1882 for a new tonnage of 103.57 tons (Bureau of Navigation 1882a). The ship carried cargoes of coal and limestone from Cleveland to Toronto, and coal from Cleveland to Lorain in May. In June the ship hauled stone and lumber. On 28 July 1883 Captain Donaldson became ill and was replaced by Captain H. Hinton at Cleveland. Captain Donaldson suffered only a few more days before he succumbed to cholera on 5 August 1883 (*Cleveland Daily Herald* 1883a, 1883b, 1883c; Hall 1883; *Marine Record* 1883a; *Plain Dealer* 1883a, 1883b, 1883c).

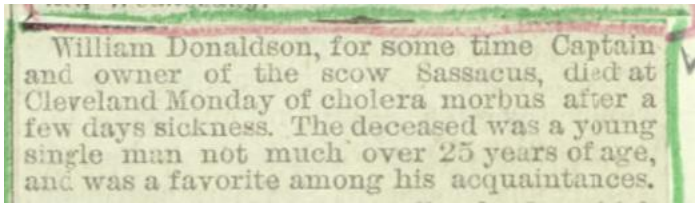
William Donaldson, for some time Captain and owner of the scow Sassacus, died at Cleveland Monday of cholera morbus after a few days sickness. The deceased was a young single man not much over 25 years of age, and was a favorite among his acquaintances.

Figure 60. Clipping of Death Notice for Captain William Donaldson (J.W. Hall Scrapbook)

On 23 August 1883 the *Sassacus* ground on the reef off Middle Bass Island. It required the services of the tug *Calvin Davis* to pull it free (*Marine Record* 1883b). The ship called at Kelly Island, Ohio for lumber in mid-September, and at Lorain, Ohio in October, and November (*Cleveland Daily Herald* 1883d, 1883e). On the night for 12 November 1883, at Lorain, Ohio,

Sassacus was moored at the mouth of the harbor. As the wind picked up to a gale, the tug *Hawley* attempted to reposition the schooner, but the schooner broke loose. It ran into the barge *Victor* carrying away *Victor*'s foremast head. The *Victor* then struck a river tug and the schooner *Southwest* carrying away the cathead railing and its anchor stock. *Victor* also struck the scow *Pearl* which capsized and sank it. During this time *Sassacus* ran into the Main Street bridge and broke off all its forward rigging as well as caused damage to the bridge (*Buffalo Commercial Advertiser* 1883; *Cleveland Daily Herald* 1883f; Hall 1883; *Milwaukee Daily Sentinel* 1883). Major repairs to the vessel ensued (Polk 1884).

On 19 November a new enrollment for *Sassacus* was issued at the port of Cleveland for change in owners. Thomas Faragher of Lorain, Ohio became the new owner. Cleveland remained its homeport and Captain William Faragher became *Sassacus'* new Master. The ship was classified as a scow with a B2 insurance rating. It's not known if the schooner sailed later in the season. It was laid up at Cleveland for the winter (Bureau of Navigation 1883b; *Plain Dealer* 1883d; Polk 1884).

In early May 1884, the ship collected a load of lumber for Cleveland from Port Stanley, Ontario (*Cleveland Daily Herald* 1884a; *Plain Dealer* 1884a). From mid-May through the end of October the ship engaged primarily in the stone trade between the Lake Erie Islands and Cleveland and brought more than twelve loads to the city (*Cleveland Daily Herald* 1884b, 1884c. 1884d, 1884g, 1884h, 1884j; *Plain Dealer* 1884b, 1884c. 1884d, 1884e, 1884f, 1884g, 1884h 1884i). On May 30 and June 3, the ship cleared Cleveland with cargoes of blasting powder from the Austin Powder Company for quarrying operations at Marblehead, Ohio, and the Lake Erie Islands, respectively (*Cleveland Daily Herald* 1884e, 1884f). On June 21, the ship called at Lorain, Ohio (*Cleveland Daily Herald 1884i)*. One incident occurred during the season. On the night of 18 May 1884, *Sassacus* stranded on Fighting Island. The tug *Oneida* was called in to pull the ship free (*Marine Record* 1884).

Little is known about *Sassacus*' 1885 shipping season. The ship collected 5,000 cedar posts from Alpena, Michigan on 8 July and delivered them to Cleveland on 14 July. On 8 September, it sailed a load of block stone from Cleveland to Toronto. The ship's transit through the Welland Canal was recorded on 12 September (*Alpena Weekly Argus* 1885; *Plain Dealer* 1885; *Milwaukee Daily Sentinel* 1885a,1885b). No other information about the ship's routes or cargos was located.

The ship was back in service for the season by the middle of April 1886. *Sassacus* based its operation out of Cleveland and delivered wood there from Lorain in April, took coal to Detroit in May, brought stone from the Lake Erie Islands in July and coal to Amherstburg, Ontario in August. In mid-July the ship was chartered to carry bolts from Leamington to Buffalo. With a lull in work during the first week of August, the ship put into the Globe Drydock at Cleveland

for a thorough recaulking (*Daily Inter Ocean* 1886a, 1886b, 1886c, 1886d; *Marine Record* 1886; *Milwaukee Daily Sentinel* 1886; *Plain Dealer* 1886).

Sassacus traded between Cleveland and Marblehead, Ohio, in May 1887 making several trips between the ports. In late July the schooner delivered stone to Fairport, Ohio from the Lake Erie Islands. On 9 September the vessel was reported down bound through the Welland Canal enroute from Cleveland to St. Catharines, Ontario. On its upbound trip to Detroit, *Sassacus* narrowly escaped sinking off Kingville, Ontario when it started leaking so badly that the crew were kept on the pumps for two days of the journey. At Detroit it went into drydock for extensive repairs. *Sassacus* collided with a barge towed by the tug *Champion* outside of Detroit on 25 October. *Sassacus* lost its jibboom, bowsprit, and rigging. In November the ship called at Amherstberg, Ontario. Winter set in early and the ship wintered over at Mt. Clemens (*Daily Inter Ocean* 1887a, 1887b, 1887c; *Marine Record* 1887a, 1887b, 1887c, 1887d; *Plain Dealer* 1887a, 1887b; Polk 1888).

Over the winter Captain Faragher hired the Cleveland brokerage, Palmer & Benham to help sell the schooner and it was sold by mid-February to Charles H. Ellis of Milwaukee for $16,000. An enrollment was entered for the ship at the port of Milwaukee on 20 March 1888 listing Captain Ellis as sole owner and Master. *Sassacus'* homeport was changed to Milwaukee. Then, on 21 March a new enrollment was entered at the port when Captain Ellis sold 1/3 interest to Jennie Brotch of Milwaukee (Bureau of Navigation 1888a, 1888b; *Marine Record* 1888; *Plain Dealer* 1888a*)*. Following the previous season's work on the ship, the vessel received a B1½ insurance rating for the season (Polk 1888). On 8 November, *Sassacus* was loaded with lumber but forced to run back into the harbor at Milwaukee to seek shelter from a heavy storm (*Daily Inter Ocean* 1888; *Plain Dealer* 1888b). The ship wintered over at Milwaukee (*Marine Record* 1889).

On 29 January 1889, Jennie Brotch sold her 1/3 share in the vessel back to Captain Ellis for $500. A new enrollment was entered at the port of Milwaukee for the change in ownership. Only one port entry was found for the vessel for the 1889-season. The schooner arrived at Milwaukee on 29 July 1889 with a cargo of lumber (Bureau of Navigation 1889; *Milwaukee Journal* 1899; *Journal Times* 1889).

Spring 1890 passages for the vessel are not known. On 5 June 1890 *Sassacus* was carrying bark back to Milwaukee when it was forced into Two Rivers after a significant leak was discovered. On 22 August the ship was loaded with hardwood when, during the night, it was driven ashore. The vessel stranded high up on the beach at Burnham's Pier, twenty miles north of Manistee and pounded until its rudder was carried away and its seams opened. *Sassacus* then filled with water. Newspaper reports of the incident state that the owner and Master was W.S. Johnson of Milwaukee, but the ship's paperwork was not updated with this information. The ship was pulled from the beach on 25 August and taken to Thorsen's shipyard in Manistee where the ship was repaired, recalked and received a new rudder and centerboard for an expense of $800. The

hardwood lumber cargo was saved and reloaded after the repairs were completed, and ship carried on to Milwaukee. On 6 November Walter S. Johnson registered the ship at the port of Milwaukee before laying up for the winter (*British Whig* 1890*;* Bureau of Navigation 1890; *Chronicle* 1890; *Daily Inter Ocean* 1890a, 1890b, 1890c; *Milwaukee Daily Sentinel* 1890a, 1890b, 1890c; *Oswego Daily Times* 1890; *Racine Daily Times* 1890).

In February 1891, Walter Johnson sold the vessel to John B. Warren for $2,200 (*Marine Review* 1891; *Milwaukee Journal* 1891a). The ship was never registered under this owner, however on 22 June a new enrollment was entered for *Sassacus* at the port of Chicago. Frank A. Morgan of Chicago became the new owner and Captain A.J. Rice took over as Master. Chicago became the vessel's new homeport (Bureau of Navigation 1891). On 4 August the ship sprung a leak while bound for South Chicago with a cargo of lumber. The crew worked the pump until the ship was towed into Milwaukee and repaired at the Joys shipyard at a cost of $150. On 27 August *Sassacus* was stripped and laid up for lack of available cargoes. On the same day, *Sassacus* was libeled for the bill from the Joys shipyard (*Buffalo Commercial Advertiser* 1891; *Buffalo Courier Express* 1891; *Daily Inter Ocean* 1891; *Milwaukee Journal* 1891b, 1891c).

In spring 1892, the ship was sold to Captain W.H. MacDonald of Chicago, and a new enrollment was entered at the port of Chicago on 12 May 1892 for the change in owners. Chicago remained its homeport and Captain MacDonald became *Sassacus*' new Master. No information was found about the ship's routes or cargoes for the season. During the summer of 1892, Captain MacDonald relocated to Sheboygan and on 30 September, *Sassacus* was registered at the port of Milwaukee for a change in district. Sheboygan became its new homeport (Bureau of Navigation 1892a, 1892b).

No information about spring 1893 shipments was located. On 8 June 1893 *Sassacus* was windbound at Sturgeon Bay and on 13 June, the ship arrived at Milwaukee with its cargo of cordwood. A new enrollment was entered at the port of Milwaukee on 5 July, for a change in owners. George W. Wing of Kewaunee, Wisconsin purchased the ship, and Kewaunee became its new homeport. Although Captain Wing was listed as the ship's Master on the form, Captain MacDonald retained command for a charter to remove coal from the stranded barge *Annie Voight* that went ashore on South Manitou Island (*Bureau* of Navigation 1893; *Democrat* 1893a; *Door County Advocate* 1893a, 1893b; *Milwaukee Daily Sentinel* 1893).

On the night of September 29 and into the morning hours of 30 September 1893, an intense southeast gale swept over Lake Michigan. *Sassacus* loaded cordwood on September 29 and was lying at anchor in Jacksonport, Wisconsin waiting out the storm when its anchor chains parted, and it was driven ashore south of LeMere's pier. The captain opened the forward scuttle to fill the vessel with water and prevent it from pounding. The crew of four men were taken off by a local fishing boat. After the storm passed, it was decided that the ship could be saved if the deck load was removed, and the ship pumped out. The tug *Leathem D. Smith* was brought in from

Sturgeon Bay to remove the ship from the beach (*Buffalo Courier Express* 1893; *Daily Inter Ocean* 1893; *Democrat* 1893)

As the schooner sunk in seven feet of water, the tug dug a channel to the stranded ship usings its propeller and placed a steam pump onboard. It was discovered, however that the ship was leaking badly, and pump had difficulty keeping the water down. After much of *Sassacus*' cargo was removed, the salvage crew was able to refloat the ship and pull it into deeper water. As the tug was towing *Sassacus* south the pump's suction pipe became clogged. *Sassacus* settled deep in the water as the men tried to clear the debris. Just as the last man left the ship, the schooner sank, capsizing as it went down. The tug's crew decided to tow the ship in this capsized condition to the canal piers where it could be righted. This was a difficult task as the ship was already waterlogged. As night approached, the wind and seas picked up. The line to the tug parted on three occasions so it was decided to wait until daylight to commence the operation. At daybreak another attempt was made to tow the *Sassacus*, but the line parted again. The schooner was left to drift ashore south of Whitefish Bay, two miles from the canal entrance, and the tug returned to Sturgeon Bay. During a big blow on the night of 3 October, the ship righted itself and the crew of the *Leathem D. Smith* returned to recover the steam pump, but the ship was too battered by this point. *Sassacus*' enrollment was surrendered at the port of Milwaukee on 25 October 1893 stating the vessel as a total loss. The ship was valued at $1,000 but carried no insurance (*Door County Advocate* 1893a, 1893b, 1893c; 1923; 1964).

A lawsuit was filed in Circuit Court against the *Leathem D. Smith* for the loss of the *Sassacus*. After a long deliberation, the judgement was in favor of the defendant as the line used for towing belonged to the *Sassacus* and not the towing company (*Democrat* 1897; *Door County Advocate* 1896).

Site Description

The remains of the schooner *Sassacus* lie in the littoral zone, in the waters of Lake Michigan 0.95 miles southwest of the Lily Bay Boat Ramp (44° 50.217’ N, 087° 16.392’ W). The vessel points bow toward the lake and sits on a heading of 114 degrees, in 4 feet of water. The wreckage rises 3.5 feet off the sandy lake bottom. From the turn of the bilge down, 49.5 feet of floors and frames of its lower hull, and the centerboard trunk remain relatively intact on an even keel. The wreckage has been known to local cottage owners and was brought to the attention of Wisconsin Historical Society maritime archaeologists by kayakers in September 2023. It should be noted that the wreck had only been recently exposed from the bottom after for more than 20 years entirely buried. Its recent uncovering and shallow location just outside the surf zone has contributed to the lack of quagga mussel colonization on the timbers. Though all its upper deck works, rigging, and machinery were lost in the sinking or were broken by years of wave and ice action along the shore, major structural components of the vessel remain extant, including its keel, keelson, and centerboard trunk.

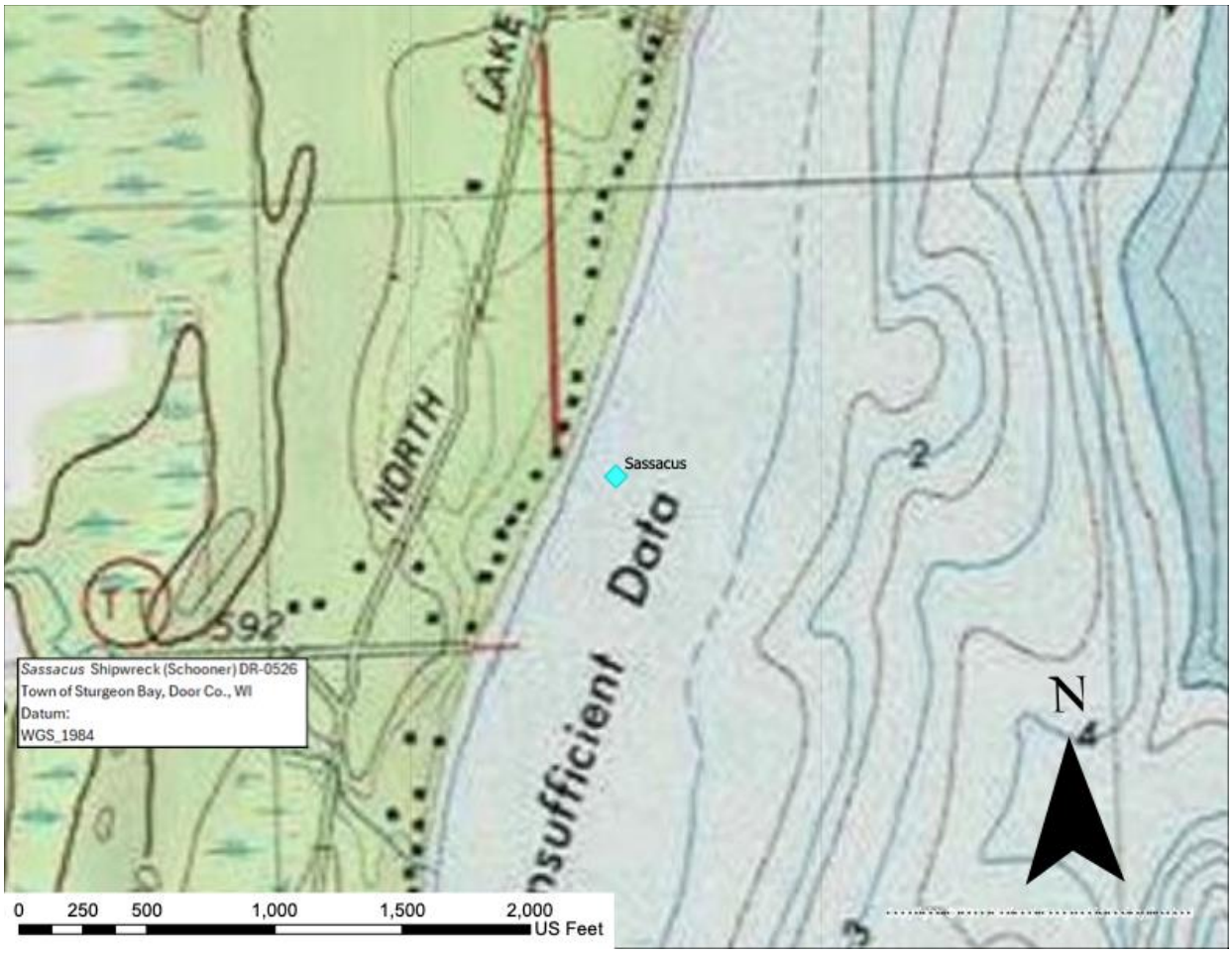

Figure 61. Location of *Sassacus*

A survey of the *Sassacus* was conducted in September 2023 by maritime archaeologists from Wisconsin Historical Society. The vessel went ashore stern first. A baseline was attached at the stern edge of the broken keelson and stretched 49.5 feet along the centerline of the vessel to the furthest extent of the stern section. All measurements for the survey were taken from this baseline. The overall length of the remains of are 45 feet short of the *Sassacus*' 94.5 feet total length. The beam of the exposed hull is only present up to the first futtock and is not representative of the full breadth of the ship. Measured at its widest point, the wreckage is 21.5 feet wide. Given the wreck dimensions, location, and a comparison of vessel losses in the vicinity based on historic newspaper accounts, the vessel remains were determined to likely belong to the schooner *Sassacus*.

As the site was only recently exposed and lies in a dynamic area, no invasive quagga mussels have colonized the interior of the bilge allowing for detailed observations. The *Sassacus*' stempost and sternpost are no longer extant. Although much of its upper hull is no longer present on the site, remnants of *Sassacus*' floors remain up to the first futtocks. The vessel is double framed, with each futtock measuring 0.4 foot sided and 0.5 feet moulded, for an overall

sided dimension of the frames of 0.8 feet with 0.9 feet between frames, or 1.7 feet spaced. Twenty-five frames were exposed on the starboard side of the ship, and nine frames on the port side. Five of the port side frames are tripled which may be evidence of repair. Several sections of outer hull planking remain attached to the frames. These planks measure 1.0 feet wide and 0.15 feet thick. The vessel's ceiling planks also remain extant in the bilge and vary between 0.7 feet and 0.9 feet wide and are 0.2 feet thick.

Figure 62. *Sassacus*' bilge with exposed floors to first futtock

Sassacus' keelson is extant down the centerline of the shipwreck, and measures 0.8 feet sided, and 0.8 feet moulded. The keelson is broken at the inshore end but is buried beneath sand aft of the centerboard trunk. Because the lake bottom is packed hard in the vicinity of the wreck, the vessel's keel could not be observed beneath the keelson.

The vessel’s deck, machinery, masts, and rigging no longer remain on site. *Sassacus'* extant centerboard trunk is represented by the bottom-most planks of the centerboard trunk is located between 21.2 feet and 42.2 feet on the baseline. This opening is consistent with the measurements of a centerboard for a vessel of this size. The upright timbers that made up the end structures of the inside of the centerboard trunk measures 0.7 feet long by 0.5 feet wide. Only the bottom planks on of the centerboard trunk remain. These measure 0.4 feet wide and are faintly exposed above the sand. The centerboard trunk's covering board is no longer present. The centerboard is extant within the trunk and was retracted at the time of sinking. The centerboard measures 18.2 feet long and 0.4 feet in width. The centerboard's pivot pin remains 4.5 feet aft of the forward edge of the centerboard trunk.

Figure 63. *Sassacus*' centerboard trunk

Additionally, there remain a few unidentified components on the *Sassacus* site. A notch is cut into the starboard side of the keelson 10.5 feet forward of the stern end of the keelson. The

notch is 0.6 feet long and 0.3 in from the port side. A square hole is located in the vessel's bilge, 17.5 feet on the baseline, 1.5 feet to the port side of the centerline of the ship. The hole which extends through the floors. The hole measures 0.4 feet square. A 2.0 feet long section of the keelson is missing forward of the centerboard trunk. This may be the mainmast step.

It is likely many other components of the *Sassacus*' hull structure remain on the site buried in the sand nearby. Most of the remains were likely broken up and swept ashore by wave and ice action over the 130 years since its sinking. The 2023 investigation did preliminarily indicate that no other significant portions of the hull remain, and additional investigations will likely not provide additional data about the construction of early Great Lakes schooners. The site has been visited by kayakers and is known to legacy cottage owners. As it is located 0.10 miles inshore from the *City of Glasgow* shipwreck, it makes a nice combination visit for kayakers and will become a popular spot in years to come at the times when the wreck is exposed from the sand and conditions are favorable.

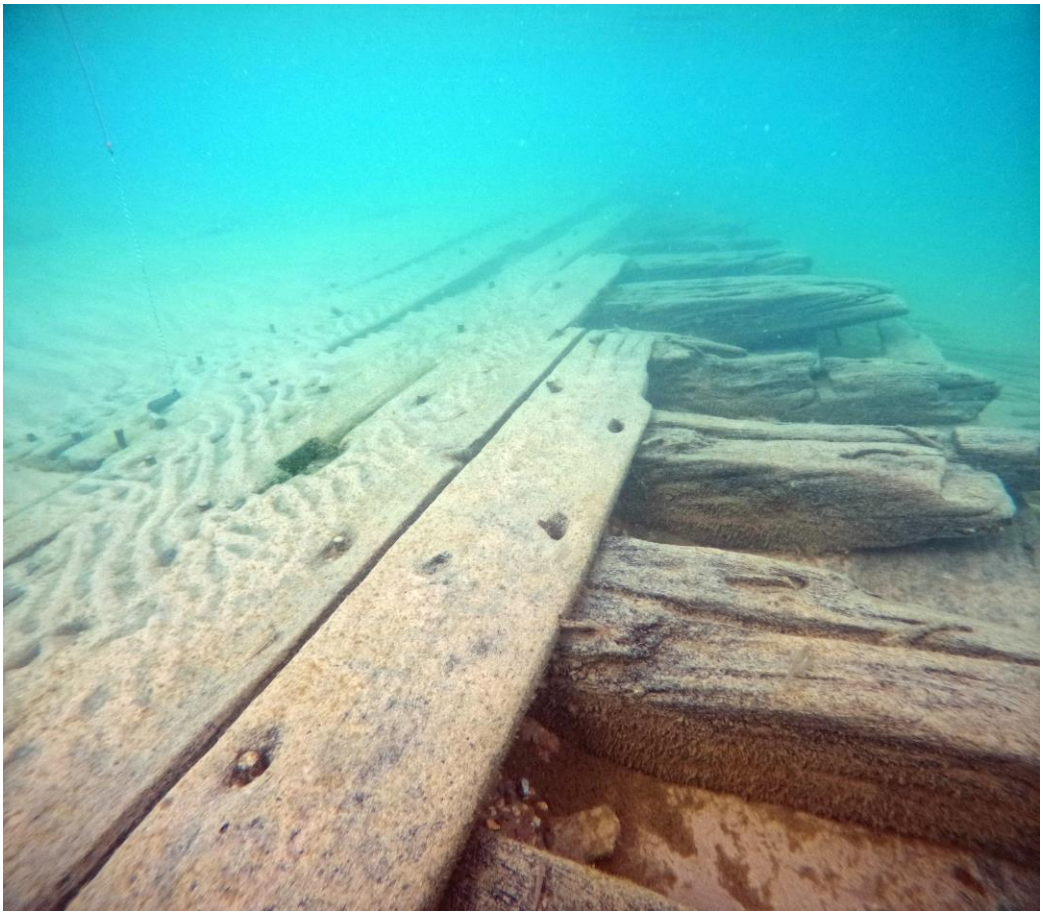

Figure 64. Square hole in ceiling planking

Historical documentation is confused to *Sassacus*' typology. *Sassacus* is listed as schooner in 1867 (Bureau of Navigation 1867), but in 1880 the ship first appears labeled as a scow on her

enrollments, with no explanation to the change in classification. The scow classification continued on all further enrollments. Archaeological evidence indicates the Sassacus was not a scow but a conventional schooner. The Sassacus was constructed of single, athwartships frames with longitudinal hull planking. She has a soft chine at the turn of the bilge, and no evidence of a chine log. It has been suggested that some scows carried a bow and stern similar to that of conventional vessels (Martin 1991). In the case of the flat-iron bow, however, despite 29 a fine entry much like conventional vessels, there remained an obvious angular joint where the bow met the hull side, a joint not apparent in the *Sassacus*' remains. Flat floors with a tight bilge radius were sometimes used historically to classify scows (Merchant Vessels of the United States 1885), but even with this looser definition the *Sassacus* would not meet the scow criterion. Sassacus possessed a very gradual turn of the bilge with a wide, rather than tight, radius. There remain two possibilities to explain this misnomer. First, it is possible, though unlikely, that the term "scow" possessed a vernacular meaning since lost. This could mean the *Sassacus* was indeed a scow, just not by today's understanding. A second possibility is that classifying a vessel as a scow somehow gave it an advantage, perhaps in cheaper documentation fees or taxes, as compared to conventional schooners. An account similar in this nature was found in the survey of the schooner *Iris* (Meverden and Thomsen 2006) where also in 1880 it was suddenly classified as a scow. These questions will only be answered through further archival research to shed more light on historic scow classification, combined with archaeological documentation of additional scows to better understand the variety and nuances of scow construction methods and classification.

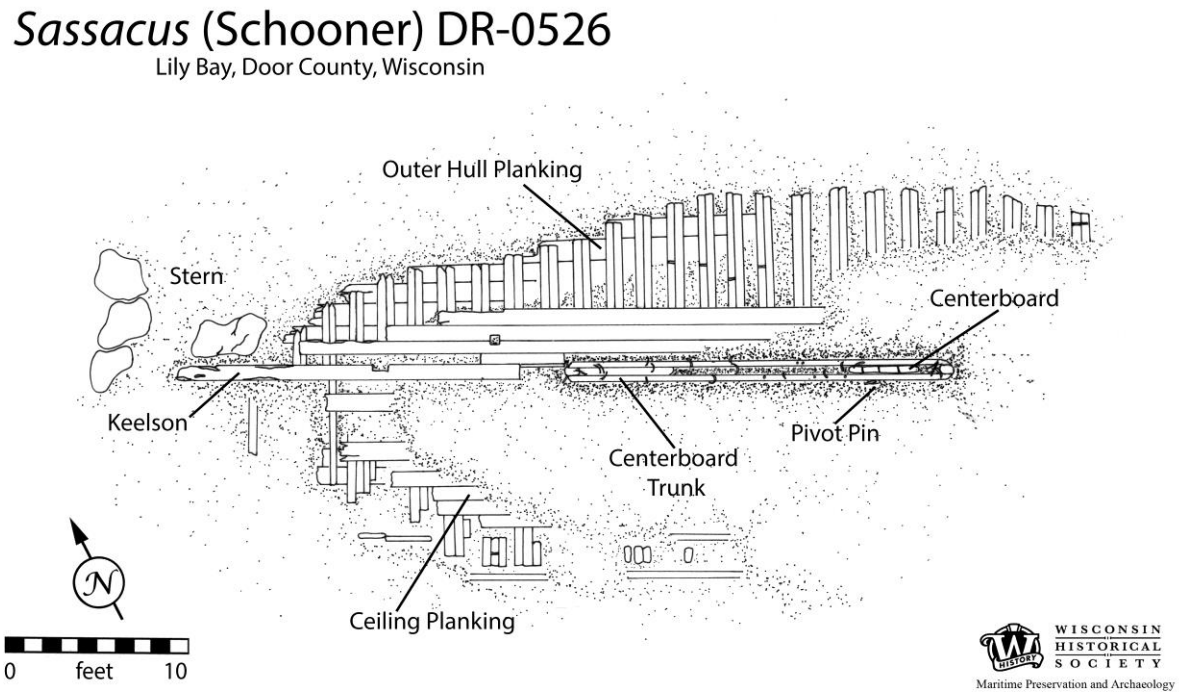

Figure 65. Site plan for *Sassacus*

CHAPTER EIGHT
CONCLUSIONS AND RECOMMENDATIONS

This field report is a component of the ongoing research conducted by Wisconsin Historical Society's maritime archaeologists and contributes to the ever-increasing body of knowledge collected about historic shipwrecks and submerged cultural sites. Archaeological surveys conducted by the program are also designed to follow the standards and guidelines established by the National Park Service for submerged cultural resources. As such, the goals of the surveys are to positively identify the site through unique marks or artifacts, to analyze the site for its significance in Wisconsin's history as well as a more overarching view of its regional and national importance, to determine its eligibility for listing to the National Register of Historic Places, and to recommend best management and visitation through buoys, signage, interpretation, and outreach.

G.L. NEWMAN

As an early wooden schooner the *G.L. Newman* survey was designed to provide positive vessel identification through identifying marks or artifacts and to document features of early sailing vessels of the Great Lakes bulk cargo trades.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. The ship's nameboards were not present, and painted areas and identifying marks were covered with quagga mussels. Although the location and evidence of the wrecking event match, a complete archaeological documentation of *G.L. Newman* site will be a continuing process for years to come. The information gathered during the 2024 survey should serve as a baseline for monitoring the *G.L. Newman* site for changes caused by environmental affects as well as increased visitation by divers.

Due to the remote location and broken nature of its hull, the *G.L. Newman* is infrequently visited by divers. This is unfortunate, as the *G.L. Newman* is an excellent location to study and observe the construction techniques used to build nineteenth-century Great Lakes schooners. Although the hull is broken up, a considerable amount of the *G.L. Newman*'s hull components is extant. To many divers, a broken hull such as the *G.L. Newman* holds less appeal compared to more intact vessels - even vessels that are entirely stripped of rigging, gear, and artifacts. To an analytical eye, however, the *G.L. Newman* site presents a prime opportunity to study and learn about wooden vessel construction. The advantage of broken hulls like the *G.L. Newman* is that they offer a of view many construction details that are hidden in more intact vessels. The stem construction, inner framing techniques, and more hidden workings such as the wooden hogging arch can be examined. It is easier to document the structural components integral to vessel construction when a shipwreck is broken in pieces. Additionally, as more of these early schooners are documented by the Society, a greater understanding of the features and nuances

of this vessel type can be achieved and the greater the necessity to return to sites for comparative analysis.

The second objective was also not achieved. *G.L. Newman*'s hull is broken with at best less than 50% located during the survey and as such this lack of archaeological integrity has excluded it from listing on the State or National Registers of Historic Places.

As the *G.L. Newman* site is somewhat remote and lightly visited by divers, a state-sponsored mooring buoy is not planned for the site. The site lies more than 5 miles offshore, although easily reached by boat, diving the wreck should only be attempted in the best of conditions without risk of being caught out in weather that can blow up on Green Bay during the summer months. Wisconsin DNR has added coordinates to the Wisconsin's Lake Michigan State Water Trail and the Wisconsin Public Access Lands interactive maps. Information gathered during the survey will be used for website updates, public outreach, and educational materials for the surrounding community.

GREY EAGLE

The *Grey Eagle* survey was designed to provide positive vessel identification through identifying marks or artifacts, and to document Great Lakes schooner construction and use in the bulk cargo trades.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. The vessel's size and location, construction details, and details of its loss all support the identification as *Grey Eagle*. However, from the current breadth of archaeological material on the site, precise positive identification of the wreck was not possible. A complete archaeological documentation of the *Grey Eagle* site will also be a continuing process. Only a portion of the ship's bilge was located. Much of *Grey Eagle*'s remaining hull structure is buried or was washed away or up onto the shore after the vessel broke up. As the sediment continues to move, there is potential for previously undocumented hull structure and artifacts to be uncovered and exposed. For this reason, the site should be monitored, and any newly exposed structure or artifacts should be documented and added to the site plan.

The second objective was also not achieved. The *Grey Eagle* site was evaluated under the standards of the National Park Service for listing on the National Register of Historic Places. As only 25% of the ship is represented on the site, it lacks archaeological integrity needed for inclusion on the State or National Registers of Historic Places. Although the *Grey Eagle* site is not heavily visited, cultural artifacts from the site are now hidden by invasive mussel colonization. The vessel's size, location, and construction support the identification as the *Grey Eagle*.

A state-sponsored mooring buoy is not planned for the site. As visitation by kayakers, snorkelers and divers increases in future years, the need for a mooring buoy should be revisited. If a mooring buoy is installed at the site, the anchor should be an offsite deadweight or helix-type screw anchor, as any mooring anchored to the wreck itself could cause significant damage to the site. Wisconsin DNR has added coordinates to the Wisconsin's Lake Michigan State Water Trail and the Wisconsin Public Access Lands interactive maps. Information gathered during the survey will be used for website updates, public outreach, and educational materials for Door County, and the surrounding community.

LITTLE HARBOR LAUNCH

The Little Harbor Launch survey was designed to document small Great Lakes vernacular crage and use in industry, tourism and recreation, and to provide positive vessel identification through identifying marks or artifacts.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. A thorough archival search of newspapers and reports of the late 19th and early 20th century did not turn up an account of a loss of a vessel of this type in at this location.

The second objective was achieved, and Little Harbor Launch was listed on the State and National Register of Historic Places. The soft, gelatinous substrate in the area allows tools and hull sections to disappear beneath its surface. As the sediment continues to move, there is potential for previously undocumented hull structure and artifacts to be uncovered and exposed. For this reason, the site should be monitored, and any newly exposed structure or artifacts should be documented and added to the site plan.

Due to algae blooms in Green Bay and the soft sediment surrounding the wreck, visibility at the site is oftentimes poor. The Little Harbor Launch is lightly built and fragile in nature, as such it is not recommended for a State-sponsored mooring buoy. Information gathered during the survey will be used for website updates, public outreach, and educational materials for Door County and the surrounding community.

MARGARET A. MUIR

The *Margaret A. Muir* survey was designed to document Great Lakes schooner construction and use in the bulk cargo trades, and to provide positive vessel identification through identifying marks or artifacts.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. A complete archaeological documentation of the *Margaret A. Muir*

site will be a continuing process for years to come. Some of *Margaret A. Muir'*s remaining hull structure is buried in sand surrounding the site. Large quantities of sand move through the area despite its depth, and various sections of wreckage are exposed at different times. As the sand continues to move, there is potential for previously undocumented hull structure and artifacts to be uncovered and exposed. For this reason, the site should be monitored, and any newly exposed structure or artifacts should be documented and added to the site plan. The vessel's size, location and construction details, all support the identification as *Margaret A. Muir*.

The second objective, however, was achieved. The *Margaret A. Muir* has been listed on both the State and National Registers of Historic Places.

The *Margaret A. Muir* site is easily accessible by boat, 1.65 miles southeast of Algoma's harbor entrance in the waters of Lake Michigan. The site is in 57 feet of water, which is a good depth for beginner divers and will make the wreck a popular dive site for recreational divers. A State-sponsored mooring buoy on the wreck would greatly facilitate diving activities and protect the wreck from anchor damage should the diving community support the effort of maintenance of a buoy. However, as the wreck site is close in proximity to the harbor entrance that it may pose a hazard to navigation. Information gathered during the survey will be used for website updates, public outreach, and educational materials for Kewaunee County and the surrounding communities.

MOJAVE

As an early barkentine, the Mojave survey was designed to provide positive vessel identification through identifying marks or artifacts and to document features of early sailing vessels of the Great Lakes bulk cargo trades.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. The ship's nameboards were not present, and painted areas and identifying marks were covered with quagga mussels. Although the length, beam, location and evidence of the wrecking event match, a complete archaeological documentation of *Mojave* site will be a continuing process for years to come. The information gathered during the 2023 survey should serve as a baseline for monitoring the *Mojave* site for changes caused by environmental affects as well as increased visitation by divers. The *Mojave* site one of the earliest built shipwreck sites in Wisconsin waters and retains a high degree of hull integrity. In most cases it is easier to document the structural components integral to vessel construction when a shipwreck is broken in pieces. When intact there is slower process of discovery and evaluation of the resource that is required. Additionally, as more of these early sailing ships are documented by Wisconsin Historical Society, a greater understanding of the features and nuances can be achieved and the greater the necessity to return to sites for comparative analysis.

The second objective was achieved, and *Mojave* has been listed on the State and National Registers of Historic Places. The *Mojave* site retains excellent archaeological integrity with very little of the vessel's hull broken. Sites such as Mojave present a rare opportunity under pristine, undisturbed conditions to study and learn about early Great Lakes sailing ships, their construction, and their use. As one of the earliest wooden barkentines documented in Wisconsin waters, the *Mojave* site has added a significant amount of information about early wooden vessel construction in the Great Lakes.

The *Mojave* site is deep and considered well beyond recreational diving depths. As technical diving increases in popularity, as charter boats establish in the region, and as the Wisconsin Shipwreck Coast National Marine Sanctuary draws in more visitation, the site will only become more accessible to an increasing number of divers. The site lies just over12 miles offshore, although easily reached by boat, diving the wreck should only be attempted in the best of conditions without risk of being caught out in weather that can blow up on the lake during the summer months. Because of the depth and the long distance from shore, it is not recommended for a mooring buoy. Advances in Remotely Operated Vehicle technology have made access to this technology easier and given people of various experience and skill means and incentive to visit some of these sites. With that in mind, intact sites with standing rigging such as *Mojave* are fragile sites and can easily be damaged by anchor drag and grappling hooks. They also contain many features that could cause hang-ups to ROV tethers potentially causing damage to the site. Information gathered during the survey will be used for website updates, public outreach, and educational materials. Information gathered during the survey will be used for website updates, public outreach, and educational materials for Wisconsin Shipwreck Coast National Marine Sanctuary.

PRIDE

The *Pride* survey was designed to document early Great Lakes schooner construction and use in the bulk cargo trades, and to provide positive vessel identification through identifying marks or artifacts.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. Although the vessel’s size, location, construction details, and details of her loss all support the identification as *Pride,* a complete archaeological documentation of the Peoria site will be a continuing process. Much of *Pride*’s remaining hull structure is believed to be buried in sand near the site. The gelatinous bottom substrate in the area of the wreck allows tools and hull sections to disappear beneath its surface. As the sediment continues to move around, there is potential for previously undocumented hull structure and artifacts to be uncovered and exposed. For this reason, the site should be monitored, and any newly exposed structure or artifacts should be documented and added to the site plan.

The second objective was achieved, and *Pride* has been listed on the State and National Registers of Historic Places. The *Pride*'s site is easily accessible from shore by snorkeling, or by boat or kayak from Sturgeon Bay's Otumba Park beach, located 0.15 miles north of the intersection of North Lansing Avenue and West Juniper Street. Due to its shallow nature, cladophora blooms, and soft sediment covering the wreck, visibility at the site is oftentimes poor. Because of the site's shallow location and the changing nature of the site, it is not recommended for a State-sponsored mooring buoy. Wisconsin DNR has added coordinates to the Wisconsin's Lake Michigan State Water Trail and the Wisconsin Public Access Lands interactive maps. Information gathered during the survey will be used for website updates, public outreach, and educational materials for Door County and the surrounding community.

SASSACUS

The *Sassacus* represents a unique site, as it was identified scow schooner, but its construction features indicated it is a conventional schooner. The *Sassacus* survey was designed to record Great Lakes scow schooner construction and to provide positive vessel identification through identifying marks or artifacts.

The first objective, to provide positive vessel identification through identifying marks or artifacts, was not achieved. Although no nameboard was located, the vessel's size, location, construction, and description of the wrecking, and deposition events all support the identification as *Sassacus*. A complete archaeological documentation of the *Sassacus* site will be an ongoing process. Although quite intact for such a shallow wreck site, the several portions of *Sassacus'* hull structure remain unknown. Due to the site's shallow nature, a large quantity of sediment moves through the area on a yearly basis, and it is probable that the missing sections of the vessel are buried beneath the sand. As the sand moves, previously undocumented hull structure and artifacts will continue to be uncovered and exposed. For this reason, the site will be closely monitored, and any newly exposed structure or artifacts will be documented and added to the site plan.

The second objective was also not achieved. The *Sassacus* site was evaluated under the standards of the National Park Service for listing on the National Register of Historic Places. As only 25% of the ship is represented on the site, it lacks the archaeological integrity needed for inclusion on the State or National Registers of Historic Places. The *Sassacus* site has been heavily visited over the years and, cultural artifacts from the site have been remove or are hidden by the sand The vessel's size, location, and construction support the identification as the *Sassacus*.

The *Sassacus* site is easily accessible by boat or kayak and is located near the hulk of the City of Glasgow in Lily Bay, Door County, Wisconsin. Due to the site's shallow nature in the surf zone, the wreck is covered by sand often obscuring the vessel remains. The site is best explored

during prolonged periods of calm weather and in the early spring. As the wreck lies in very shallow water, *Sassacus* can be easily viewed from the surface. Because of the site's location and at times is exposed on the beach, it is not suggested for a State-sponsored mooring buoy. Aid for boaters, divers, kayakers, and snorkelers wishing to visit the wreck are not needed. Wisconsin DNR has added coordinates to the Wisconsin's Lake Michigan State Water Trail and the Wisconsin Public Access Lands interactive maps. Information gathered during the survey will be used for website updates, public outreach, and educational materials for Door County, and the surrounding community.

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