United States Department of the Interior
National Park Service

National Register of Historic Places
Multiple Property Documentation Form

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in Guideline for Completing National Register Forms (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

Minnesota's Lake Superior Shipwrecks (A.D. 1650-1945)

B. Associated Historic Contexts

1. Exploration/Fur Trade (1650-1840)
2. Settlement & Fishing On Lake Superior (1854-1930)
3. Minnesota's Iron Ore Industry (1880s-1945)
4. Northern Minnesota Lumbering (1870-1930s)
5. Railroads and Agricultural Development (1870-1940)
6. North Shore Tourism and Recreation (1870-1945)

C. Geographical Data

Lake Superior Waters, Shores, and Estuaries Within the Boundaries of Minnesota.

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

[Signature]
Signature of certifying official
[Date]

State or Federal agency and bureau

[Signature]
Signature of the Keeper of the National Register
[Date]
E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

See continuation sheet
CONTEXT 1: EXPLORATION/FUR TRADE (1650-1840)

Culture History

The pre-contact culture history of the North Shore is poorly understood in Minnesota due to a scarcity of known sites. No prehistoric sites have been excavated and only three prehistoric sites are recorded along Lake Superior in the official site files. The early cultural history of the region is thus largely based on the adjacent area of the Superior Shore in Canada. No pre-contact vessels have been recorded in the Lake Superior waters of Minnesota so no pre-contact contexts for shipwrecks are included here.

At the time of contact, the Cree may have controlled most of the western Superior Shore with some Dakota present in the south and some Ojibwe in the north. By 1700, the Ojibwe controlled much of the region. French explorers entered the Lake Superior country in the mid-1600s. French fur posts were soon established in the far north where Grand Portage became a major trading center. Anglo-American traders re-used the French sites along the Grand Portage and also established posts near Duluth.¹

Exploration to 1820

The appearance of French explorers on Lake Superior predates the landing of the MAYFLOWER at Plymouth Rock in 1620. Only a decade after the initial French settlement of Quebec in 1608, the French reached the waters of Lake Superior. By 1650 the French were engaged in mapping the Midwest. They reached the Upper Mississippi River in the mid-1670s, and claimed that vast territory for King Louis XIV.

Etienne Brule is credited with the European discovery of Lake Superior before 1620. He may have traveled on the Lake as far west as Isle Royale. Raymbault visited the St. Marys Rapids in 1641, learning about the Dakota (Sioux) who lived beyond its shores. Groseilliers and Radisson ventured further west. They wintered near Chequamegon Bay in 1654. They visited the "Head of the Lakes" (present-day Duluth area) that year and again in 1660. They were believed to have been the first Europeans to travel on Lake Superior. Groseilliers and Radisson were accompanied on their return voyages by flotillas of Indian canoes packed with furs. Fr.
Rene Menard visited western Lake Superior in 1661. Another missionary, Fr. Claude Allouez, explored the northern and western shores of Lake Superior in the mid-1660s. He contributed to a 1670 Jesuit map that accurately showed details for the first time. Louis Jolliet discovered the important water route from Green Bay to the Mississippi River in 1673. Daniel Greysolon, Sieur DuLuth ventured to the St. Louis River in 1679. He then journeyed overland to Mille Lacs and the Mississippi River. He not only explored much of the area between Kaministiquia (present-day Thunder Bay, Ontario) and the Mississippi, but made alliances with several Native American tribes and opened trade for the French. These Frenchmen and a handful of others sought to extend Louis XIV’s claims to New France. They traveled across the wilderness principally by water in small undecked vessels such as canoes or batteaux. Although many of their routes are known to modern historians, no remains of their frail craft have yet been found.

Several of the French explorers were aware of the ancient Pigeon River portage and its strategic importance. DuLuth established a post at nearby Kaministiquia in 1683, though no post was erected on the Pigeon River itself until decades later. Pierre de La Verendrye and his sons built Fort St. Pierre at Rainy Lake on the portage in 1732, and Fort St. Charles at Lake of the Woods a year later. These were the first white settlements in present day Minnesota. The first post on the bay at Grand Portage was erected soon afterward. The significance of Grand Portage to the later fur trade is well known. Its importance in the exploratory period suggests a strong potential for artifactual remnants of the boats of that era to be found in or near Grand Portage Bay.

By 1720 French speculators and exploring parties ventured all over the Midwest. By this time they had achieved a solid familiarity with the geography of the Great Lakes, the St. Lawrence and Mississippi River basins, and most of the connections and portages between the great watersheds. They had travelled all the way from the Atlantic to the prairies, and from the Canadian Shield to the Gulf of Mexico. After 1720, the French stabilized their trade with the natives, though their exploration slowed. Some further exploration occurred toward the Rocky Mountains and the Saskatchewan country in the 1730s. During the latter part of the
1820’s, international conflicts diverted French attention and financial resources.

The British moved forward in exploration after 1763. Alexander Mackenzie pushed north and west from Grand Portage to the rim of the Arctic Ocean in 1789, venturing across the Rockies to the Pacific in 1792. David Thompson explored parts of Minnesota, the Dakotas, and eventually (in 1809) crossed the Rockies and followed the Columbia River to the sea. Zebulon Pike, Lewis Cass, Stephen Long and Henry Schoolcraft mapped out Minnesota’s geography in United States government employ between 1805 and 1820. By 1820, the exploratory period had ended. Most mapping thereafter dealt with boundary clarification and embellishing details of the territorial landscape.

The Fur Trade Around Western Lake Superior (1650-1840)

Several factors brought the fur trade to the Great Lakes in the early decades of the sixteenth century. The fashion for beaver hats generated a demand for pelts. French trade for beaver in the lower St. Lawrence River had led to the depletion of the animals in that region by the late 1630s. As a result, the French searched further and further west for new resources and new routes, making alliances with the Native Americans along the way to trap and deliver their furs.

By the mid-seventeenth century, Brule, Nicolet, Groseilliers, Radisson, Duluth, and other distinguished Frenchmen had mapped out the major watersheds of the middle west, won the trust of important native tribes, and established a handful of posts in the wilderness. Native tribes around the Great Lakes quickly recognized the value of European trade goods such as hatchets, axes, kettles, knives, and firearms, and were eager to trade with the Frenchmen. After 1675, competition increased with the English, the Dutch, and the Iroquois to the south, while the new and powerful Hudson’s Bay Company had a foothold in the north. The French, therefore, continued to move westward.

DuLuth negotiated an agreement with the Dakota at Izatys (Mille Lacs) in 1679, which opened much of the upper Mississippi region to the French. By 1700, they had established a handful of posts from Lake Peoria on the Illinois River to Kaministiquia and Lake
Nipigon. Their couriers controlled the region south and west of Lake Superior. The forts at Kaministiquia and Lake Nipigon attracted trade from the far north, competing with the Hudson’s Bay Company.  

LaVerendrye arrived on Lake Superior in 1730 to develop routes and expand native trade deeper into the west. He erected Fort St. Pierre at Rainy Lake in 1731 and Fort St. Charles at Lake of the Woods in 1732. He reached into the Mandan country of the Missouri watershed in 1738. LaVerendrye brought the Grand Portage trade up to a level that was competitive with that of the Mississippi-Wisconsin-Fox River route. Twenty years later, the French established posts in the Lake Winnipeg district to prevent the tribes in the northwest from trading with the English. French trade routes extended all the way from Montreal to Lake Athabasca and the Canadian Rockies.

In the Treaty of Paris of 1763, the French lost all their territory east of the Mississippi River. Though technically the land was controlled by the British for just twenty years, the fur trade remained in British hands until after the War of 1812. The business centered on Grand Portage, Michilimackinac and La Pointe. The trade was managed by the Hudson’s Bay Company and its newly-organized rival, the North West Company. The North West Company was composed of a loosely-knit group of partners and was headquartered at Montreal.

From 1768 until 1804, the North West Company brought hundreds of traders and voyageurs to their headquarters at Grand Portage to exchange west-bound trade goods for east-bound pelts. Their July rendezvous was the once-a-year meeting with the "northwesters" before the voyageurs made their way back down the Lakes to Montreal. Grand Portage was a natural meeting place. It was located as far west as the canoes could travel in one season and still get back to Montreal before the Lakes froze up. It was also the terminus for the original route into the heart of the west, and was situated on a great bay where large numbers of canoes could find shelter. In the 1790s the fort at Grand Portage had sixteen buildings, including dwellings, a great mess hall, a counting-house, warehouses, a canoe-shed, and a long dock.
The fur trade on the Lake was traditionally carried out in birch bark canoes and wooden batteaux of varying descriptions. Twenty-four-foot North canoes were employed for the western traffic because they were light, easily portaged, and sufficiently maneuverable for the frequent rapids. Thirty-six-foot Montreal canoes were used on the open Lakes. After about 1700, they were supplanted by pine-plank batteaux. Double-ended York boats were used on the major rivers of western Canada after about 1780. Small sailing craft, known as mackinaw boats, were also in use by this time. After 1770, a number of merchant sailing ships were built on Lake Superior to expedite transportation between Sault Ste. Marie and the western end of the Lake. Most of these were schooners ranging in size from 40 to 85 tons. Most were built at Point aux Pins, just above the Sault. Between 1778 and 1811, at least ten such craft were built for the various partners of the North West Company. Two or three were built for the Hudson’s Bay Company, and at least five for the American Fur Company, between 1817 and 1840. Fewer than three or four vessels were in service on Lake Superior at any one time up until the 1820’s.

After 1792, the North West Company established several posts on Minnesota rivers and lakes, and in areas to the west and northwest, for trading with the Ojibwe, the Dakota, and other native tribes. The first of these posts was located at the present site of Superior, Wisconsin. Known as Fort St. Louis, it became the headquarters for North West Company’s new Fond du Lac Department. It had stockaded walls, two houses of forty feet each, a shed of sixty feet, a large warehouse, and a canoe yard. During this time there were more than forty British fur posts within the present boundaries of Minnesota. Key northern Minnesota posts were located at Vermillion, Sandy, Leech, Cass, Red, and Rainy Lakes and, of course, Grand Portage.

As a result of Jay’s Treaty in 1794, the North West Company relocated its headquarters from Grand Portage to Kaministiquia. The company’s Fond du Lac Department headquarters was moved from Superior to Leech Lake in 1805. The Company continued to operate other posts all over Minnesota and upper Wisconsin for another ten years, despite titular American control of the territory.

The American Fur Company was organized by Austrian-born John Jacob Astor in 1808. The Company began trading at the Head of the Lakes
in 1809. In 1817, it erected a new headquarters at present-day Fond du Lac, on the St. Louis River. There, portages connected Lake Superior with Lake Vermillion to the north, and with the Mississippi to the south. Active trade was carried on until the failure of the fur trade in the 1840s. By then, the trade had shifted westward. When John Aitkin took charge of the "Northern Outfit", he relocated the headquarters to Sandy Lake.

In 1834, the American Fur Company undertook commercial fishing operations on Lake Superior to bolster their sagging profits. Fishing stations were established at Fond du Lac and Grand Portage, both of which had been virtually abandoned. Nearby La Pointe (Wisconsin) was the center of the Company’s fishing business. Four to five thousand barrels of fish were shipped annually from the three sites during their heyday in the mid-1830s. The 111-ton schooner JOHN JACOB ASTOR was built for the firm in 1835 to transport fish and supplies. Three similar craft were added in the next few years as the volume of the trade grew.\(^6\)

The fur industry began to decline in the 1830s, due to depletion of fur-bearing animals and declining markets for furs in Europe. The Panic of 1837 led to the ultimate failure of the American Fur Company. The firm had begun diversification some years earlier, and managed to stave off dissolution until 1842. The North West Company merged with the larger Hudson’s Bay Company in 1821. That firm survived by concentrating all of its attention on Canada’s northernmost territories, where the trade was most lucrative and transportation cheapest. The Company still thrives today.

The old posts were abandoned one by one. The North West Company’s old Fort St. Louis was abandoned by 1815. The fort at Grand Portage was used as a fishing station in the 1830s, but it reverted to a quiet Ojibwe village by 1842. Fond du Lac was operated by the Missouri Fur Company between 1842 and ca. 1847. Then it, too, was left idle. Kaministiquia’s post survived until the amalgamation of the North West and Hudson’s Bay companies. It was abandoned thereafter in 1821 in favor of transport by way of Hudson’s Bay.\(^7\)

In Minnesota, the Native American fur trade collapsed by the 1840s. Subsequent commerce in furs has been sustained largely by individual trappers operating in the Mississippi headwaters. During the 1850s, the industry centered around Mendota. It later focused
in St. Paul, although trapping has persisted in the northern portion of the state until the present time.

ASSOCIATED PROPERTIES

As far as is known, no aboriginal or European exploratory watercraft have been found in Minnesota’s Lake Superior waters, although the existence of such craft cannot be discounted.

The sites of principal fur posts on Lake Superior merit systematic survey due to the high probability of material culture being present along the shoreline and in submerged environments. North West and XY Company sites on Superior Bay, the Fond du Lac, Encampment Island, Grand Marais, and Grand Portage, all have promise, particularly the Fond du Lac and Grand Portage locations, because of the long occupation and the intensity of activity there. In addition to tools, trade goods, and other portable artifacts, there is a possibility that remnants of batteaux or mackinaw boats and the tackle (such as anchors) from the larger schooners exist. One vessel from the fur trade period is believed to have wrecked in Minnesota waters: the schooner MADELINE was reportedly crushed by drifting ice in the mouth of the Knife River in April, 1838.  

FOOTNOTES

1. No fluted or Plano points have been reported along the Minnesota Superior Shore, but several late Paleo-Indian sites have been recorded in the Thunder Bay area. The Cummins site is a habitation and quarry site on a glacial beach ridge. It has been dated to 8,500 years ago. The site yielded lanceolate points, preforms, and bifacial blades made of jasper taconite. The remnants of a cremation were also found.

Archaic evidences on Minnesota’s North Shore are apparently limited to a few finds of copper artifacts, notably the copper complex at the Fowl Lake site. In Ontario, the Renshaw site is the remnant of a large Archaic fishing camp where copper tool manufacture was a major activity. Earlier Shield Archaic sites in the Thunder Bay area are largely associated with jasper taconite quarries.
Evidence for Woodland occupations along the North Shore are particularly scarce. No prehistoric ceramics have been found and no mound sites have been reported in this region of Minnesota. A 1977 survey of the Superior Shore in Canada from the United States border to Thunder Bay located forty-five sites of which only three appeared to be Woodland. One of the sites contained Laurel ceramics and another Terminal Woodland (Blackduck?) ceramics. D. Arthurs, An Archaeological Survey of the Northwestern Shore of Lake Superior 1977, (Toronto, Ontario Ministry of Culture and Recreation, 1984); K.C. Dawson, "The Cummins Site," (Paper presented at the 9th Annual Archaeology of the Superior Basin Symposium, Thunder Bay, 1982); R.J. Mason, Great Lakes Archaeology (New York, Academic Press, 1981).


8. Innis, The Fur Trade, 17-18, 44.


10. Blegen, Minnesota, 56-60.

11. Innis, The Fur Trade, 92-100. The author explains the economic pressures driving French westward expansion.


13. Robert C. Wheeler "The North American Fur Trade," in George F. Bass, ed., A History of Seafaring Based on Underwater Archeology, (New York: Walker & Company, 1972), p. 284-285. The birch canoes were essentially the same as those built by the Indians. Bauteaux were plank-built with double ends and flat bottoms. They sometimes carried a sail. Several different designs are grouped under the name of mackinaws. Most are round-bottomed craft with double ends and a simple ketch rig. They are generally believed to be of French origin, dating to at least 1750. See expanded discussion of mackinaw boats in section F of this document.

14. Nute, Lake Superior, 117ff. All of these vessels seem to have been schooners, with two masts and a simple fore-and-aft rig. They would have measured between thirty-five and about seventy feet in length, carrying crews of two to four men.

15. Blegen, Minnesota, 72; Roufs, "Early Indian Life," 60.

16. Blegen, Minnesota, 138; Nute, Lake Superior, 72, 173ff. The JOHN JACOB ASTOR was a 77-foot schooner designed to trade from Sault Ste. Marie to the various fishing stations. The larger brig, RAMSAY CROOKS, hauled the Company's cargoes between the Sault and Detroit.

17. Blegen, Minnesota, 134-140; Nute, Lake Superior, 305-311.
18. **MADELINE** was built in the Fall of 1837 for the American Fur Company, primarily for their fishing business out of La Pointe. She was described as a "slip-keel boat" of 40 foot keel and 12 foot beam, measuring 20 tons. She was schooner-rigged, with two masts. Capt. John D. Angus interview in *Ashland Daily Press*, April 22, 1893; James D. Butler, *Early Shipping on Lake Superior*, (Madison: Marquette County Historical Society, 1895); Nute, *Lake Superior*, 120-121. Capt. Angus reported:

"...A nor’wester came up and brought (a) big body of ice in our rear...(we) just made the mouth of the Knife (River). I saved the men and the cargo, but the MAGDALEN (sic) was a total loss. We got the canvas off and built tents..." Angus incorrectly identified the date of the accident as April 16, 1836. Curiously, the loss of the ship cannot be substantiated from the authoritative *Calendar of the American Fur Company's Papers*. 
The collapse of the fur trade around 1840 was followed by a period of quiet in northern Minnesota, ending almost two centuries of trade between the Cree, Dakota, Assiniboine and Ojibwe on the one side, and the French, British, and Americans on the other. Though the voyageurs' canoes and bateaux disappeared from Lake Superior, a limited commercial fishery was left behind by the fur companies. A handful of schooners served the lake trout and whitefish trade, operating out of Sault Ste. Marie (Michigan), LaPointe (Wisconsin), and Michipicoten (Ontario). Seasonal fishing appears to have persisted at Grand Portage, Isle Royale, Grand Marais, Encampment River, and perhaps Fond du Lac, where the American Fur Company had fished in the 1830s. The white fishermen were, however, just itinerants in the Native American's domain.¹

The LaPointe Treaty of 1854 ceded to the United States the entire Minnesota shoreline of Lake Superior, and white speculators were quick to move in. Attracted by rumors of copper and gold, scores of Yankee "land-lookers" moved to nearby Ontonagon (Michigan) and Superior City (Wisconsin) in 1852 and 1853 in anticipation of a treaty which would open up for their exploitation all of the rich resources which belonged to the Indians; some of them waited for months. During the weeks of negotiations leading up to the Treaty, some of the speculators paddled secretly up the North Shore to preempt claims in the most promising locations.²

With adoption of the Treaty in September, 1854, dozens of men staked their claims along the North Shore, principally where copper was thought to be, and at the mouths of the larger streams. Many preempted land around Duluth, where several townsites were platted. Richard Godfrey went to Grand Marais and built a small shack to engage in fishing and trading. A man named McIntyre staked a claim at Knife River for the R.B. Carlton Company, where a miner named John Parry also preempted land. Several men also built cabins at Beaver Bay. In the next two years, there were settlers or preemptors at Buchanan (east of Knife River), Burlington Bay (Two Harbors), French River, Stewart River, and Silver Creek, in addition to the locations settled in 1854 and the older trading post at Grand Portage. Commercial fishing was reactivated at several sites; the 1857 census indicates ten fishermen in St. Louis
County and eighty-nine in Lake County. Steamboats made occasional calls to the wilderness locations.³

Most of the claims were abandoned in the Panic of 1857. Copper was found at Talmadge, French, Sucker, and Knife Rivers in small amounts. The settlers at the Beaver Bay colony survived the lean years because the industrious Wieland family developed successful farms there.⁴ The North Shore did not recover until geologist Henry Eames began the "Vermilion Gold Rush" in 1865. Most of the men who came in that era were prospectors or land-cruisers trying to stake claims to mineral lands for outsiders, thought a few were fishermen or trappers. There were very few women at first. Many of the adventurers married Ojibwe women.

When construction started on the Lake Superior & Mississippi Railroad in 1869, Duluth began a period of spectacular growth. The population grew from fourteen families in January, 1869 to 3,500 people by July of that year. A large percentage of the newcomers were Scandinavian immigrants. This marked the beginning of a flood of Swedes, Norwegians, and Finns to Minnesota. Soon there were sawmills, grain elevators, and warehouses on the waterfront, and homes all over the hillside. Steamboat lines from Buffalo, Detroit, and Chicago began making regular calls at Duluth, and the development of its magnificent harbor was begun.⁵ The Wielands erected a water-powered sawmill at Beaver Bay in 1869. They bought the sixty-five-foot schooner CHARLEY to trade with other Lake Superior communities. Beaver Bay was for many years the largest community between Duluth and Port Arthur. Henry Mayhew and Sam Howenstine arrived in Grand Marais in 1871 to found a village and begin a commercial fishing enterprise. The 1873 Panic put an end to the growth, however. Duluth's population shrank to 1,300 souls.⁶

Recovery took several years. In 1879 and 1880, confidence and stability returned. Conditions were ripe for genuine and sustained prosperity. Duluth grew very quickly as grain began to flow eastward from the prairie states,requiring expanded harbor facilities, huge new grain elevators, and a large workforce. Two Harbors was settled and developed as Minnesota's first iron ore port, bringing hundreds of laborers there, and to the mines far to the north. Railroads stretched from the Head of the Lake to the south, east and west.⁷
Duluth’s growth, along with its rail connections to St. Paul and the West, brought passenger and package freight steamers, laden with merchandise and foodstuffs from the East, to the local docks daily from the lower Lakes. “Feeder lines” of smaller ships were established to run from Duluth to Port Arthur on the North Shore, and to Houghton and Hancock on the South Shore, supplying the needs of the outlying communities and transporting people all along the shores. The small lines also provided a market for fresh fish caught at many of the smaller ports.

In 1879 Duluth had thirty-five commercial fishermen. By 1885, 195 fishermen operated five steam tugs and nearly forty mackinaw boats out of Duluth, and there were dozens of others on the North Shore. Cooley & Lavaque and the Duluth Fish Company ran “collection steamers” up the shore to supply the fisherman at remote locations, as well as to pick up barrelled whitefish and trout. These swift little craft enabled the fishermen to concentrate on fishing and roam far from the market points in search of their prey. The fish were sold in Minneapolis, St. Paul, Chicago, Kansas City and St. Louis. This efficient system sustained a large number of Norwegian families on the North Shore. An 1888 Duluth newspaper commented:

The Booth Packing Company are now receiving fresh fish at the rate of about 100 tons per month, the fishing on Lake Superior having become good...The (T.H.) CAMP brings in nearly ten tons each trip from Isle Royale and the North Shore. Duluth is now hauling more fresh fish then all the (other) Lake Superior ports combined.8

In 1889, A. Booth & Sons bought out Cooley & Lavaque, gradually taking over the collection business. They ran a series of different steamers on both the North and South Shores during the next decades, including the A. BOOTH, HUNTER, and HIRAM R. DIXON, during the 1880s and 1890s, and the larger LIBERTY, C.W. MOORE, BON AMI, EASTON, and AMERICA, around the turn of the century. The 185-foot AMERICA was a favorite from 1902 until her accidental loss at Isle Royale in the spring of 1928. Until completion of the North Shore Highway (TH61) in 1926, the AMERICA was the only link with civilization for all the fisherfolk along two hundred miles of rugged and isolated shoreline. AMERICA brought the groceries, mail, salt, ice, barrels, and all the other necessities, and took away all the fish that could be harvested from the big Lake.9
Commercial fishing flourished at the Head of the Lakes for the early decades of the twentieth century, dominated by Norwegian immigrants, though a number of Swedes and Finns were also involved. The annual catch varied over the years. The all-time high came in 1915, when nearly 10,000 tons were recorded at Duluth alone. The catch dwindled after the 1920s, so that many fishermen were forced to find other sources of income. By 1930, the yield dropped below 4,000 tons; it has since fallen below 1,000 tons. Whitefish dwindled in numbers in the 1890s, and were supplanted by lake trout in the commercial fishery. Predatory lamprey eels and over-harvesting nearly wiped out the trout in the 1950s. Finally, sports fishermen successfully lobbied legislation that was unfavorable to the commercial fishing industry. A 1975 government report indicated that there were 137 full-time commercial fishermen in the Great Lakes and 2,800,000 sports fishermen.

During the 1870s, a trail was slashed through the woods along the North shore. A wagon trail was established by 1880. The Duluth & Iron Range Railway was constructed between Duluth and Two Harbors in 1889, although a real road was not completed all the way up the shore from Duluth to Grand Portage and Port Arthur until the mid-1920s. The road dramatically changed the lifestyles of North Shore residents. It brought to an end their dependance on the collection steamers and enabled them to transport their fish by truck. It also brought tourists in ever-increasing numbers. Some of the fishermen began building resorts and renting cabins to supplement their income.

The infusion of permanent settlers along the Minnesota North Shore ended around 1900. Since that time new arrivals have been primarily summer residents whose permanent addresses are in the Twin Ports (Duluth-Superior) or the Twin Cities.

ASSOCIATED PROPERTIES

While no remains of vernacular fishing craft have been found underwater in Minnesota, several areas have a high probability for such finds, including the sheltered harbors at Grand Portage, Grand Marais, Beaver Bay and Two Harbors. The sidewheel steamer LOTTA BERNARD dates from the days of early North Shore settlement. She was lost on the Lake off Encampment River in October, 1874. Some
abandoned fishing craft which have Minnesota connections have been reported at Isle Royale. The schooner STRANGER foundered somewhere in Lake Superior after drifting in a helpless condition from Grand Marais harbor in December, 1875. The Wieland's schooner CHARLEY is thought to have wrecked at her dock in Beaver Bay in May, 1881. The collection steamers ISLE ROYALE, A. BOOTH, MARY MARTINI, and LIBERTY, were all lost off of various North Shore locations. The first two are likely to retain full outfits of tools and equipment. There are also underwater components to historic fishing sites which merit study at places like Little Two Harbors, where fishing equipment has been reported by sport divers.  

FOOTNOTES


7. Van Brunt, *Duluth and St. Louis County*, 248ff; Walker and Hall, *Duluth-Superior*, 66-68.


10. According to the 1895 census, nearly 50 percent of the North Shore’s 177 fishermen were Norwegians. Raff, *Pioneers*, 41, 123.


CONTEXT 3: MINNESOTA’S IRON ORE INDUSTRY (1880s-1945)

The Vermilion Range

One of Minnesota’s most enduring symbols is mineral wealth, specifically iron ore. As early as 1734, French adventurer LaVerendrye was told of iron west and northwest of Lake of the Woods, in what was later known as the Atikokan Range. In 1807, John McLoughlin, a Hudsons Bay Company representative at Grand Portage, commented on large quantities of iron ore in the region. Following the War of 1812, a series of border disputes occurred between the Americans and the British; these resulted in systematic surveys of northern Minnesota in the 1840s and 1850s. The first rough concepts of the mineral districts began to emerge.¹

Joseph N. Nicollet surveyed parts of Minnesota between 1836 and 1843. He reported iron sulfides and described for the first time the "Missabay Heights", using the Ojibwe name for the great ridge which extended nearly a hundred miles across northern Minnesota.² Government surveyors under David Dale Owen conducted scientific surveys between 1848 and 1850 and described iron ore in a U.S. Geological Survey report published in 1852.³ Territorial Governor Alexander Ramsey considered the potential mineral wealth of the region when he asked for a road to Lake Superior in his first message to the territorial legislature in 1849. In 1860, as Governor of the State, Ramsey referred to copper and iron ores "known to be of singular purity".⁴

In 1864 two survey commissioners reported "precious ores" abounding in the northeastern part of the state. A year later, Governor Stephen Miller sent surveyor and geologist Henry H. Eames to learn further details of the mineral sites. Eames found iron "fifty to sixty feet in thickness" near Lake Vermilion.⁵ Eames also reported veins of gold and silver-bearing quartz nearby, touching off the "Vermilion Gold Rush" of 1865. Little gold was found, but the fifteen mining companies which had incorporated to exploit it got congressional appropriations for a road all the way from Duluth to Vermilion Lake in 1869. This road through the forests had lasting value to the region. The only other road tributary to Duluth at that time led south to St. Croix.
In the Fall of 1865, Duluth pioneer George Stuntz joined in the hunt for gold. Near Vermilion Lake he found a great iron outcrop where the Soudan Mine was later developed. He brought back samples to Duluth and unsuccessfully approached a number of people for financial support in exploiting the ore. Samples were sent to the Paris Exposition in 1867. That same year, the Smithsonian Institution sent out at least one hundred boxes of the ore to various institutions for study. One correspondent for a St. Paul newspaper described "immense beds [of iron ore] hundreds of feet in height" in 1865, "enough to supply for a hundred years all of the furnaces of the entire world." Another correspondent reported in 1867 that "vast fields of the richest iron ore are said to exist upon the shores of this [Vermilion] Lake, and some specimens brought down...show that the report is not unfounded." Nevertheless, the ore deposits went untapped for another twenty years.

In April, 1875, Duluth banker George Stone approached financier Charlemagne Tower of Philadelphia with a proposal to invest in the mineral lands. Tower held extensive interests in the Northern Pacific Railroad, and was aware not only of the stories about Minnesota iron ore, but also of the beneficial effect that mining might have on the railroad, as well as the investment potential for ore reserves of the magnitude described at Lake Vermilion.

Tower’s surveyors spent a month examining the Lake Vermilion site and portions of the eastern Mesabi Range. After studying the best of the Vermilion Range’s hard hematite ore and the poorest of the Mesabi’s lean magnetite, they dismissed the Mesabi locations and recommended further study of the Vermilion. Some of the Vermilion samples they obtained had an iron content of sixty-nine per cent. Tower told promoter George Stone, "The expense of mining what ore there is [on the Mesabi]...and of getting it to market, forbids us entirely. The Vermilion district is more promising."

Due to the lingering effects of the 1873 Panic, the depressed market for iron, and the difficulties of transporting the ore from the Range to faraway mills, Tower moved cautiously on the venture. By 1880, market conditions had improved. The value of ore rose from $5.50 per ton in 1878, to $9.25 per ton two years later. The demand for ore grew so quickly that steelmakers worried about exhausting Michigan and Wisconsin reserves. Tower recognized that
someone else would buy up the Minnesota mineral lands if he did not. With Stone acting as his Duluth agent, he began to acquire properties. George Stuntz, the government surveyor, devalued much of the land by describing it as swampland, favoring Tower’s plans. Stuntz also helped select much of the 20,000 acres that Tower bought between 1880 and 1882. Meanwhile, Stone successfully lobbied a special tax bill through the Minnesota legislature, intended to encourage mining in the state. In lieu of all taxes and assessments, the bill established a royalty of one cent per ton of iron ore shipped. This produced a windfall for Tower and provided a strong incentive for later Mesabi investors. During 1881, Tower sold off forty percent of his Vermilion property to Marquette mine operator Edward Breitung. The partners agreed to share the costs of further land acquisitions, railroad construction, and harbor development. Tower, Stone, Breitung, Stuntz and others, incorporated the Minnesota Iron Company in 1882.9

Tower commissioned Stuntz to survey possible rail routes from the mine site to Lake Superior. Stuntz recommended a seventy-mile route to take the ore to Agate Bay, approximately twenty-five miles north of Duluth. Through Stone, Tower gained control of the charter for the Duluth & Iron Railway Company, which had been incorporated in 1874 by Duluth and Ontonagon (Michigan) businessmen, but never built. Along with the railroad, Tower got the company’s generous land grants, amounting to ten sections of swampland for each mile of track actually built, which could be selected anywhere within ten miles of the right of way. Tower transferred ownership of the railway, 17,666 acres of St. Louis County land, and 2,840 acres of Lake County land to the Minnesota Iron Company.

Construction of the D. & I.R. Railroad began in the summer of 1883 at Agate Bay. Six hundred laborers pushed across swamps, filled deep ravines, bridged flowing streams, and blasted away rock ridges in their path. They completed twenty miles of track before winter. A settlement soon developed at the terminus of the line, where previously a single pioneer had resided. The Duluth papers observed the explosive population growth with some amusement:

There are but eight or ten houses and tents at Agate Bay, and seven of them are occupied by saloons. The railroad
work is going forward rapidly, and the influx of men to the place is great. The hotel, now building by the railroad company is going ahead rapidly. Two Harbors, the name given the place, is destined to be quite a town.¹⁰

Early communication with Duluth and other communities was entirely by lake. Supplies were brought in the same way, since there were no roads to Agate Bay (renamed Two Harbors after 1883). After 1880, several steamboats ran up the shore from Duluth on weekly or twice-weekly schedules. Regular service was inaugurated in 1883 when the steamer R.G. STEWART began daily runs, at a round trip fare of $1.50.¹¹ A wagon road opened along the north shore to Two Harbors within two or three years, but not until 1887 were rail connections made between the two towns. Three locomotives were brought to Two Harbors by barge in the Fall of 1883.¹² Ten more locomotives and scores of rail cars arrived by the same means in the next years.

Under the supervision of Mr. Breitung, construction of two 552-foot, gravity-style wooden loading docks began on Two Harbors. Pile-driving problems delayed construction of Dock Number 1, but Dock 2 was completed in the summer of 1884. Dock 1 was finally completed a year later.¹³

In the spring of 1884, 140 men were employed at the new Soudan Mine near the fledgling town of Tower. By June there were 540. By the time the rail line to the mine was completed, the crew had accumulated a large stockpile of ore. The train was quickly loaded for the return trip. The first cargoes of Minnesota ore, consisting of 2,818 tons of "Vermilion Lump" hematite consigned to George and Samuel Ely of Cleveland, were loaded on the steamer HECLA and the consort-barge IRONTON on August 1, 1884. Total shipments from the mine during 1884 amounted to 62,124 tons.¹⁴

The Ely brothers soon became exclusive agents for Tower's ore. During 1885, the company shipped 277,075 tons. The following year, they shipped 307,949 tons. The Carnegie interests of Cleveland purchased the ore in consignments of 100,000 tons at a time. By 1886, the Minnesota Iron Company liquidated debts incurred during its first year. In 1887, in fulfillment of one of the original conditions of the state land grant, the company constructed a rail
link from Two Harbors south to Duluth, connecting it to the nationwide rail system. By that time, the company had 95.7 miles of track, 26,800 acres of property, thirteen locomotives and 340 cars, extensive shops and loading facilities at Two Harbors, and five open-pit mines at Tower. It ranked as the third-largest iron mining firm in the nation.¹⁵

The quick success of the company and the purity of its ores attracted the attention of major steel producers. Henry H. Porter, a Chicago railroad magnate with heavy interests in the Illinois Steel Company, headed a syndicate whose participants included John D. and William Rockefeller (Standard Oil Company), Marshall Field (a Chicago merchant), Cyrus McCormick (a farm implement manufacturer), and Jay C. Morse (Union Steel Company). Porter's syndicate acquired 25,000 acres of land to the northeast of Tower's property, hoping to somehow squeeze Tower out. In 1886, they resorted to more aggressive tactics, the elderly Tower agreed to sell to the syndicate for $8,500,000. Contemporary newspapers described the deal as "the largest transaction in the way of a cash sale that has ever taken place".¹⁶ Porter immediately reorganized the Minnesota Iron Company, mechanizing some of its operations, adopting underground mining, and developing the new Chandler Mine near present-day Ely, where he built a new twenty-one-mile rail spur. The company opened the Pioneer Mine in 1889, the Zenith Mine in 1892, and the Savoy and Sibley Mines in 1899. The Chandler proved to be the most productive of the firm's mines, yielding 7,027,830 tons between 1888 and 1901, which represented 43.9 percent of the Vermilion Range's output. The Vermilion Range was highly successful. From 1892 through 1952, the range produced at least one million tons annually, with the exception of only a few years. 1902 was the peak year, during which the various mines shipped a total of 2,084,054 tons.
accommodate the demands for more tonnage. The old wooden docks were replaced with three concrete ones in 1907, 1911, and 1916.\footnote{17}

The Mesabi Range

Expeditions in the 1830s and 1840s brought back a general knowledge of northern Minnesota's geography, but it was David Dale Owen's survey between 1848 and 1850 that provided the first comprehensive details of the country. In the expedition's first year, the survey team recorded the ores around Vermilion Lake. In 1849, they found thin layers of ore at Gunflint Lake. In a guide to Minnesota published in New York in 1853, J. Wesley Bond wrote: "a mountain extends all the way between the St. Louis River and Pigeon River. It evidently abounds in copper, iron and silver. The terrestrial compass can not be used there, so strong is the attraction of the earth. The needle rears and plunges 'like mad'."\footnote{18}

Fur trader James Whitehead reportedly sank a shaft on the Mesabi Range near the present city of Grand Rapids in the early 1850s while representing St. Paul interests, but nothing is known of the enterprise.\footnote{19} The Hanchett and Clark surveys of 1864 focused on Vermilion Lake. They referred briefly to "evidences of a deposit of magnetic iron north of Duluth," but did not investigate its extent. Henry Eames found magnetic ores southeast of Vermilion Lake and at the Prairie River (the eastern and western ends of the Mesabi), but he was more interested in copper and gold, and attributed little value to the discovery. It was not until 1875, when Albert Chester investigated the region's minerals for Charlemagne Tower, that the Mesabi was examined again. Chester dismissed its importance because he had seen only the leanest of its ores at the eastern end of the Range. Because of the unfavorable Eames and Chester reports, the Mesabi remained undisturbed for another fifteen years.\footnote{20}

Christian Wieland of Beaver Bay, a member of Eames’ 1865 expedition, was impressed with what he saw at the eastern end of the Mesabi. He approached Ontonagon and Duluth friends, who formed a syndicate in 1870 to explore the area, and perhaps acquire land. Syndicate member Peter Mitchell searched the area, gathered samples, and dug test pits. In 1872, the group bought up 9,000 acres of land near present Babbitt. In 1875, they incorporated the Duluth & Iron Range Railroad Company to transport the ore they
expected to find, but they failed to follow through on their scheme. Ultimately, the Minnesota Iron Company’s Charlemagne Tower gained control of the railroad’s charter and its land grants. Syndicate members then formed the Mesaba Iron Company in 1882 to develop their properties, but nothing came of it, and they eventually sold off their lands.\textsuperscript{21}

The Lewis Merritt family of Duluth began searching northern Minnesota for minerals in 1888, after one of the family’s seven brothers stumbled onto iron deposits near present Mountain Iron. They conducted systematic searches from the Canadian border to Grand Rapids on the Mississippi River, charting surface formations and recording places of magnetic attraction using compasses with dip-needles. Based on their observations, the Merritts acquired mineral lands through purchases and leasing. After four years, they had mapped out 500 square miles of Itasca, Cook, Lake, and St. Louis counties. They began excavating test pits at the most promising locations. On November 16, 1890, the Merritts’ crew encountered the first body of soft ore on the Mesabi Range at present Mountain Iron.\textsuperscript{22} John E. Merritt recalled the discovery:

\begin{quote}
I remember just how beautiful that ore was, glinting blue there under the deep green of the pines. But I am unable to describe to you just what this No. 1 pit meant to us. It was a dream come true, the fulfillment of a hope long deferred, an urge to greater effort, a satisfying fact that nature had yielded to us the great secret she had guarded through all the ages.\textsuperscript{23}
\end{quote}

Shortly thereafter, the Merritts found ore at Biwabik, McKinley, and other nearby locations, while other parties were making their own discoveries. Frank Hibbing searched farther west and found a rich ore body. He leased several large tracts and incorporated the Lake Superior Iron Company. The holdings of this firm later included the Hull, Rust, Mahoning, Burt, and Sellers Mines, which were eventually combined into the world’s largest open-pit mine. The town which later bore Hibbing’s name was called the “Iron Capitol of the World”. In 1891, Hibbing discovered ore ten miles to the north and east, in what is now Chisholm.

Town were founded all over the Range as new discoveries brought more mines, more companies, and more men into the region. Mesaba
Station, Mountain Iron, Hibbing, and Biwabik were the first towns. Virginia was laid out in 1892, twenty miles east of Hibbing. It quickly earned the title of "Queen City of the Range." It was later to serve as headquarters for the Virginia & Rainy Lake Lumber Company, which ranked for a time as the world's largest white pine mill. Eveleth was platted in 1893 four miles south of Virginia. Author David Walker observed that:

In the first three years of the 1890s the major communities and many of the significant Mesabi mines were located through the efforts of hundreds of individuals. Capital had been raised, often within Minnesota, to finance exploration and begin mining operations, and the people who would make the region one of the most ethnically diverse in the United States had begun to arrive.

Faced with the problem of getting their Mesabi ore to market, the Merritts tried to convince existing Duluth railroads to build a branch to the Range, but they were met with disinterest. In February, 1891 the Merritts incorporated the Duluth, Missabe & Northern Railway Company. They worked out an agreement with the Duluth & Winnipeg Railroad to haul their ore from Stony Brook Junction (Brookston) to Duluth, and made plans to lay D.M. & N. tracks from the Junction to the mines, a distance of 48.5 miles. According to the ten-year pact, D. & W. would "furnish and maintain at its own cost ... all necessary terminal facilities on Lake Superior ... including sufficient and suitable docks for the cheap and convenient handling of the iron." A usable portion of the dock was to be available by August 1, 1892. D. & W. chose a dock site in Superior rather than at Duluth.

Before construction of the railroad began, the Merritts signed an agreement to lease their Biwabik property to Sharon (Pennsylvania) steelmaker Peter Kimberly, who agreed to mine at least 300,000 tons of ore annually at a royalty of fifty cents per ton. Three months later, the Missabe Mountain Mine near Virginia was leased to Henry W. Oliver of Pittsburgh. Oliver agreed to mine a minimum of 200,000 tons in 1893, and 400,000 tons thereafter, for a sixty-five cent per ton royalty. He organized the Oliver Iron Mining Company in September, 1892 to undertake the project.
The railroad connections between Allouez Bay and the mines were completed in October 1892. On October 18, a special D.M. & N. train with one ore car made the trip down the gentle grade to Duluth with the first Mesabi ore. The Duluth Evening Herald recorded its lading as "twenty tons of dark brownish purple soft ore ... which assays a trifle better than sixty-five percent iron ... consigned to Leonidas Merritt." On November 11, the first cars crossed onto the new dock at Allouez Bay and dumped 198 tons of ore into the waiting Barge 102. The dock was only partially complete at the time.27

By the Fall of 1892, the Merritts’ Duluth, Missabe & Northern Railroad served almost all the working mines on the Mesabi Range. The Merritts were anxious to bring the greatest benefits of their success to the Duluth side of the harbor, as had always been their intent. Lon and Alfred Merritt sought financial support from Charles Wetmore of New York City, an associate of John D. Rockefeller, and vice-president of the American Steel Barge Company.28

Wetmore proposed that the Barge Company assist the Merritts in raising capital in exchange for the exclusive right to transport the Merritt’s Mesabi ores for a period of fifteen years. Lon Merritt signed the agreement with Wetmore on December 24, 1892. With new capital, construction of the rail lines and ore docks began early in 1893. The whole complex was ready for use by July of that year. The 2,304-foot dock, largest on the Lakes, received its first ore on July 22.29

1893 began as a banner year for the Merritt interests. Their combined enterprises controlled 116.83 miles of rail lines, as well as magnificent new loading facilities, eighteen brand new locomotives, and 1,318 rail cars. During 1893, the D.M. & N. Railroad hauled more than 500,000 tons of ore. The business of the Mesabi grew rapidly, necessitating repeated expansion of port facilities. Additional ore docks were built in 1896, 1899, and 1908 at Duluth, and in 1899 and 1902 at Superior. By the end of 1893, however, the Merritts suffered terrible losses due to the unforeseen financial panic which engulfed the nation.30

Business reversals and bank failures touched off the disastrous Panic of 1893, which brought widespread layoffs and plant closures.
The Merritts were badly overextended. Before the rail line and the
dock were completed, they found themselves unable to get credit to
purchase materials or to meet payrolls. According to one
historian: "That they built well is not to be disputed; that they
built too well may be argued; that they built too much too quickly
soon became apparent."\textsuperscript{31}

In December 1892, John D. Rockefeller bought $500,000 worth of D.M.
& N. Railroad bonds. In July of the following year, Lon Merritt
and Charles Wetmore approached Rockefeller for his direct support
of the troubled Mesabi enterprises. An agreement was concluded
whereby all of the Merritt-Wetmore properties were combined under
the Lake Superior Consolidated Iron Mines. Rockefeller put up
$2,000,000 to keep the enterprise in operation. As the depression
depthened, the Merritts tried unsuccessfully to raise more money.
With creditors pressing them on all sides, the brothers sought a
buyer for their shares in the Consolidation, turning reluctantly to
Rockefeller in December, 1893. They offered to sell him their
stocks at $40 per share. Rockefeller declined. In January, the
Merritts lowered their price to $10 per share. Rockefeller bought
them out for $900,000.\textsuperscript{32}

Rockefeller's aide, Frederick T. Gates, said:

The Merritts weathered the storm of '93, but in January,
1894, their Minnesota creditors, not Mr. Rockefeller,
forced the Merritts to sell their holdings to whomsoever
would pay the most money for them. It so happened that
Mr. Rockefeller, having some knowledge of the Missabe
Range and believing in its future value, was willing to
pay more for the Merritt stocks than anyone else. For
that reason alone, after offering their stocks widely to
capitalists and iron magnates, the Merritts sold their
holdings to Mr. Rockefeller.\textsuperscript{33}

A more sympathetic author asked:

When the Merritt brothers, some of them, sold their
Consolidated stock to Rockefeller in January, 1894, what
did it bring? ...Wasn't it all of $900,000? Yet the
value of their ore properties...might be reasonably
United States Department of the Interior  
National Park Service  

National Register of Historic Places  
Continuation Sheet  

Section number E  
Page 27  

estimated at three hundred and thirty-three millions of dollars...34

In 1896, Rockefeller leased all of his Lake Superior Consolidated Iron Mines properties to the Carnegie Steel Company. Before that, however, Rockefeller had begun improvements. The rail lines were overhauled and improved, and a second dock was built at Duluth in 1896. By 1899 D.M. & N. was short of dock capacity again, and a third dock, larger than either of the two earlier ones, was built. In 1899, the Great Northern Railroad acquired a line to the Mesabi Range. They also bought the old Duluth & Winnipeg docks on Allouez Bay in Superior. A second large dock was added there that same year. Great Northern became a major Mesabi carrier. Numerous other changes were made to the mines, railroads, and docks between 1896 and 1901, resulting in greater efficiency and economy.35 Mesabi productivity grew from 436,938 tons in 1893 to 1,994,868 tons in 1896, reaching 3,888,941 tons at the turn of the century. By 1900, tonnage from the Vermilion mines was 4,014,375. Within two years, however, the Mesabi would surpass the Vermilion in output and rank as the world’s largest ore producer.

During the early days of the Mesabi’s development, its ore was hauled in wooden freighters with consort-barges, or in the novel steel "whalebacks" built at West Superior, Wisconsin. These ships measured about 300 feet in length and could carry approximately 4,000 tons of cargo. Development of the Mesabi Range occurred concurrent with dramatic changes in shipbuilding technology. By the turn of the century most new ships were steel 500-footers. The introduction of larger vessels revolutionized the carrying trades and made it possible to haul bulk cargoes at a fraction of the old rates. This contributed to the primacy of Lake Superior’s mines, which by 1900 produced seventy-five percent of America’s iron ore.

The methods of handling ore also changed. When the Minnesota ranges first opened up, "gravity-style" loading docks had proven their utility, and were in general use. They superseded older, more labor-intensive methods of loading ships. Unloading (on the lower Lakes) was accomplished with steam-powered Brown hoists during the 1880s and early 1890s, but these required large gangs of dock workers to shovel the ore into the hoist’s big buckets. Brown improved on the original designs, adopting a clamshell rig that could remove about ninety percent of the cargo mechanically. In
1899, George H. Hulett introduced a new unloader at Conneaut, Ohio, which could remove almost all the ore quickly and without manual labor. Each Hulett rig could unload more than 1,000 tons per hour. Another economical feature of the Lake Superior iron ore trade was its ability to bring coal through the Lakes from Ohio ports on return trips. This made it possible to underwrite some of the costs of ore transportation. The first coal was shipped to the Head of the Lakes in the late 1870s. By 1887, the tonnage reached 1,000,000 tons annually. In the 1920s, coal receipts topped 12,000,000 tons per year, but then they began a slow decline until stopped entirely in the 1960s. Nevertheless, for many decades the coal market proved profitable for ore shippers.

In 1897, Rockefeller organized the Bessemer Steamship Company to carry ore from the Mesabi (Consolidated) and Vermilion mines in which he held interests. He began to build modern ships of the largest dimension, and contracted to carry Carnegie’s ore as well as his own. In 1898, Henry Oliver, in cooperation with Andrew Carnegie, organized the Pittsburgh Steamship Company and built five large steel ore carriers to free them from dependence on Rockefeller’s ships. By 1899, their fleet included eleven steamships and two tugs. They also had six more steamers under construction. Rockefeller’s shipbuilding program was equally ambitious. In 1899, his Bessemer fleet included ten modern steamers and twelve steel barges. More were also building for that fleet. The rival Minnesota Iron Company, with its holdings on the Vermilion Range, had organized the Minnesota Steamship Company in 1887. By 1899, they owned nine steamers and seven consort-barges, though all were much smaller than the modern Bessemer and Pittsburgh ships. Competition grew between the industrial giants.

The Cuyuna Range

Iron ore was suspected in Aitkin and Crow Wing counties as early as the 1830s. Crow Wing lumberman Cuyler Adams mapped out magnetic deflections to locate iron, in the late 1880s, but he was unable to interest backers due to the relatively low quality of the ore (twenty-thirty percent iron) and the difficulty of transporting it. Adams formed the Orelands Mining Company in 1903. He leased land near Rabbit Lake in 1907 to the Rogers Brown Ore Company, which began mining operations at what became the Kennedy Mine. By the Fall of 1908, there were thirty-four different parties with
interests in the new Range. Land values soared. The Cuyuna Range proved to be sixty-eight miles long, with different ore types than the Vermilion and Mesabi Ranges. Most of the Cuyuna ore was sandy, containing twenty to thirty percent manganese. Most of the ore was buried under glacial drift from a few feet to 150 feet in depth. Unlike the ores of the Vermilion and Mesabi Ranges, Cuyuna ore required washing or concentrating at the mine sites before it could be shipped.

The nearest rail link to the Range was at Deerwood, where the Northern Pacific passed about six miles from the mine. The Soo Line was built from Deerwood to Cuyuna, Crosby, and Ironton in 1910. New ore docks were built on the Bay at Superior in 1913 for Cuyuna ore. Northern Pacific built rail lines into the Cuyuna in 1912. From a single mine, Cuyuna tonnage totalled 147,649 in 1911. By 1920, there were twenty-nine mines on the Cuyuna Range, producing 2,191,528 tons. During World War II the United States was unable to obtain manganese ore from traditional sources in Russia and India. The demand for Cuyuna ore increased sharply during the next decades. Following a record 3,714,000 tons in 1953, Cuyuna production dropped. Mining ceased by 1977. Cuyuna ore was shipped from the Soo Line docks on St. Louis Bay in Superior, and from the Northern Pacific’s docks on Superior Bay at the other end of town.
LOADING DOCKS HANDLING MINNESOTA ORES, 1884-1982

TWO HARBORS, MINNESOTA

1884 D & IR Dock 2; Dismantled 1912
1885 D & IR Dock 1; Dismantled 1910
1892 D & IR Dock 3; Dismantled 1915 1893 D & IR Dock 4;
    Rebuilt 1902, Dismantled 1915
1896 D & IR Dock 5; Dismantled 1915
1908 D & IR Dock 6; Rebuilt 1924, later DM & IR, in use
1912 D & IR Dock 1, Later DM & IR; rebuilt 1978, in use
1916 D & IR Dock 2, Later DM & IR; in use

SUPERIOR, WISCONSIN

1892 D & W Dock 1; Reblt 1896, 1906, dism. 1925
1899 D & W Dock 2; Rebuilt 1909, dismantled 1922
1902 Great Northern Dock 1; Rebuilt 1921, dism 1969
1911 Great Northern Dock 4, later BN; in use
1912 Soo Line Dock; Rebuilt 1918, dismantled 1931
1913 NP Dock 1; Rebuilt 1917, 1926, partly dism. 1982
1922 Great Northern Dock 2; rebuilt 1928, in use
1928 Great Northern Dock 3; in use 1978 Burlington
    Northern Taconite dock; in use

DULUTH, MINNESOTA

1893 DM & N Dock 1; dismantled 1913
1896 DM & N Dock 2; rebuilt 1905, dismantled 1916
1899 DM & N Dock 3; extended 1905, dismantled 1919
1908 DM & N Dock 4; dismantled 1927
1918 DM & N Dock 5, later DM & IR; in use
1918 DM & N Dock 6, later DM & IR; reblt 1982, in use
1967 DM & IR Lakehead Taconite Facility; in use

SILVER BAY, MINNESOTA

1956 Reserve Mining Company Taconite Dock, later Cyprus
    Minerals; in use

TACONITE HARBOR, MINNESOTA

1958 Erie Mining Company Taconite Dock; in use
United States Steel Corporation

At the turn of the century, a few large corporations dominated the American steel business. The top three producers were Carnegie Steel, Federal Steel, and National Steel. Two of these three firms also dominated Minnesota mines.

The Carnegie-Rockefeller Lake Superior Consolidated Iron Mine Company had thirty-four working mines, including eight on the Mesabi Range and four on the Vermilion. The others were on the Marquette, Gogebic, and Menominee Ranges in Michigan. The company also controlled the Duluth, Missabe & Northern Railroad and its loading docks at Duluth. H.H. Porter’s Minnesota Iron Company dominated the Vermilion Range and controlled three mines on the Mesabi. It also operated the Duluth & Iron Range Railway along with its facilities at Two Harbors. Minnesota Iron was bought out by Illinois Steel in 1896. It was reorganized as Federal Steel two years later and financed by banker J. Pierpont Morgan.

The twentieth century brought recovery from the 1893 Panic. Markets for iron ore were stimulated, heating up competition between steel makers. J.P. Morgan held investments in several steel companies. He perceived that increased competition would ruin some of them. Therefore, he planned a colossal merger. Morgan bought out Carnegie’s holdings for $492,000,000. Then he purchased Rockefeller’s Lake Superior Consolidated Iron Mines, the D.M. & N. Railroad and the Bessemer Steamship Company, for $8,500,000 in cash and $80,000,000 in stock in the newly formed consolidation, United States Steel. In exchange for securities in the Corporation, Morgan eventually gained control not only of the Carnegie and Rockefeller operations, but also of Federal Steel, National Steel, American Bridge, American Sheet Steel, American Steel Hoop, American Steel & Wire, American Tin Plate, National Tube, and the Oliver Iron Mining Company. The assets of the Corporation included seventy-eight blast furnaces and rolling mills, vast holdings of iron ore, coal, and limestone, over 1,000 miles of railroad, and a Great Lakes fleet of 112 ships. With the capacity to produce 7,400,000 tons of finished steel annually, the "Steel Trust" controlled three-fifths of the nation’s steel business.40
One firm which was not bought out by J.P. Morgan was James J. Hill’s Great Northern Iron Ore Properties. Hill controlled 39,000 acres of land on the Mesabi Range, valued (in 1907) at $100,000,000. United States Steel regarded Hill as a formidable rival, since his ore holdings were almost as extensive as the Corporation’s. U. S. Steel leased Hill’s properties in 1907 to gain control over his ore, paying royalties more than twice as high as on other leases. Great Northern became a major iron ore carrier, second only to the D.M. & N.

The two mining railroads, Merritt’s Duluth, Missabe & Northern, and Tower’s Duluth & Iron Range, were both prosperous at the time of the merger. In 1901, the D.M. & N. controlled seventy-two miles of track between Duluth and Mountain Iron, with another fifty miles of spurs, as well as a sorting yard at Proctor, three large ore docks at Duluth, thirty-seven locomotives, and 3,877 rail cars. The D. & I.R. owned sixty-eight miles of track between Two Harbors and Tower, as well as the twenty-six-mile line to Duluth, a twenty-one-mile link to Ely, and thirty additional miles of track to various Mesabi locations. The company also owned five docks at Two Harbors, seventy locomotives, and 3,635 rail cars. U.S. Steel did not consolidate the two railroads until 1938, though significant improvements were implemented immediately, including laying heavier track in selected sections, and replacing wooden docks with larger ones of concrete and steel. U.S. Steel’s Pittsburgh Steamship Company fleet was upgraded with the sale of some of the older and smaller carriers and construction of newer, larger ships. The firm began with 112 ships acquired from eight different predecessors in 1901. Over the next ten years, four vessels were lost, twenty-six were sold, while twenty-one were built or purchased. Between 1911 and 1920 three ships were lost, eighteen sold, and eighteen built or acquired. The fleet never included a wooden ship.

With its enormous capital (authorized at $1,404,000,000) and extensive resources, United States Steel brought a high level of efficiency to the management of its Minnesota mining operations, and to the steel industry in general. Productivity increased dramatically as mining, rail transport, loading, shipping equipment, and milling operations were upgraded.
The Heyday of Minnesota Iron Ore Production

During the 1890s, Minnesota ore production reached 43,000,000 tons. Between 1900 and 1910, tonnage soared to 208,600,000, nearly five times that of the previous decade. From ports on Lake Superior and northern Lake Michigan, iron ore was transported on Great Lakes bulk carriers to Lake Erie ports, as well as to South Chicago, Illinois and Gary, Indiana on Lake Michigan. In 1910, iron ore comprised approximately one half of all bulk cargoes shipped on the Great Lakes. 39 Vermilion Range output totalled 19,500,000 tons. The Cuyuna had not yet come into production. After the turn of the century, Mesabi production surpassed the Vermilion. Vermilion tonnage averaged 8,000,000 tons annually through the 1930s, then climbed during the wartime years to 17,000,000 tons. Mesabi production rose to more than 20,000,000 tons annually during World War I, and again in World War II, though it dropped to a fraction of that figure in the inter-war years. The two World Wars created enormous demands for steel for shipbuilding, munitions, and industrial expansion in the United States and Allied nations. During the war years, the Twin Ports expedited methods of cargo handling. In one 72-hour period, seventy-seven vessels loaded at Duluth and Superior docks. Since World War II, demand has remained high, though the supply of ore has decreased. Mesabi output continues at approximately 20,000,000 tons per year. Vermilion production dropped steadily after a 1953 peak. The last Vermilion ore was shipped in 1963. Cuyuna production never attained the levels of the other Minnesota ranges. It averaged 1,000,000 to 3,500,000 tons until mining ended in the mid-1970s. Korean War production in 1953 consumed 21,500,000 tons of Vermilion ore, 28,000,000 tons of Mesabi ore and 3,700,000 tons of Cuyuna ore. 44

Beneficiation of Ores

The demands of the wartime years led to eventual exhaustion of Lake Superior’s richest iron ore reserves by the mid-1950s, although there remained enormous quantities of leaner ores which had not yet been tapped. As early as 1907, a beneficiation plant was built at Trout Lake on the western Mesabi Range for washing and concentrating low-grade sandy ores. In 1913, Professor Edward Davis of the University of Minnesota’s Mines Experiment Station began developing techniques to extract iron from the hard taconite
rock which covered much of the northern part of the state. By 1952, there were 68 beneficiation plants in Minnesota for crushing, washing, screening, and otherwise improving the quality of the ore. In 1946, the Reserve Mining Company developed a taconite mine at Babbitt and a processing plant at Silver Bay on the North Shore, utilizing Professor Davis' patented technique. A town was laid out for the company's employees. The plant began shipping concentrated taconite pellets in April 1956. Most of the pellets were shipped out of Duluth-Superior and Two Harbors, but Silver Bay developed quickly as a major shipment point. A second port facility was built north of Silver bay at Taconite Harbor in 1957.45 By 1970, only 34,000,000 tons of the 54,000,000 tons of taconite produced in Minnesota passed through the Twin Ports.

In 1965, processed taconite constituted one-fourth of the iron ore consumed in the U.S. and Canada. It soon became impractical to mine or ship the older high-grade ore, because the taconite proved so economical and so uniform. In 1967, taconite shipments surpassed those of natural ores. By 1979, there were eight taconite plants operating or under construction across northern Minnesota. Several of the existing ore docks were being modified to load the new pellets. The supply of processed taconite is expected to satisfy the needs of American industry for many generations to come.

Through 1977, total United States output of iron ore was calculated at 5,400,000,000 tons. Mesabi's output amounted to 3,000,000,000 tons, or fifty-eight percent of the whole.

ASSOCIATED PROPERTIES

Not surprisingly, the iron ore business has resulted in numerous archaeological resources, both on land and in the waters of Lake Superior. From the earliest days of the Vermilion Range's production, accidents have occurred along the North Shore of Lake Superior, although the majority of the ships involved were recovered and returned to service. The tragic storm of November 1905 claimed seventy-eight lives and disabled or destroyed eighteen ships, primarily at the western end of Lake Superior. Several of these ships were never salvaged; at least one was never found.
Most of those craft were iron ore carriers, although nearly all were in ballast at the time of their loss.

The earliest Minnesota wreck connected with iron mining was the sixty-five-foot schooner CHARLEY, owned by the Wielands of Beaver Bay. Although the schooner was not engaged in the ore business, her owners were among the first Minnesota residents to purchase lands for mineral rights. The schooner wrecked at Beaver Bay on May 10, 1881. The small schooner CRISS GROVER was well known in Lake Superior mining towns as a "powder boat." Although she carried blasting powder regularly, the CRISS GROVER was enroute to Duluth for lumber when she was lost near Split Rock on October 24, 1899. The larger, 200-foot schooner S.P. ELY wrecked at Two Harbors on October 29, 1896, while entering port to take on ore. Her wreckage still lies where she struck the west pier during a storm. The steel whaleback steamer THOMAS WILSON sank in a collision outside of Duluth harbor on June 9, 1902. She lies with her holds full of Mesabi ore in seventy feet of water. The wooden freighter HESPER, battered in a storm, sank north of Beaver Bay (at present day Silver Bay) on May 3, 1905 while she was enroute to Two Harbors for a cargo of ore.

The storm of November 1905 drove several large steel steamers ashore in Minnesota waters. Most were ore-carriers. The steamer MATAAFA wrecked on Duluth's North Pier early in the afternoon of November 29, taking nine men to their deaths. The MATAAFA was salvaged the following spring and survived for another sixty-six years. The 500-foot steamers LAFAYETTE, CRESCENT CITY, and WILLIAM EDENBORN all wrecked along the North Shore, along with the steel barges MADIERA and MANILA. LAFAYETTE and MADIERA were total losses. LAFAYETTE left most of her hull at Encampment Island. MADEIRA lies scattered around Gold Rock. The other vessels were laboriously salvaged. The wooden barge AMBOY was lost in the same storm at Thomasville. Though was engaged in the ore business, AMBOY carried an upbound cargo of coal when she wrecked.

The last total loss of an ore-trade vessel was the April 28, 1914 foundering of the 240-foot BENJAMIN NOBLE. The NOBLE was not an ore carrier, but she was hauling steel rails for the Great Northern Railroad when she plunged unexpectedly to the bottom. Her entire crew of twenty men went with her. More recent accidents have
involved ore freighters, but none resulted in the total loss of the vessel.”

FOOTNOTES


4. Blegen, Minnesota, 361.

5. Blegen, Minnesota, 362.


10. Duluth Daily Tribune, June 12, 1883.

11. Duluth Daily Tribune, June 2, 1883.

13. King, The Missabe Road, 19. Gravity docks evolved on the Hudson River and were adopted on the Great Lakes at Marquette in 1859. They employed an elevated trestle on the dock, where rail cars were dumped, and the bulk cargo was stored in large bins or "pockets". When a ship was properly positioned alongside the dock, the cargo was poured into the vessel's deck hatches through spouts.

14. King, The Missabe Road, 26; Van Brunt, Duluth, 362. The HECLA was a 230-foot wooden freighter, and her consort or tow was the 190-foot schooner-barge IRONTON. From the mid-1860s until the turn of the century, it was common for most steam freighters to tow one, two, or even three barges behind.

15. Walker, Iron Frontier, 59-61, 64.


18. Walker, Iron Frontier, 17. The Owens surveys were conducted by Dr. J.G. Norwood. They appear to be the first to record Mesabi ore.


20. Van Brunt, Duluth, 354.


25. Walker, Iron Frontier, 100. The Duluth & Winnipeg was attracted by the Superior Consolidated Land Company, which offered to provide the space on Allouez Bay along with a twelve-mile rail line to the Minnesota state line and a bridge across the St. Louis River. The D & W agreed to build the ore dock themselves in exchange for all of the generous incentives. The resultant dock extended 1,000 feet into the Bay, with one hundred 180-ton pockets and thirty-foot loading chutes.

26. These contracts demonstrated the salability of Merritt ore; they were doubly important because of Oliver's ties with Carnegie and Henry C. Frick, who toured the Mesabi later that year (Duluth Daily News, September 7, 1892).

27. King, The Missabe Road, 49.

28. Van Brunt, Duluth, 401. The American Steel Barge Company was formed by Duluth inventor Capt. Alexander McDougall in 1890 to build and manage his famous "whaleback" ships. Rockefeller was a major shareholder in the firm, and several of his close associates were on the Board.

29. King, The Missabe Road, 52; Walker, Iron Frontier, 117.


31. King, The Missabe Road, 55.

32. Walker, Iron Frontier, 170-181. Rockefeller offered the Merritts an option to repurchase 55,000 of the 90,000 Consolidated shares within one year at $10, plus 6 percent interest.


35. King, *The Missabe Road*, 57-66, 198; see also Walker, *Iron Frontier*, 131ff, for good description of improvements to mining technology at the turn of the century.


37. Castle, *Minnesota*, 411; *Great Lakes Register*, 1899, (Cleveland: Great Lakes Register, 1899); Walker and Hall, *Duluth-Superior*, 78-79.


41. Blegen, *Minnesota*, 372; King, *The Missabe Road*, 198-199; Van Brunt, *Duluth*, 413. The Hill royalties started at .85 per ton and accelerated to $1.12. U.S. Steel removed more than 26,000,000 tons from the Hill mines before the contract was cancelled in 1915, paying out $45,000,000 in royalties.


CONTEXT 4: NORTHERN MINNESOTA LUMBERING (1870-1930s)

Thick forests of pine, fir, spruce, cedar, birch and aspen covered much of what is now northern Minnesota when the first Europeans arrived. Many years would pass before the forests were commercially exploited, despite the thriving lumber market in New England. Minnesota’s woods were too far removed from the major markets to tap them until several factors combined around 1890. The westward flow of migration and settlement, the exhaustion of Michigan’s forest resources, and the comparative wealth of Minnesota’s forests, finally led to the development of the region as the world’s greatest producer of forest products, at least for a while.¹

When the LaPointe Treaty opened northern Minnesota to white settlement in 1854, speculators and investors were initially attracted by rumors of copper and gold deposits. The Sault Locks which were under construction at the lower end of Lake Superior also promoted Lake Superior settlement. Speculators pre-empted claims at convenient locations. Townsites were platted all the way from the Canadian border to the Head of the Lake at present-day Duluth. While some of these settlements did succeed, the rich minerals never materialized, and the Panic of 1857 led to the abandonment of most claims. Some settlements had small sawmills to support local construction needs. Like the townsites, most of the mills shut down and disappeared after just a few years.²

At Oneota (Duluth), Superior City, and Beaver Bay, the sawmills found a growing market for their products. In the early 1860s they began shipping lumber to other towns on the Lake, such as LaPointe, Copper Harbor and Marquette. The industry still basically operated on a subsistence level, supplying purely local needs.³

During the Civil War period, at least one local mill was shipping lumber to Cleveland. Marquette, Michigan suffered a disastrous fire in June of 1868 which created a large demand for lumber.³ Construction of the Lake Superior & Mississippi Railroad in 1869 and 1870 also spurred the market.

By 1874 there were three steam sawmills, a planing mill, and a sash factory in Superior, as well as three steam mills and two planing mills in Duluth, and a water-powered mill at Beaver Bay.⁴ Southern
needs were supplied by Minnesota pineries around Stillwater, St. Anthony’s Falls, St. Croix, and Winona. Settlement of the Red River Valley, and concurrent building of the Northern Pacific Railroad to that region in the early 1870s, created a new market for northern Minnesota lumber. As a result, eleven mills were operating in Duluth and Superior by 1883, grouped largely on Rice’s Point and Connors’ Point inside the harbor. Construction of the numerous grain elevators in Duluth during the early 1880s required enormous quantities of lumber. Logs were rafted to the mills from the Nemadji and St. Louis Rivers, and from several nearby Lake Superior streams. The cut of the Duluth district for 1886 was 160,000,000 feet of lumber, of which one-third was cut in the mills.  

By 1880, Michigan’s lumber industry had logged off most of the white pine in the Saginaw, Muskegon, and Manistee valleys of the lower peninsula. Some of the largest operators bought timber lands in the upper peninsula, and in Wisconsin and Minnesota. They moved to Grand Marais, Marquette (Michigan), and Ashland (Wisconsin). By 1890, huge new mills were built in Superior and Duluth. Between 1885 and 1890, the total cut for Twin Ports’ mills increased fifteen-fold.

With the arrival in Duluth of such major firms as Mitchell, McClure & Company and Merrill & Ring, some significant changes developed. The bulk of Duluth’s shipments were no longer sent to the western markets by rail. They were shipped down the Lakes in steam barges with tows to Chicago, Buffalo, and Tonawanda, New York. The inglorious little steam barges ("lumber hookers") often towing three or four lumber-laden barges across the treacherous lakes at six to eight miles an hour, were ripe for disaster from storms, fogs or collisions.

In 1894, fifteen lumber mills were in operation in Duluth with 3,700 employees. Seventeen mills operated in Superior, employing 4,000 individuals. Duluth’s cut that year exceeded 220,000,000 feet of lumber, and Minnesota ranked third in the nation for lumber production.

By the late 1890s, most of the pine lumber along Lake Superior’s south shore had already been harvested. The industry turned its’ attention to the north shore. There, the logging was more difficult
due to the height of the land, the deep gorges, and the frequent rapids and waterfalls. Firms operating on the north shore built railroads into the woods to get their logs down to the Lake. Then the logs were rafted down to the mills in Duluth. Before long, the north shore was criss-crossed with railroad lines.

Mitchell & McClure began rafting out of Castle Danger in 1890. The Schroeder Lumber Company of Ashland started shipping rafts from Cross River in 1892. Alger, Smith & Company built their headquarters at Knife River in 1898, extending their rail lines almost 100 miles into the woods. They rafted logs from Knife River and Pigeon River to Duluth until 1919. Merrill & Ring organized the Split Rock Lumber Company in 1899 to raft logs from the Split Rock River to Duluth. The estate of Thomas Nestor shipped huge rafts from Gooseberry River to Ashland (Wisconsin) and Baraga (Michigan) from 1900 until 1909. Many logs were brought to the mills entirely by rail, since the Duluth, Missabe & Northern, and the Duluth & Iron Range railroads, had direct links with much of northern Minnesota's woods. In 1902, 150 carloads of logs rolled into Duluth daily on the D. & I.R. alone.

The turn of the century marked the peak of Duluth's lumber industry. For a short time the harbor ranked as the world's greatest lumbering market. In 1899, a record 940,000 tons of forest products (462,000,000 feet) left the port. Mitchell & McClure cut 54,000,000 feet. Merrill & Ring cut 51,000,000. Such an intensive cut rate could not be sustained for long. The industry began a steady decline after 1900 due to depletion of the forests, increased transportation costs, and growing competition from the Pacific coast and southern lumber industries.  

Although the industry had begun to decline, the first years of the twentieth century were the busiest ever for the north shore. Duluth's production averaged more than 400,000,000 feet annually until 1906. The north shore district produced a record one billion feet in 1902. The cut declined after that, dropping to 12,000,000 feet by 1924. The total volume of lumber shipped from Duluth between 1891 and 1924 was 7,722,452,000 feet, valued at $129,285,842. In 1925 only one lumber mill remained in operation in Duluth, although lumber products continued to be shipped out of the harbor.
through World War II. Until the 1940s, pulpwood was cut for the paper industry at several north shore locations and rafted from the Gooseberry, Red Cliff, and Pigeon Rivers, Chicago Bay, and Sugar Loaf Landing to various mills. It is still shipped by rail and truck from all over the region.

ASSOCIATED PROPERTIES

There are a number of sites along the Minnesota North Shore where pilings and cribs from old loading docks, rafting sites, log flumes, and dams, may be preserved in Lake Superior’s cold waters. Many sites can be seen from the air. Others have been located by sport divers. The remains of a small dam has been reported at Stewart River. Cribs from the old Alger & Smith dock at Knife River are still intact. There are steel rails lying in forty or fifty feet of water off the Gooseberry River where they were once used to haul logs down to a rafting emporment. The lumber steamer BELLE P. CROSS is wrecked very near the same location. Hundreds of pilings from the mills on the St. Louis River can be seen at low water. The 285-foot pulpwood carrier HARRIET B. lies submerged off of Two Harbors. There are also several tugs, steamers, and barges from the lumber era burned or sunk at Oliver, Duluth, Lester River, Knife River, Colvill, and Taconite Harbor. The HARRIET B. is believed to be relatively intact. The BELLE P. CROSS was among the first of her kind.12

FOOTNOTES


7. "Steambarges" were small propeller-driven ships with open decks and powerful engines for towing. Most were 150 feet long or less and carried from 600,000 to 1,000,000 board feet of lumber. Grace Lee Nute, *Lake Superior*, (Indianapolis: The Bobbs-Merrill Company, 1944), p.206.


9. Minneapolis and Stillwater were the state’s biggest lumber producers until about 1890. Ryan, "Duluth Lumber Industry," 168; Walker & Hall, *Duluth-Superior*, 63.


CONTEXT 5: RAILROADS AND AGRICULTURAL DEVELOPMENT (1870-1940)

Though the climate and geography of the Lake Superior region are not conducive to agriculture, some of the world's greatest grain ports are located on Lake Superior's western shores. Duluth-Superior harbor ranked as America's greatest grain shipment port for many decades. It is still among the foremost. The port is only a trans-shipment point. The millions of bushels of grain handled there are grown far to the west in Minnesota, the Dakotas, and Montana.

From Lake Superior, the grain is shipped eastward to Buffalo and Erie. From Buffalo, the grain is moved via the Erie Canal to New York, or to Montreal by way of the Welland Canal and the St. Lawrence River.

When Minnesota's North Shore was opened to white settlement in 1854, a stable farm economy was already developing in the southern part of the state between the Minnesota and Mississippi Rivers. Some looked at the St. Louis River at the Head of the Lake and saw the potential for a great port. With the tide of migration across Illinois, Wisconsin, and Minnesota, they envisioned the movement of rich farm produce from warehouses to fleets of big ships docking at Duluth. The completion of the Sault Locks at the other end of Lake Superior promised to bring the ships of the world to Duluth's waterfront.¹

The Lake Superior & Mississippi Railroad was chartered at St. Paul in 1857, ostensibly to haul grain from southern Minnesota to the yet undeveloped port of Duluth, then down the Lakes. It was hoped that grain traffic could be attracted away from the rail routes running Minnesota's produce eastward through Chicago and Milwaukee. A land grant to the State of Minnesota in 1864 encouraged construction of a rail link between St. Paul and the Head of the Lakes. William L. Banning of St. Paul, Minnesota attracted Philadelphia financier Jay Cooke to the venture.

In 1866, Cooke invested in timber lands in northern Minnesota. In the next years, his Western Land Association acquired titles to 7,000 town lots around Duluth and 4,000 additional acres in the vicinity. Construction on the railroad began in 1867 at the southern end of the 160-mile line. Cooke erected great storage
elevators in St. Paul and Duluth and committed his resources to diverting grain shipments to the Lakes route through Duluth.²

The railroad was completed in August 1870. The "propeller" WINSLOW loaded the first wheat cargo from the railroad within the month. In October, the R.G. COBURN loaded the first wheat cargo from Duluth's newly-completed Elevator A. The port was on its way to wealth and success. Early Duluthian R.S. Munger recalled the exuberance of the day:

I left St. Paul, where I had been in business, in January 1869, and made the trip over the old military road in two days and three nights... At the time there were fourteen families in Duluth, and all gathered together in a little hamlet at the base of Minnesota Point... The Lake Superior and Mississippi Railroad was building toward Duluth, and I was satisfied that the place had a future. My judgement was verified by events; by the 4th of July, 1869, there were 3,500 people in the place, and still they were coming.³

In 1870, while the Lake Superior & Mississippi was still under construction, Cooke persuaded the Northern Pacific Railroad to build a line westward from Duluth to Moorhead. The new line guaranteed stable and permanent prosperity for the harbor and the infant community at the Head of the Lake. Ironically, the effort to attract southern Minnesota grain failed. Within five years, however, the Red River Valley had been settled and was producing the finest wheat in the United States. Duluth was well situated and would soon be properly equipped for transporting the wheat to market. Its' modern elevators with great storage capacity could load the largest ships on the Lakes speedily and economically.

In 1878, Canadian-born capitalist James J. Hill and others purchased the bonds of the bankrupt St. Paul & Pacific Railroad. They incorporated as the St. Paul, Minneapolis & Manitoba, and resumed railroad construction which had been halted by the Panic of 1873. By 1878, the St. Paul, Minneapolis & Manitoba had pushed across the Dakotas to Great Falls, Montana. By 1893 it reached Seattle, 1,816 miles from St. Paul. It was renamed the Great Northern Railroad in 1889. One historian summarized the real significance of railroad development:
The prosperity of railroads, as of the State, hinged on people. They opened lands, built towns, forwarded trade, and strengthened the economy. Railroads eased the conveyance of immigrants, gave jobs, sold land, conveyed goods to trading centers, carried products to markets, and helped people to keep in touch with the world they had left behind.

When the sixteen-foot-deep Weitzel lock was built at Sault Ste. Marie in 1881, channels at Duluth were deepened accordingly. Ships could now be loaded much deeper than before, resulting in greater operational efficiency and a decrease in freight rates. Duluth gained a strong advantage over rival Lake Michigan ports. During the early 1880s, scores of new, larger vessels were constructed at Lakes shipyards to haul grain from Duluth's docks.

By the end of 1885 Duluth had eleven large elevators. Another was under construction across the bay in Superior. Eleven major railroads had connections with the port. American farms in the Red River Valley produced more than 56,000,000 bushels of wheat. More than one-fourth of it passed directly through Duluth-Superior harbor. The Canadian Lakehead ports of Port William and Port Arthur were beginning their ascendency as well, following completion of the transcontinental Canadian Pacific Railway in 1885. By 1910, the Canadian ports surpassed Duluth-Superior harbor. In more recent years twice as much grain has been shipped from the Canadian ports as from the American ports. In 1891, Duluth operated thirteen elevators, and shipped 20,000,000 bushels of grain, mostly the famous hard spring wheat. Another ten elevators were in operation in Superior.

In 1880, the largest grain carriers on the Great Lakes were under 260 feet in length with the capacity for about 80,000 bushels of grain. Ten years later, 320-foot steel ships with 120,000 bushel capacity were beginning to appear. By the turn of the century, 500-foot steel giants had been developed with the capacity for up to 400,000 bushels. During that twenty-year period, the efficiency of waterborne transportation dramatically increased. Freight rates dropped by fifty percent.

Flour milling developed as a significant part of the harbor's commerce in 1889. By 1895, no fewer than eight mills were
operating in Superior, with two in Duluth. Railroad competition stiffened and tonnage dropped off after 1894. By the 1920s, shipments of flour from Twin Ports mills was negligible. 7

Grain production diminished somewhat at the turn of the century. By 1909, however, wheat shipments at Duluth-Superior rose to more than 54,000,000 bushels with a value of $55,200,000. Between 1919 and 1935, the United States and Canada (exclusive of Russia and China) shipped one-third of the world’s grain. Duluth-Superior harbor handled nearly twenty percent of all the grain that was shipped on the upper Lakes. By World War II, the Twin Ports operated twenty-five elevators with a combined storage capacity of 50,000,000 bushels. Just after the War, grain shipments set a record of 4,100,000 tons that would hold for the next thirty years.

In 1959, the St. Lawrence Seaway expanded U.S. grain markets overseas. Total shipments through the Seaway between 1959 and 1975 averaged 3,000,000 tons annually of which 38.5 percent went to international buyers. Expansion to foreign markets resulted in diversification of U.S. grain shipments. Barley, corn, and oats comprised forty-three percent of the record 9,800,000 tons (396,400,000 bushels) shipped from the Twin Ports in 1973. In 1940 those products had accounted for just four percent of grain shipments. A record 5,300,000 tons of wheat were shipped in 1940, of which 1,500,000 tons were destined for markets abroad, and 2,400,000 tons for Canada. 8

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<td>1980-1989</td>
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Presently, fourteen modern grain loading berths with ten different elevator systems operate in the Twin Ports. Annual shipments average 400,000,000 bushels (approximately 10,000,000 tons). Approximately twenty percent of the grain products arrive via trucks, while the remainder is still transported from the prairies by rail. The wheat is still largely produced in the Red River Valley, though the farms no longer grow wheat exclusively, as they did in the post Civil War years. Today, the crops show greater diversification and include sugar beets, potatoes, soybeans, flax and barley. The Twin Ports are expected to remain the grain capital of the American Great Lakes as well as one of the most important ports in the nation.¹⁰

ASSOCIATED PROPERTIES

Duluth is the only grain port on the Minnesota Lake Superior shore. There are no known terrestrial sites within this context, except at Duluth. No submerged components of historic grain docks are known at Duluth, with the single exception of portions of concrete and brick foundation work from historic Elevator A (1870), which lie along the shoreline at the foot of 4th Avenue East. The site has been disturbed by demolition and later use of the area as a scrap-yard. Distinctive yellow bricks easily identify the site. Only one shipwreck in Minnesota waters, the steamer ONOKO, is known to have been carrying grain at the time of its loss. The ONOKO has enormous historical significance beyond its association with the grain trade. The ONOKO was the first iron-built bulk freighter on the Great Lakes. It is prototypical of modern bulk carriers. The wreck of the ONOKO sank in 200 feet of water approximately six miles east of Knife River, in 1915. The ONOKO was built for the grain trade. She reportedly earned a fortune for her owners with her enormous capacity and efficiency. Relatively little is actually known about the technology and methods of the ship’s construction.¹¹

FOOTNOTES


4. Blegen, Minnesota, 300.


7. Walker & Hall, Duluth-Superior, 70.

8. Walker & Hall, Duluth-Superior, 72.


CONTEX 6: NORTH SHORE TOURISM AND RECREATION (1870-1945)

To the traveller...let me say a few words. Take a bark canoe, which two or three trials will make you at home in, for they are much easier to get the "hang" of than most persons suppose; go to the adjacent islands, run into the caverns and grottos which cannot be reached in any other way. If you are in pursuit of pleasure, whether lady or gentleman, you can find it in the Lake Superior region, provided you can be pleased with grand scenery, water-falls, lakes and mountains.¹

New York journalist John St. John wrote those words in 1846 after visiting the Head of the Lakes. Travel in those days was not for the timid, but during the next decades, dozens of others would venture forth, encouraging city-dwellers and hay-fever sufferers to discover the unspoiled grandeur of Lake Superior country.

When the Sault Locks were completed in 1855, at least a dozen of the finest steamboats on the Lakes began service to Lake Superior ports carrying passengers and freight. In the first year, 149 steamers passed through the locks, carrying 8,295 passengers and 5,690 tons of cargo.² Ships like the low-pressure, fast-sailing steamer ILLINOIS, with its "New and splendid upper cabin," made "Grand Pleasure Excursions" from Buffalo, Cleveland, Detroit, Collingwood (Ontario), and Chicago for "all the principal ports and landing places around the Lake on both the American and British coasts." Some lines (after 1870) went all the way down the St. Lawrence River to Montreal.

Besides the scenery, attractions at Duluth and the North Shore included agate hunting, tenting, "authentic Indian ceremonies", hunting, fishing, and carriage-tours. Travellers were offered a variety of gems and minerals, crafts, stereopticon views, and autographed photographs at "bargain prices". Few of the large steamers called at way-ports, but local boats ran up the North Shore, connecting tourists with hunting and fishing camps. Brook trout were caught in great numbers in the streams of the North Shore. A July 1855, Superior newspaper advertised "Mackinaw boats and bark canoes...provided with trusty crews, well acquainted with the North and South Shores and all the fishing points on the Lake," available "for Fishing and Pleasure parties."³
During the 1860s, passenger ships arrived at Duluth on an average of three per day. The number increased during the 1880s and 1890s, while the size and capacity of the ships also grew. The Anchor Line built three 235-foot iron passenger liners in 1871 for the Duluth route. Anchor Line steamers INDIA, CHINA, and JAPAN, earned the sobriquet of "the Triplets." A round trip fare in 1880 cost $26. In 1893, James J. Hill's Northern Steamship Company built the 385-foot ocean-style passenger steamers NORTH LAND and NORTH WEST. Fast and luxurious, they were also the Lakes' first ships employed exclusively for passenger service. In 1911, the peak year, 80,000 passengers travelled to Lake Superior. After 1920, the number of passenger cruise ships diminished with the advent of "motor-cars." Very few cruise ships were still in service after World War II. The last of those, the SOUTH AMERICAN, was retired after the 1966 season.  

Scores of small coastal steamers, excursion boats, and ferries ran along the North Shore, primarily out of Duluth and Port Arthur, after the mid-1870s. The Duluth Lake Transportation Company operated the steamers MANISTEE and METROPOLIS at the western end of the Lake during the 1870s and 1880s. Holt’s Line ran the DOVE and OSSIFRAGE to North Shore communities and Isle Royale. Singer’s White Line ran up the shore and to the Apostle Islands with the BON AMI and the MABEL BRADSHAW in the 1890s. Booth’s U.S. & Dominion Transportation Company operated several steamers connecting ports all the way to Sault Ste. Marie at the turn of the century. All these lines provided passenger service on the local level.

The North Shore resort industry developed from the small passenger service running out of Duluth. Fisherman Charlie Nelson built a second-story addition on his Lutsen home in 1893 to house his frequent guests: "during the last years of the 1890s many of the visitors began returning as paying guests. Before long the hotel income was rivaling the profits from his commercial fishing."  

Ole Brunes of Chicago Bay (Hovland) found himself entertaining so many sports fishermen that it became profitable to offer boarding. He added on to his house and later built small cabins. By the turn of the century, there were cabins at Lutsen, Hovland, and Grand Marais.
Completion of the North Shore highway coincided with the decline of commercial fishing in the late 1920s. All along the shore, impoverished fishermen built cabins and resorts during the late 1920s and early 1930s, as more and more midwestern Americans began touring in private automobiles. Gooseberry Falls State Park was developed by Civilian Conservation Corps personnel in the late 1920s. Split Rock Lighthouse became the nation’s most-visited lighthouse. The highway system facilitated access to Boundary Waters sites such as Kabetogama, Namakan, and Kettle Falls, where major resorts have thrived since the 1920s.6

Recreational boating followed quickly on the heels of North Shore tourism. Traditionally, canoes and small fishing skiffs (twelve to sixteen feet) have been the most commonly-used boats. Since the 1960s, however, larger powerboats and increasing numbers of sailboats are seen. A recent survey indicates that nearly half the boats employed on Lake Superior are sailboats with an average length of twenty-seven feet. The average powerboat is twenty-four feet long. Thirty-nine percent of the boats in the sample were owned in Duluth-Superior. Fourteen percent were owned in the Twin Cities.7

ASSOCIATED PROPERTIES

The only known shipwreck in Minnesota’s Lake Superior waters associated with the Tourism and Recreation context is the eighty-five-foot excursion steamer MARY MARTINI, which wrecked on Brule Point northeast of Grand Marais in December 1885.8 The ship was employed for several years as an excursion vessel, but may have been rebuilt for the coaching and fish collection trade by the time of her loss. The MARTINI was the first ship built by Bay City (Michigan) shipbuilder Frank W. Wheeler. Specific vessel associations under this context are unclear at this time. Several other coasting steamers were lost within the geographical limits of this study. They are discussed in the Settlement and Commercial Fishing context.

FOOTNOTES


INTRODUCTION

PROPERTY TYPES

Four property types have been defined for Lake Superior shipwrecks - Commercial Sailing Craft (1734-1930), Passenger and Package Freight Steamers (1816-1945), Bulk Freight Steamers (1865-1945), and Small Craft (1854-1945). Because there are relatively few shipwrecks in Minnesota waters of Lake Superior, most of the shipwrecks of all four property types are probably eligible for the National Register under one or more of the criteria for evaluation even if the structural integrity has been severely impacted. Because shipwrecks are unusual properties and share many attributes, a general discussion of registration requirements (criteria for evaluation and integrity) is presented here preceding specific discussions for each property type.

Criteria for Evaluation

For most shipwrecks, eligibility for inclusion on the National Register of Historic Places under Criterion A would be equal or secondary to eligibility under one or more of the other criteria, primarily C and D. For example, the wreck of a sailing vessel which might be considered significant under Criterion A through its role in furthering the fur trade, might be equally or more significant under Criterion D if it contained an extensive assemblage of fur trade-era artifactual material. The applicability of more than one criterion is most prevalent with regards to Criteria A and C. As variation in vessel construction was most often related to the nature of its intended service, shipwrecks which have significance through participation in broad patterns of trade might also exhibit design elements and fabrication techniques unique to that class of vessel.

Primary eligibility for shipwreck property types under Criterion A should be established within each individual nomination based upon the contexts established in this document, as well as historical data unique to the shipwreck under consideration. Shipwrecks, by nature, are associated with the events which caused their loss. Though many a vessel has been lost through isolated occurrence, Lake Superior is well-known for massive, disastrous storms which have caused numerous vessel losses and significantly impacted com-
merce and life in the area. A shipwreck might be eligible under
Criterion A through its association with a major storm if its loss
typified those that resulted from the storm and if it can be shown
that the loss of the vessel had a significant impact on socio-
economic, maritime, engineering, commercial, and/or safety issues.
Such an association should be fully developed within the individual
nomination, keeping in mind that it is not the storm itself which
has significance, but its impact.

As with Criterion A, a shipwreck’s association with a particular
individual is more likely to be a secondary factor with regards to
its significance. Primary eligibility under Criterion B might be
established for a vessel which was captained by an individual of
importance or for a craft (such as a pleasure boat) which was used
extensively by an individual of distinction. A shipwreck’s
association with an important historical figure must be established
within each individual nomination. It should be fully developed
within the contexts presented in this document and supported by
historical data sufficient to demonstrate a clear and direct link
between the vessel and the individual.

Criterion C is one of the two most commonly satisfied criteria for
establishing significance with regard to shipwrecks. A shipwreck
can be eligible under Criterion C if it is a representative example
of a craft of its type, either in an overall sense, or with regard
to a specific feature or component part, or if it exhibits
important evidence of shipbuilding and/or ship repair techniques
employed on the vessel. The availability of construction plans
for any particular vessel does not necessarily reduce its
significance, as deviations from original plans were fairly common
during construction, and modifications were frequently made to ship
structure and equipage during a vessel’s career. A vessel need not
retain its original design if the modification itself is
significant. In many cases, no plans are available for a vessel.
This is particularly true with early sailing ships and smaller
vessels.

Criterion C might also apply if a vessel or one of its component
parts is the product of a particularly important designer,
craftsman, or shipbuilder. A shipwreck’s eligibility under
Criterion C should be fully developed within each individual
nomination within the framework of the contexts presented in this
document. Its significance should be established, to the highest degree possible given the availability of supporting data, through an analysis of the vessel's design and construction within the context of the property type.

A shipwreck eligible under Criterion C may also be equally or more significant under Criterion D. A distinction is drawn when dealing with shipwrecks between the vessel itself and its artifactual record. Hence, a shipwreck which is the best typical example of its type, may also retain an artifactual assemblage sufficient to satisfy eligibility requirements under Criterion D.

Criterion D is the other of the two most commonly satisfied criteria in establishing significance with regard to shipwrecks. Shipwrecks eligible for inclusion on the National Register of Historic Places are frequently significant under one or more other criteria. Primary eligibility under Criterion D should be fully developed within each individual nomination, and should specifically address the historic and/or archaeological questions which are integral to the site under consideration. Issues which may apply to shipwrecks are the potential for extracting information on site formation processes and the impact of post-depositional activity within the framework of current maritime archaeological theory, the availability of data regarding contemporary shipwreck salvage techniques, and the presence of cultural materials relating to shipboard life, cargoes, etc., among others. The significance of the shipwreck with regard to these questions should be fully developed within the context of current thought and similar or related sites and/or sources of information.

Site Integrity

With regard to the seven aspects of integrity, unless they have been totally salvaged, shipwrecks in Lake Superior inherently retain aspects of location, setting, feeling, and association. Unless a vessel was extensively rebuilt prior to its sinking and that rebuilding lacks integrity in its own right, most shipwrecks retain integrity of materials and workmanship. Depending on the nature of the wreck event and the extent of post-depositional impacts, most Lake Superior shipwrecks also retain integrity of design (i.e., they are recognizable as a vessel of a particular type). Because of this, almost all Lake Superior shipwrecks that
are associated with historic contexts retain enough integrity to be eligible for the National Register under Criterion C.

The level of site integrity required to establish eligibility of an individual shipwreck will vary according to the Criterion applied and the particular conditions at that site. Hull integrity and intactness of the artifactual record should be addressed individually for each site, as applicable. A vessel need not be structurally intact in order to retain integrity. Under Criteria A and B, site integrity should be demonstrated to the level required to justify the association with the event, pattern, or individual. Under Criterion C, a shipwreck may be significant regardless of its condition, if it is the only example of its type. A shipwreck which is significant on the basis of a structural component or design element can be eligible so long as that component or feature is still present.

Shipwrecks are generally violent and destructive in nature, hence some degree of damage is to be expected at all shipwreck sites. The requirement of site integrity can be satisfied if the wreck retains the basic diagnostic elements of the hull (Criterion C) or if such information can be reconstructed through archaeological investigation (Criterion D). Basic diagnostic elements would include the bow and/or stern, elements of the midsection, upper and/or lower hull, fittings, rigging, etc. A shipwreck scattered into many pieces may retain integrity if the individual pieces retain integrity. From a design standpoint, the midships area is the most redundant area of a ship’s hull. Variation in hull form is more extensive in the bow and stern areas.

Similarly, the level of artifactual material required to establish site integrity will vary according to the specific research questions which apply to the site. Many shipwreck sites have been looted to varying degrees. The lack of a complete artifactual assemblage will not disqualify a site from eligibility if the level of remaining material can be shown within the individual nomination to meet that required with regard to the research questions to be addressed.
PROPERTY TYPE 1: COMMERCIAL SAILING CRAFT ON LAKE SUPERIOR, 1734-1930

DESCRIPTION

Commercial Sailing Craft on Lake Superior are associated with the following contexts: Exploration/Fur Trade (1650-1840), Settlement and Fishing on Lake Superior (1854-1930), Minnesota’s Iron Ore Industry (1880s-1945), Northern Minnesota Lumbering (1870-1930s), Railroads and Agricultural Development (1870-1940), and North Shore Tourism and Recreation (1870-1945). Sailing craft as defined here include all manner of large commercial ships (more than 50 feet in length) propelled by sail, regardless of rig. These include sloops, schooners, brigs and brigantines, barkentines, and unprowated consort-barges.

Sailing vessels are generally classified according to rigging (i.e., number of masts, shape of the sails). Sloops are vessels with single masts containing a gaff mainsail and headsails. They were some of the earliest types on the Great Lakes, but were not used extensively for commercial purposes.

Schooners were initially two-masted vessels that had one or two square sails on the foremast and a gaff topsail on the main mast. Later schooners had three and even four masts. Schooners too were an early vessel type on the Great Lakes, and soon became the most popular vessel type, a popularity that was to last throughout the age of commercial sailing on the Great Lakes. They could use a longer and narrower hull than a sloop and were thus faster yet had a good cargo capacity.

Brigs/brigantines are two-masted vessels with square sails on the foremast and a gaff sail with a boom on the mainmast. Most lake brigs contained staysails and jibs on the mainmast in addition to the square sails and staysails on the mainmast with the gaff-top spanker. Barkentines are three-masted vessels with square sails on the foremast and gaff sails on the main mast and the mizzen mast. The foremast sails usually consisted of a square foresail, topsail, topgallantsail, and one royal.
Consort-barges classified as commercial sailing vessels are either sailing vessels converted to barges or those built as barges containing masts. Most consort-barges were rigged as schooners.

SIGNIFICANCE

Sailing craft on Lake Superior are significant as representatives of specific vessel types as well as sources of information on shipbuilding technology, maritime activity, and shipboard culture. They are significant as the earliest commercial craft used on Lake Superior, excluding the canoes and bateaux of the fur-trading era. Cargoes were carried in sail-powered vessels of various descriptions that were largely unspecialized with regard to their cargo carrying design. They increased in number as the Midwest was populated, farmed, and eventually industrialized. The use of commercial sailing craft on the Great Lakes decreased sharply in the late 19th century with the introduction of steam power, propellers, and metal hulls.

There are relatively few sailing ship era vessels sunk in the Minnesota waters of Lake Superior, as the trades were centered on the other Lakes until the commercial sailing days were nearly done. The arrival of large numbers of commercial ships to the Head of the Lakes dates to 1880. By then the golden era of sail had already past.

Exploration/Fur Trade Context (1650-1840)

Sailing craft on the Great Lakes date to the exploratory ships constructed on Lake Ontario in the seventeenth century. All the first ships on the Lakes were built at Lake Ontario due to the natural barriers posed by the St. Lawrence river rapids and the falls at Niagara. Robert Sieur de La Salle built the seventy-foot "galliot" GRIFFIN above Niagara Falls in 1679, inaugurating navigation on the upper Great Lakes.¹ Louis Denis, Sieur de la Ronde, French commandant at Chequamegon, built a sailing craft on Lake Superior around 1734 to exploit the copper of Keweenaw Point and Isle Royale.² By the 1740s, the French had four ships on Lake Ontario. The British had begun shipbuilding there as well, in order to assert their influence over the lucrative and growing fur trade.³
All the earliest Lakes’ craft were brigs, schooners, or sloops, of traditional European design. They were probably designed in France and England by naval personnel. Between 1756 and 1763 the British and French were involved in the Seven Years’ War. Shipbuilding during that period followed Admiralty designs. Even so, the fore-and-aft (schooner) rig had begun to demonstrate its suitability for the confined waters and shallow rivers of the Great Lakes. Fore and aft rig vessels were lighter and more easily managed than square-rig ships. Ease of maneuverability was an important consideration in the Lakes, where frequent course changes were necessary to navigate the twisting rivers and in the relatively limited sea-room.⁴

Not long after the French surrendered Canada in 1763, the British built two small schooners at Navy Island on the Niagara River. The HURON and MICHEGON, each of eighty tons, were the first British craft of any description on the upper Great Lakes. The British built two more schooners in 1766. For the next nineteen years, Lakes navigation was restricted to British naval craft. Private enterprise was officially throttled. Merchants and traders were required to ship all their cargoes on government ships manned by the Royal Navy under the title of “Provincial Marine”.⁵ The British licensed a limited number of privately-owned ships, including a barge and a forty-ton sloop that had been built on Lake Superior in 1772 for an English copper-mining syndicate. In the early 1770s, there were only sixteen vessels on all of the Great Lakes, including five operating on Lake Ontario and nine on Lake Erie. Others would soon follow despite the policies of the British government. By 1778, fur trader John Askins of Michilimackinac was operating the schooners MACKINAC and DEPEYSTER on Lake Superior between Grand Portage and the Sault. In the summer of 1786, the forty-ton ATHABASCA was built for the North West Company at Point aux Pins above the Sault. The seventy-five-ton sloop OTTER was completed in 1793.⁶

With the fur trade flourishing in the West and settlement spreading around Lake Ontario, British merchants protested the prohibition against merchant shipping. In 1785, the Governor General of Canada granted permission for the private construction and operation of commercial vessels on the Lakes. Several ships were begun at once, principally for the various fur companies. Unlike the earlier ships built by the French and British, these were designed and built independent of the Navy. Nevertheless, many of the Lakes’ ship-
wrights had come from naval services. The influence of that training persisted for many decades. In 1788, Canada passed the Inland Marine Act fully opening commerce on the Lakes for the first time. Between 1788 and the War of 1812, dozens of vessels were built on the Lakes for trading with the Native tribes supplying military posts and western settlements, for transporting fish, salt, and lumber for the New York, Pittsburgh, and Quebec markets, and for the fur trade. Several small ships were built at Point aux Pins on Lake Superior during this era for the North West Company. Between 1802 and 1812 the North West Company built the schooners INVINCIBLE, MINK, PERSEVERANCE, FUR TRADER, DISCOVERY, and RECOVERY (I) at Kaministiquia. They varied from forty to ninety tons.7

The American and British Navies fought the War of 1812 on the lower Lakes and on the coast. The conflict on the Lakes centered on massive shipbuilding programs by both belligerents. Though square-rigged ships tended to be faster under the right conditions, they proved to be a disadvantage on the Lakes. Experience also demonstrated that shallow-draft vessels were as safe and efficient as the traditional deep-draft ships.

After the War of 1812, schooners became the vessels-of-choice on the Lakes. Most of the merchantmen between 1800 and 1830 were two-masted schooners of about seventy feet in length and 100 tons register. They carried approximately 150 tons, or 1,500 barrels of cargo with a crew of three or four men. Brigantines combined the best features of both square and fore-and-aft rigs, which became popular in the 1830s and ‘40s. They required crews of eight to ten men and were not as maneuverable as schooners. As a result, few brigs or brigantines were built after 1850 because they were too expensive to outfit and operate when compared with the simpler schooners. The most practical and profitable rig was the topsail schooner, designed for fast trips with heavy payloads (characteristic of square rig), and maneuverability with limited crew. Topsail schooners had the ability to sail close to windward that was characteristics of fore-and-aft rigged ships. Topsails in one form or another were a carryover from the days of the Baltimore Clippers. They added speed to otherwise sluggish Lakes schooners, especially when running before prevailing westerly winds.8

As the rigs of Lakes craft became somewhat standardized in the 1830s and ‘40s, a similar trend developed with the hulls. Hull form was determined by geographical conditions and by the config-
uration and dimension of navigation locks in places like the Welland Ship Canal. Sturdy ships were built with full shapes and flat bottoms to squeeze through the shallow spots and the locks with as much cargo as possible. They were invariably fitted with "centerboards" to improve their sailing qualities. With straight sides and box-like forms, they resembled canal boats and earlier coastal packets. The ships were the models for twentieth century bulk freighters. The distinctive "canallers" were characterized by their shapes and their dimensions, which conformed to those of the locks themselves. The first Welland Canal, completed in 1832, had locks 100 feet long and sixteen feet wide. The "Second Welland," opened in 1845, had 150-foot by twenty-six-foot locks. Canallers built for the second Welland were probably the first distinctly "Lakes" vessel type. In the early 1860s there were reportedly more than 750 canal schooners on the Lakes out of a total of nearly 1,300 sailing craft. The canallers were the backbone of the Great Lakes fleet."

During the Civil War years, strong markets for grain and lumber resulted in a shipbuilding boom that began in the mid-1850s and lasted until the late 1860s. Several hundred schooners were built. Many of these ships were 150 to 160 feet in length, with almost double the capacity of the canallers. These vessels were permanently three-masted. Though they varied widely in design and rig, they were usually referred to as "upper Lakers" to distinguish them from the canallers and the much smaller "mosquito fleet." Some of the larger craft built in the Civil War era were fitted out as barkentines, with square sails forward and schooner-rigged main and mizen masts. These speedy ships were well suited to the competitive Buffalo and Lake Michigan grain trade, where several set records for fast passages. According to contemporary newspaper articles, they could make up to fifteen miles an hour for short periods, though they generally averaged less than half that speed. A fifteen day round trip from Buffalo to Milwaukee or Chicago and back was considered good time.
One type of sailing vessel which became popular on the Lakes was the scow schooner. Scows were introduced around 1830. They were shallow craft with flat bottoms and hard chines (square bilges), although they varied in bow and stern configurations. Scows were simply designed and cheaply built. They were popular for the shallowest, poorest ports in the lumber, cordwood, tanbark, sand, or hay trades. A handful of scows were used on Lake Superior, but they were most common on Lake St. Clair, Lake Michigan, and on the Bay of Quinte on Lake Ontario. Some scows survived as late as 1920.\footnote{\textsuperscript{11}}

Conventional Lakes sailing craft were built with a single deck. Their "backbone" was formed by a centerline keel assembly, usually built up of several longitudinal timbers running the entire length of the ship. In large schooners (more than 160 feet in length), the keel may have been composed of as many as five or six great oak timbers, each measuring approximately twelve by sixteen inches in cross-section. The transverse frames were also made of white oak, spaced at intervals of twenty-one or twenty-two inches, and measuring about ten inches in moulded depth and twelve inches in sided dimension. The frames tapered up the sides of the ship and were much lighter (smaller in cross-section) near the tops of the vessel. Planking was also usually of oak. It varied from one and a half to five inches in thickness. Some vessels were planked in pine, cypress, or maple. All but the smallest commercial sailing craft were planked on both the interior and exterior. All planking was caulked to make it watertight.\footnote{\textsuperscript{12}}

The largest sailing craft were reinforced. Some had large tamarack brackets or "knees" where the deck beams met the sides of the ship. Many had heavy vertical stanchions along the centerline to support the deck down the middle. Still others had transverse "hold beams" across the hull at mid-depth to stiffen the sides. These were particularly common in vessels built for the iron ore trade. After 1880, many builders incorporated iron and steel into the fabric of wooden ships in the form of reinforcing rods and straps, brackets, or plates at critical locations in the hull.\footnote{\textsuperscript{13}}

In general, ships grew larger as shipbuilding technology improved through the nineteenth century. The dimensions of Lakes vessels were always limited, however, by the shallow connecting channels and harbors. When the infamous shoals were dredged at the St. Clair Flats in the late 1860s, a whole fleet of large schooners was
built for the grain and iron ore trades, including 200 big three-masters and a few four-masters. The new schooners, 200 feet in length and drawing sixteen feet, were constructed between 1870 and 1874, until a financial Panic ended the temporary boom. Only for a little while longer would the large capacities of the new schooners enable them to compete with the growing fleets of steam-powered freighters.¹⁴

The introduction of the "consort system" and the advent of larger ships in the 1870s, led to significant reductions in freight rates, increased competition, and reduced profits for vessel owners. Many sailing craft were reduced to barges during the 1880s. By the middle of that decade, the decline of schooners became absolutely precipitous. One newspaper reported:

"There are upon the Lakes 300 barges, which in earlier times were fine fully-rigged barkentines, brigs, or schooners, ranging from 20 to 40 years of age. Their former semblance has entirely disappeared."¹⁵

Very few full-rigged sailing vessels were built on the Lakes after 1880. The last large schooner was launched in 1889. Sailing craft built after that date were all rigged with short masts, and were intended as tow-barges. Some of those built after 1890 measured up to 300 feet in length. Some of the old schooners continued under sail into the twentieth century, but few made any money. There were only a handful left after 1920. The schooners OUR SON and LYMAN M. DAVIS lasted into the 1930s. They were the last working survivors of nearly 25,000 of their type.¹⁶

In Great Lakes shipbuilding, iron and steel came into general use after the popularity of sailing craft had begun to decline. As a result, there were no schooners built of those materials. During the mid-1890s, however, approximately thirty steel tow-barges were built for various fleets as consorts to modern steel freighters.¹⁷ Most of these barges were unpowered versions of the contemporary steam bulk freighters. Some were eventually given engines and converted into typical steamers. The use of tow-barges declined after 1920, though some of these direct descendants of the old schooners survived as late as the 1960s.
Sailing craft recorded lost along the North Shore include the American Fur Company's MADELINE, a forty-five foot fishing vessel lost at Knife River; the STRANGER and CHARLEY, lost off Grand Marais and Beaver Bay, respectively; the GUIDO PFISTER, wrecked on the South Pier at Duluth in 1886; the "powder boat" CRIS GROVER near Castle Danger; the S.P. ELY, smashed against Two Harbors' west breakwater in the fall of 1896; the tow-berge AMBOY lost at Thomasville in the Great Storm of 1905; and finally, the schooner-berge MADEIRA, a 436-foot steel giant which succumbed to the same storm at Gold Rock near present-day Split Rock Lighthouse.¹⁸

Given the violent nature of most shipwreck events and the high-energy conditions found along the Lake Superior shore, wrecks of sailing craft will have suffered damage to varying degrees. Post-depositional activity is another factor affecting the condition of wrecks. The AMBOY, for example, has been reduced to two sections of her heaviest framing.²⁰ The GUIDO PFISTER was dynamited during construction of new piers at Duluth in 1898, and major portions were removed. The S.P. ELY, though damaged by ice, is reasonably intact for more than half its length.

REGISTRATION REQUIREMENTS

In order to be eligible for the National Register, a commercial sailing craft must meet the requirements of significance and integrity as discussed at the beginning of Section F and must be at least fifty years old, in addition to satisfying one or more of the following criteria:

1) Under Criterion A, the vessel must be directly associated with a significant event or pattern of events relating to the historic contexts described under this property type. For example, an exploratory vessel associated with the Exploration/Fur Trade context or one which carried vital provisions to the early settlers under the Settlement and Fishing context. If associated with a particular industry, it must be clearly demonstrated that the vessel played a significant role in the development of that industry. For later periods, primary eligibility under Criterion A could be established through association with important local events such as the founding of a town or an important business. In order to be eligible under Criterion A the identity of the vessel must be established.
2) Under Criterion B, the vessel must be directly associated with a significant person or group relating to the historic contexts described under this property type. The association includes important captains, crew, or owners. For example, a vessel owned and operated by the Wieland family of Beaver Bay may be important to both the Iron Ore Industry and Settlement and Fishing. In order to be eligible under Criterion B the identity of the vessel must be established.

3) Under Criterion C, the vessel must retain enough integrity of design to make it recognizable as a commercial sailing craft. If the vessel is important on the basis of a specific structural component or design element, that component or feature must retain demonstrable integrity. If the name of the vessel is known, it may be significant if it is associated with a prominent designer, builder, or craftsman. There are many different commercial sailing craft types and sub-types, but few good examples have been documented on the Great Lakes so almost any commercial sailing vessel should be eligible under Criterion C if retains minimal integrity. Since schooners are the most common type of commercial sailing craft, non-schooners would be particularly significant vessel types.

4) Under Criterion D, the vessel and/or artifact scatter must clearly exhibit research potential to help understand lifeways, construction and repair techniques, design elements, mechanical operations, or salvage techniques relating to the historic contexts described under this property type. Other valid research questions relate to site formation processes and the impact of post-depositional activities.

FOOTNOTES


2. Very little is known of this pioneer Lake Superior vessel, but LaRonde’s story is a fascinating one. See Grace Lee Nute, *Lake Superior*, (Indianapolis: The Bobbs-Merrill Company, 1944), pp. 117, 161ff.


16. The 265-foot DAVID DOWS was the largest schooner ever built on the Lakes and the only five-master; she was launched in 1881, and soon proved too large to be practical. The CORA A, built at Manitowoc, Wisconsin, in 1889 was the last full-rigged schooner. To measure the decline in sailing craft after 1900, see various numbers of *Beesons Marine Directory*, (Chicago: Harvey C. Beeson & Company, annual).


PROPERTY TYPE 2: PASSENGER AND PACKAGE FREIGHT STEAMERS, 1816-1945

DESCRIPTION

Passenger and package freight steamers on Lake Superior are associated with the following contexts: Settlement and Fishing on Lake Superior (1854-1930), Minnesota's Iron Ore Industry (1880s-1945), Northern Minnesota Lumbering (1870-1930s), Railroads and Agricultural Development (1870-1940), and North Shore Tourism and Recreation (1870-1945).

Steamships were introduced on the Great Lakes in 1816, making their first appearance on Lake Superior in 1845. The earliest steamers were side-wheelers. There is no evidence of stern-wheelers operated on Lake Superior. Screw-driven "propellers" were introduced in 1840. They were typically configured with two or more decks. Cargo space was provided below decks in the holds. Passenger accommodations were furnished in enclosed cabins on deck. Steamers without passenger cabins were "package freighters." They had two decks and side-loading gangways. Specialized steamer types developed after 1850, though the basic types continued into the twentieth century.

Steam vessels are generally classified according to propulsion (paddle-wheel or screw propeller):

Side-wheel steamers had two large paddle-wheels mounted port and starboard with engines and boilers amidships. Most early side-wheelers also carried one to three masts.

Screw steamers mounted single or twin screw propellers and machinery aft. Some screw steamers carried masts through the end of the nineteenth century.

SIGNIFICANCE

Passenger and package freight steamers are significant as representatives of specific vessel types, as well as sources of information on shipbuilding technology, marine engineering, maritime activity, and shipboard culture. Screw steamers predominated on Lake Superior, carrying both passengers and freight.
They grew in size throughout the nineteenth century in response to navigational improvements, and developments in marine engineering, particularly the introduction of iron and steel.

Passenger and freight steamers operated successfully in conjunction with the railroads until the early twentieth century. Thereafter, package cargoes decreased as the railroads expanded. The last of the large screw steamers operated as excursion vessels.

Passenger and package freight steamer wrecks in the Minnesota waters of Lake Superior are primarily screw-driven vessels, as paddle-wheel technology had only limited applications on Lake Superior.

**Settlement & Fishing on Lake Superior (1854-1930)**

Steam navigation began on the Lakes with the construction of the side-wheelers **ONTARIO** and **FRONTENAC** in 1817. At 170 feet in length, both were very large for their day. **ONTARIO** was built at Sacketts Harbor, New York, and **FRONTENAC** at Ernettstown, near Kingston, Ontario. Both steamers proved successful, although they were slow and required design changes to suit them to the open waters of Lake Ontario. The first steamboat on the upper Lakes was the 338-ton WALK IN THE WATER. She was built at Black Rock (Tonawanda), New York for the Lake Erie Steamboat Company. Her machinery, like that of the **ONTARIO** and **FRONTENAC**, was designed by Robert Fulton.¹

Acceptance of steamboats was slow among Lakes vessel owners. Trade in the 1820s was not yet large enough to justify the large investment required to build steamers, so most vessel owners built and operated sailing craft. After completion of the Erie Canal in 1825, however, the commerce of the region grew. The burgeoning passenger traffic offered sufficient returns to justify the more costly steamboats. In the thirteen years previous to the opening of the Canal, twenty-five steamboats had been constructed. In the four years after completion of the canal, however, sixty new steamboats were built, primarily at Lake Erie ports which connected directly with the Erie Canal. By 1840, there were more than 100 steamers in service on the Lakes. Most were less than eight years old.² About forty of these craft operated as ferries or on short local routes out of the larger ports. The remainder, principally
the larger boats, ran from Buffalo to upper Lakes ports or from Niagara and Toronto to lower Lakes or St. Lawrence River destinations.

By the 1840s, the Erie Canal brought tens of thousands of settlers to Buffalo each year in search of passage to the West. Population in cities bordering the upper Lakes reportedly quadrupled in the eight years previous to 1840 as a result of that influx. The passenger and merchandise businesses were booming.³

Steamboat technology developed quickly in the 1830s and '40s. The steamers ILLINOIS of 1837 and GREAT WESTERN of 1838 were the largest and finest of their day. The 185-foot GREAT WESTERN was the first steamer on the Lakes to be fitted with a spacious upper cabin:

The entire hull was occupied by the boilers, with holds for freight and wood. On the main deck aft was the ladies' cabin and staterooms, while on the hurricane deck the main cabin extended almost the entire length of the boat. On this deck there were also a ladies' saloon aft, the dining room next, and the saloon or bar-room forward. Staterooms, sixty in number, were arranged on either side of these cabins, the whole length, with three berths in each, making in all about 300 berths.⁴

Improvements in steamboat machinery resulted in increased speed, efficiency, and safety. Some vessels had crosshead or "square" engines, easily identified by the towering gallows which stood high over the superstructure, with a crosshead moving up and down in a slide. Other ships had horizontal engines, with the machinery entirely contained below decks. The most common arrangement on the Lakes was the vertical or "walking beam" engine. It had a tall A-frame with a crosshead on top which rocked back and forth, attached to the cylinder on one end and the crankshaft on the other. The steamers all burned cordwood for fuel until coal was adopted after the Civil War. Most paddle-wheelers carried one, two, or even three masts until about 1850. These were often fitted with sails and jibs. The later screw steamers, or "propellers," continued to use sails until after 1870. Some screw freighters carried sails until almost 1900.⁵
Steamboats offered fast, efficient, and predictable delivery for passengers and freight. The cost was considerable, however, as steamers were more expensive to build and operate than contemporary sailing craft. The steamer CLEVELAND was built in 1837 for $22,500, but its machinery cost an additional $50,000.\(^6\) A large contemporary schooner cost between $6,000 and $10,000. Because boilers and engines were so costly, they were often re-used, sometimes serving in three or more different hulls before they were worn out and useless. Steamers also required fuel, which cost $80 to $125 per day. They required larger crews than sailing craft, as well. A large steamer carried a crew of up to forty men, while sailing vessels, even square-rigged, seldom needed more than ten or twelve. The differing operating costs resulted in varying freight rates. Therefore, steamboats carried passengers and selected high-value cargoes, while the less valuable commodities were hauled in the more numerous sailing craft.

With the advances in shipbuilding technology during the 1840s came dramatic changes to the steamboat fleet. The first 1,000-ton steamer in the nation was built on the Lakes in 1844; she was the 260-foot EMPIRE. The lavish vessel ushered in the era of "Palace Steamers," which was to last until 1855. Construction of such large craft was possible with the development of new fastenings for wooden hulls, the expanded use of ironwork for strengthening, and the introduction of "hogging-frames" and trusses.\(^7\) The magnificent Palace Steamers of the later 1840s and early 1850s were the most beautifully-appointed craft ever built on the Lakes. In all, there were twenty-five of them. Most were between 1,000 and 1,600 tons.\(^8\) The CITY OF BUFFALO, built in 1857, was the last and largest of them. She measured 350 feet in length and was 2,026 tons burthen. A contemporary journalist described her as follows:

the grand cabin [is] lighted by skylights and a splendid stained-glass dome. On either hand the doors open into the staterooms. The cabin has an arched ceiling, which together with the panels, are ornamented by gilt mouldings, the white and gold making a very rich appearance. Splendid chandeliers light it by night, the center one being double. The furniture is of the richest rose-wood, with damask and plush upholstering; the carpets are costly brussels, and the whole scene magnificent. The fairy palaces of the imagination were
never so gorgeously furnished, nor could the famous barge of Cleopatra, with its silken sails, rival this noblest of steamers."

Most of the Palace Steamers ran from Buffalo to Detroit or Chicago. Only the smallest could fit through the Sault Locks when they were opened in 1855. The Panic of 1857 ruined the passenger business on the Lakes. The entire fleet of Palace Steamers was withdrawn from service. Few ever operated again. When the country recovered from the depression in 1861 and 1862, most of the ships were no longer worth repairing, and they were too expensive to compete with newer, more efficient craft. The passenger business revived after the Civil War, but it was never again able to sustain ships as luxurious as the Palace Steamers. The steamers built for the post-war passenger trade were more modest in size and furnishings.

Other Contexts: Minnesota’s Iron Ore Industry (1880s-1945), Northern Minnesota Lumbering (1870-1930s), Railroading and Agricultural Development (1870-1940)

Though steamboats offered many advantages over their sailing contemporaries, they also had disadvantages. The side-wheelers had enormous engines which took up too much space in the holds to make them efficient cargo-carriers. They had particular difficulty in carrying bulky cargoes inexpensively. Side-wheelers were also so beamy that in order to build them narrow enough to pass through some of the canals, valuable cargo space was sacrificed. The twenty-six-foot-wide Welland Canal could not admit even the smallest class of side-wheelers. All of the freight bound for Oswego, Toronto, Kingston, and Montreal was necessarily carried in schooners. In 1840 and 1841, several Lake Ontario vessel owners began to experiment with steamboat technology to enable them to compete more effectively with Buffalo and the Erie Canal for the trade of the West. They built the first "steam schooners," adopting the efficient new engines recently developed by Swedish inventor John Ericson, with screw propellers.¹⁰

The first screw-driven commercial craft in America was the sixty-three-foot towboat ROBERT P. STOCKTON, which was built in England in 1838 and sailed across the Atlantic in 1839 to serve on the Delaware & Raritan Canal.¹¹ The 126-ton screw steamer ERICSON was
built at Brockville, Ontario in 1840. Two similar craft were built at Brockville and Niagara, Ontario in 1841. The 138-ton VANDALIA, built at Oswego, New York in 1841, is credited as the Great Lakes' first propeller steamship. Unlike the pioneer screw-steamers in England, which appear to have been without exception, towing vessels, VANDALIA and her contemporaries on the Lakes were all built to carry passengers and freight through the canals. The VANDALIA, designed to trade through the Welland Ship Canal, was intended to divert some of the lucrative Lake Michigan trade from Buffalo to Lake Ontario ports for her Oswego owners. She demonstrated that "propellers" could pass easily through the narrow locks where side-wheelers could not. The maritime industry was guardedly optimistic, but the ship's owners and investors expressed boundless confidence. The Kingston Gazette & Chronicle said: "These vessels fitted with the Ericsson propellers...will form a new era in the history of navigation."

Another paper expressed the same euphoric optimism: "We are firmly persuaded that this enterprise [construction of VANDALIA] marks an epoch in the progress of the Western trade."

Propellers were soon found to be economical ships. They were cheaper to build and operate than side-wheelers. Their machinery was simpler, cheaper, and more compact, so that it left more space for cargo. Screw steam engines burned about one-fourth the fuel of paddle-wheel steamers, and required only half the engine-room crews. All these factors enabled propellers to offer freight rates somewhere between those of sailing craft and side-wheelers. This meant that they could compete for much of the low-value cargoes that had previously been carried in schooners. Not long after their introduction, propellers were gathering contracts for larger and larger proportions of the flour, grain, and provisions shipped down the Lakes.

The 105-foot propeller INDEPENDENCE was brought to Lake Superior in 1845. It was the first steamer of any kind to sail that body of water. She had been built two years earlier at Chicago, and like several other vessels, she was hauled around the falls at Sault Ste Marie on rollers launched into Lake Superior many years before the Sault Locks were built. Although she made little more than four miles an hour, the INDEPENDENCE operated successfully until her career was ended by a November 1853 boiler explosion at Sault Ste Marie.
The number of propellers on the Lakes grew rapidly. Several companies organized around 1850 to build fleets of screw steamers to carry freight in connection with the Erie Canal, or with the various railroads running to the seaboard from the eastern end of the Lakes. Between 1840 and 1849, eighty-one propellers were built at Lakes shipyards. During the next ten years 133 more were added, and during the 1860s another eighty-eight were built, not including screw tugs. Propellers were revolutionizing the carrying trades.

The first screw steamers resembled the side-wheelers of the 1840s, with passenger cabins above deck and cargo holds below. The propellers had their machinery mounted aft, in the stern, while the paddle-wheelers carried their engines and boilers amidships, occupying most of the hold space. The propellers carried both passengers and freight. A few specialized ships, built without cabins, were called "package freighters." At first there were few package freighters. They became more common after 1870. Fifty package boats were built between 1870 and 1910. Another specialized type of screw steamer was the towboat or "tug". The first screw-powered ships in Europe and the United States were tugs. They were not adopted on the Great Lakes and tributary canals until 1850. Two screw tugs were built on the Lakes before 1850. More than 100 were built during the 1850s, and nearly 400 in the 1860s. Package freighters were frequent callers at Duluth's docks between 1880 and 1930. They were operated principally by eastern railroads. Rafting tugs and harbor tugs were also used in considerable numbers around Duluth.

Screw steamers, including passenger propellers and package freighters, grew in size during the nineteenth century, along with deepening channels and improvements in shipbuilding technology. The average size of propellers grew from 141 feet (337 tons) in 1845, to 182 feet (641 tons) in 1862, and 220 feet (1,300 tons) in 1877. Wooden screw steamers, like side-wheelers, required extraordinary means of strengthening their hulls once they grew beyond 150 feet in length. Most large propellers had a series of parallel fore and aft "floor keelsons" and arch-trusses, or "Bishop arches," to give longitudinal strength and rigidity to their hulls. A long wooden chord, or arch, was tied into the vertical frames at the sides of the ship and supported by a series of vertical stanchions. These powerful structural elements towered above the cabins in most propellers and package boats were the hallmark of Lakes craft for many years. The few wooden propellers built after
1880 employed internal reinforcing of iron or steel, dispensing with the clumsy external arches.  

Iron was used experimentally to build ships’ hulls in Scotland and England before 1800, but it was not readily adopted. The U.S. Navy and the Revenue Service ordered iron vessels in the early 1840s. Some farsighted Canadian shipowners built iron steamers in the United Kingdom during the 1850s and ’60s. Despite the advantages of iron hulls, however, Great Lakes shipbuilders did not begin iron shipbuilding until after 1860. The practice was not widely accepted until 1880. The first large commercial vessel built of iron on the Lakes was the propeller MERCHANT, a 200-footer launched in July, 1862 at Buffalo, New York. Other iron steamers came after 1868, when two firms ordered twelve large iron propellers and package freighters within a few years. By 1885, several respected fleets owned iron ships, and there were four fully-equipped iron shipbuilding firms in operation.  

Iron proved to be a very practical medium for the construction of ship’s hulls. It was far stronger pound-for-pound than the traditional white oak. A structural member made of iron reportedly had only three-eighths the weight and one-eighteenth the volume of its wooden counterpart. Iron hulls were more expensive to build, but they lasted longer than wood, were easier to repair, and were virtually maintenance-free. Mild steel was introduced in the mid-1880s. Though costlier than iron, it was tougher and more resilient. Steel became the standard for shipbuilding after 1885, though some builders continued to use wood until the turn of the century. The last large wooden passenger and package freight steamers were built in 1892.  

The development of side-wheel steamers was stemmed by the rapid ascendency of screw steamers in the various trades. Though they remained popular in the passenger trade for many decades, side-wheelers would never again achieve the numbers of the 1830s and 1840s. Side-wheelers reached their zenith between 1845 and 1857 with the 300-foot Palace Steamers. A few paddle-wheel giants were built on the Lakes after 1900, including the 520-foot twins GREATER DETROIT and GREATER BUFFALO, of 1924, which were the largest side-wheelers ever built. When they entered service, only thirty-seven others were left. After 1950, they were all gone.
Passenger and freight propellers, like package freighters, were most successful when they were operated with the railroad systems stretching east and west from the Lakes. Package freighters numbered 116 in 1890, which was probably their peak. The tonnage of package cargo was reduced as the nation’s railroads were extended, and the number of package boats and propellers shrunk in direct proportion. In 1900 there were ninety package freighters. In 1915, anti-trust legislation forced the disposal of most of the package freighters by the railroads which operated them. Many of them never saw service on the Lakes again. Most of the package freighters that were left were requisitioned for coastal service during World War II. Virtually no U.S. package freighters remained on the Lakes after 1940. A couple of Canadian fleets ran package boats until 1980 in specialty trades such as rolled newsprint or barrelled chemicals. In the highly-competitive atmosphere that has prevailed since the 1950s, only the bulk freighters have survived.

North Shore Tourism and Recreation (1870-1945)

After 1880, relatively few large propellers were built. Many of those were exclusively passenger ships, with limited cargo space or no freight capacity at all. Most of the last propellers were "day boats;" excursion steamers with neither overnight accommodations nor cargo space. A dozen passenger propellers survived the opening of America’s highway networks in the 1930s, but the last of them succumbed to economic pressures and regulatory requirements and were laid up in the mid-1960s. The Georgian Bay Line steamer SOUTH AMERICAN was the last active representative of its type. She retired at the end of the 1967 season.

There are several passenger-type steamship wrecks in Minnesota waters. The passenger and freight propellers CITY OF WINNIPEG and WINSLOW both burned in Duluth harbor, in 1881 and 1891 respectively. Both burned at the docks on the waterfront and were later removed to other sites. The CITY OF WINNIPEG was scuttled in the Lake off Duluth. The WINSLOW was scuttled up the St. Louis River in a shallow bay. The much-smaller coastal packets ISLE ROYALE, LIBERTY, and A. BOOTH all lie along the North Shore. The ferries STILLMAN WITT, MARY MARTINI, and ODEN also lie in Minnesota waters. The rafting tugs BOB ANDERSON and NIAGARA, and the harbor
tugs R.F. GOODMAN and FAYLING are screw steamers among Minnesota’s shipwreck resources.24

STILLMAN WITT (1849) was one of the first steamers to operate at the Head of the Lakes.25 The ODEN (1880) was a crude little pine-built ferry constructed at Fond du Lac. The packets ISLE ROYALE (1979), LIBERTY (1889), and A. BOOTH (1882), were especially important in North Shore history. A. BOOTH is especially notable because of her ties to the firm of the same name, which eventually gained national renown. The two rafting tugs BOB ANDERSONS (1862), and NIAGARA (1872) relate to an important era in Lake Superior history. The ANDERSON lies off Colvill and the NIAGARA off Knife River.

The CITY OF WINNIPEG and the WINSLOW are the two largest passenger-vessel wrecks. The bottoms of both ships are all that remain. The CITY OF WINNIPEG was scuttled at some unknown location off Duluth’s Park Point in 1898.26 The remains of the 220-foot WINSLOW can be seen at low water near Duluth’s Hibbard Power Plant. The large tug NIAGARA lies broken in two or three major sections on the east side of Knife Island. A. BOOTH, ISLE ROYALE, and LOTTA BERNARD were lost in relatively deep water. None of the three have been located. FAYLING was scuttled off Duluth harbor after removal of her machinery. Her hull is intact. STILLMAN WITT was abandoned on the inside of Minnesota Point at Duluth around 1880. She was later buried in sand from nearby dredging activity and is not technically underwater. ODEN was either scuttled in the Lake or buried in harbor landfill around 1900.

REGISTRATION REQUIREMENTS

In order to be eligible for the National Register, a passenger and/or package freight steamer must meet the requirements of significance and integrity as discussed at the beginning of Section F and must be at least fifty years old, in addition to satisfying one or more of the following criteria.

1) Under Criterion A, the vessel must be directly associated with a significant event or pattern of events relating to the historic contexts described under this property type. For example, a passenger steamer carrying settlers under the Settlement and Fishing context, a package freighter operated in association with
the railroads under the Railroad and Agricultural Development context, or an excursion vessel under the Tourism and Recreation context. If associated with a particular industry, it must be clearly demonstrated that the vessel played a significant role in the development of that industry. In order to be eligible under Criterion A, the identity of the vessel must be established.

2) Under Criterion B, the vessel must be directly associated with a significant person or group relating to the historic contexts described under this property type. The association includes important captains, crews, or owners. For example, a steamer owned and operated by Cooley & Lavaque, or A. Booth & Sons, might be important to Settlement and Fishing on Lake Superior. In order to be eligible under Criterion B the identity of the vessel must be established.

3) Under Criterion C, the vessel must retain sufficient integrity of design to make it recognizable as a passenger and/or package freight steamer. If the vessel is important on the basis of a specific structural component or design element, that component or feature must retain demonstrable integrity. If a vessel is significant on the basis of its machinery, that machinery must be present and retain integrity of parts and assembly to the level predicated by its significance. The transitional development of side-wheel and screw steam technology, coupled with the progression from wood to iron to steel, is well expressed in Great Lakes maritime history. Vessels which exemplify transitional periods in vessel design and engineering would be particularly significant. Since screw steamers were the most common type of passenger and package freight steamer on Lake Superior, paddle-wheel vessels would also have particular significance.

4) Under Criterion D, the vessel and/or artifact scatter must clearly exhibit research potential to help understand lifeways, construction and repair techniques, design elements, mechanical operation, or salvage techniques relating to the historic contexts described under this property type. Other valid research questions relate to site formation processes and the impact of post-depositional activities.


5. Early steamboats carried sails largely to assist with propulsion. In later years they were used in case of machinery failure, but also to retard rolling of the ship in heavy seas.

6. Detroit Daily Advertiser, September 21, 1840.

7. Elaborate systems of bracing wooden ships were introduced on the Hudson and the western rivers in the 1830s and 1840s, using iron rods or "hoggling chains" with turn-buckles to keep the ends of the hulls from drooping or "hoggling" under the concentrated weight of machinery or cargo. Larry Murphy, "Major Vessel Types on Lake Superior: Sail to Steam" in Daniel J. Lenihan, ed., Submerged Cultural Resources Study, Isle Royale National Park, (Santa Fe: U.S. National Park Service Southwest Cultural resources Center, 1987), P. 49; Francis J. Slyker, "Reinforced Wooden Vessels on the Great Lakes," Telescope, Vol. 7, No. 4 (April 1958), pp. 3-7.


14. Oswego Palladium, December 1, 1841.


18. The 135-foot propeller SAMPSON was built without cabins in 1843 to become the first all-freight screw steamer or "package freighter" on the Lakes. She carried about 300 tons of cattle or packaged cargo. Morrison, *American Steam Navigation*, 371-372.


20. Many older propellers which were originally fitted with large Bishop-arches eventually had them cut down or truncated by using iron or steel straps along the sides to stiffen up the hulls; Hall, "Ship-Building Industry," 168; Murphy, "Major Vessel Types," 55; Slyker, "Reinforced Wooden Vessels," 5-7, and Vol. 7, No. 5 (May 1958), p. 11-14.


22. Inland Lloyds Vessel Register, 1890, (Buffalo: Inland Lloyds, 1890); C. Patrick Labadie, "Chronological Register of Great Lakes Package Freighters to 1910," unpublished manuscript, 1990, author's collection, Duluth, Minnesota.

23. Canada Steamship Lines Ltd announced plans early in 1982 to withdraw from service its last five package freighters, bringing to an end the era of these colorful ships; *Log Chips*, Vol. 10, No. 18 (January 30, 1982).
24. Robert North, personal interview by the author at Duluth, Minnesota, June 19, 1984, notes regarding sinking of FAYLING in ship files at U.S. Army Corps of Engineers Canal Park Museum, Duluth; Dr. Julius F. Wolff Jr., Lake Superior Shipwrecks, (Duluth: Lake Superior Fort Cities Inc., 1990), pp. 22, 35, 42, 45, 46, 63-64, 80, 84, 102, 162.

25. "ODEN (1890)" and "STILLMAN WITT (1849)" files, Ship Histories, U.S. Army Corps of Engineers Canal Park Museum, Duluth, MN.

PROPERTY TYPE 3: BULK FREIGHT STEAMERS ON LAKE SUPERIOR, 1865-1945

DESCRIPTION

Bulk freight steamers in the Minnesota waters of Lake Superior are associated with the following contexts: Minnesota's Iron Ore Industry (1880s-1945), Northern Minnesota Lumbering (1870-1930s), and Railroads and Agricultural Development (1870-1940). Great Lakes bulk freighters are screw steamers designed for the carriage, in bulk, of such cargoes as iron ore, grain, coal, or limestone.

Screw steamers, in general, are single or twin screwed, double-decked vessels with their machinery mounted in the stern and a small raised forecastle at the bow. Nineteenth century bulk freight steamers generally carried three to four masts.

Steambarges were small, single-decked screw steamers with powerful engines and small cabins at the stern. They had raised poop decks. The pilothouse sat aft on the early steambarges. After 1880, it was placed on a raised forecastle with a well-deck between bow and stern. Most carried one to three masts. Steambarges were built for towing two or more laden barges while carrying a modest cargo of their own.

SIGNIFICANCE

Bulk freight steamers on Lake Superior are significant as representatives of specific vessel types as well as sources of information on shipbuilding technology, marine engineering, maritime activity, and shipboard culture.

The first bulk freighters were built around 1865 to carry lumber, but the basic design was adapted for "coarse freight" in 1869. The hybrid which resulted is entirely unique to the Great Lakes. They have played a key role in the development of Minnesota's agricultural and mining industries by providing a cost-effective system of transporting the state's grain and iron ore to lower Lakes markets.

Bulk freight steamers represented in Minnesota's Lake Superior shipwreck population include examples of steamers, steambarges, and
specialized types such as whalebacks, constructed of wood, iron, and steel.

Northern Minnesota Lumbering (1870-1930s)

The 1840s and 1850s were prosperous times for the country, and for the Midwest in part:

It was about 1850 that the wave of prosperity, which for some years had been on the ascendant sweeping through the Great Lakes country, finally reached its height. At that time the population of Michigan had increased to 397,654, and Wisconsin to 305,391. All the inhabitants of these struggling states rich in natural resources, came by way of the Lakes, and a large proportion were thrifty foreigners. They did not straggle along by twos and threes, but came in droves, and steamboats on westbound trips were so closely packed with humanity that the crews could scarcely get about to attend to their work of navigation.¹

Unfortunately, the great boom ended in the Panic of 1857, which prostrated the nation’s economy for the next several years and ruined most of its financial institutions. The Civil War years marked the slow steady recovery from the terrible effects of the depression.

With the 1860s, commerce shifted in the Great Lakes. Railroads had penetrated the West and cut into the profitable freight businesses. There were still enormous quantities of foodstuffs and raw materials to be transported by ships, but the lucrative package cargo had decreased. At the same time, bulk cargoes such as salt, grain, coal, and lumber were increasing. The most dramatic and far-reaching consequence of the lean years of the late 1850s and early 1860s was the introduction of the "consort system," and the development of specialized bulk freight carriers.

Many of the largest steamers on the Lakes had been built just before the great Panic. They had lain idle for years after 1857. When a practical method was sought for hauling large quantities of cheap cargo, one Buffalo vessel owner seized upon the idea of buying up the old steamboats and converting them into barges. He
purchased the vessels for a fraction of their original value, and used them to haul immense cargoes by towing them down the Lakes. Between 1861 and 1870, dozens of superannuated passenger ships were converted into lumber barges. The new system was so practical that new ships were built from the keel up as barges.²

Although the first barges were towed by regular tugs, a new class of specialized steamers evolved in the mid-1860s to accommodate the new consort system. These "steam barges" were small screw steamers with single decks, powerful engines, and small cabins at the stern. They were built for tugs of two, three, or more barges laden with cargo, while at the same time hauling a modest cargo of their own:

A new arrangement is being inaugurated for the transportation of lumber, consisting of the use of propellers especially adapted for the purpose. They have no upper works forward of the engine room, which gives space for additional cargo. Several are now running.³

The basic pattern for these efficient craft was reportedly developed in 1848 with a little screw steamer called the PETREL, built to haul lumber.⁴ Steam barges were introduced again in 1865 with the construction of the 115-foot TRADER at Marine City on the St. Clair River. They were an immediate success due to the adoption of the consort system and the insatiable demand for lumber products.

Typical steam barges measured 135 feet in length and had a capacity for about 300,000 feet of lumber, though ships of that class could range from sixty-five feet to 200 feet in length, and some could carry more than a million board feet. Steam barges were single-decked like their schooner forebears. Most had raised poop decks. The earliest steam barges had their pilothouses aft. After 1880, most carried them on a raised forecastle, with a well-deck between bow and stern.⁵ Most steam barges were fitted with a tall mast near the bow where they spread a single gaff-rigged sail and a jib. The larger boats, built after 1880, often had two, or even three masts. Because they carried working sails, most had center-boards. A prominent feature of the earliest steam barges was the hogging arch, like the bridge-like truss used in larger Lakes propellers. It towered above the rails on either side of the vessel. Some builders substituted hogging-chains or iron rods with a single sampson-post near the after end. It was not until internal bracing
was perfected around 1880 that steam barges could dispense with the
very visible external reinforcing. In the older steam barges, the
arches so complicated the loading and unloading of lumber that dock
gangs were paid a premium to work aboard them.

Steam barges, some of which were called "lumber hookers," or
"rabbits," carried their lumber cargoes in the hold and stacked
high on deck. Some carried square timber or logs, as well as
"deals" (cut lumber), shingles, cedar posts, or railroad ties. The
cargo was usually piled on deck to heights of twelve or fourteen
feet. The consort barges carried similar loads. Most tows
consisted of three or four barges. Some of the more powerful
steam barges were known to tow up to eight or nine at a time, from
Saginaw Valley ports all the way to Buffalo or Tonawanda, New York.
The huge lumber cargoes were loaded and unloaded entirely by hand.6

Forty-five steam barges were built before 1870. A number of
passenger and freight propellers were also converted for the same
use; their cabins were removed and their spar decks cut away to
accommodate lumber. More than twenty propellers were rebuilt in
this way by 1870. Dozens more were converted into lumber steamers
in the next decades. Nearly 600 steam barges were built between
1870 and 1900.7 The lumber business moved to the Pacific coast
around 1910. The use of steam barges on the Lakes declined sharply
after that, although they became widespread along the California,
Washington, and Oregon coasts. Some steam barges were used to carry
salt, coal, sand, and lumber products on the Lakes, but few
survived past the 1920s.

Other Contexts: Minnesota's Iron Ore Industry (1880s-1945)
Railroads and Agricultural Development (1870-
1940)

The practicality of the consort system extended beyond the lumber
trade. Some of the first steam barges occasionally hauled grain and
iron ore cargoes when the rates were right. The little steamers
and their barges were not entirely suited for those cargoes,
however. They were designed to carry much of their lumber cargo on
deck, and ore or grain cargoes had to be carried below decks where
it could be kept dry. The small deck hatches in steam barges also
made unloading difficult.
Captain Elihu M. Peck designed a variant of the steambarge in 1869 to meet the requirements of the iron ore and grain trades. Peck designed a double-decked vessel with plenty of space below decks for dry bulk cargo, fitted with wide deck hatches evenly spaced to match the twenty-four-foot spacing of the loading chutes at Marquette's ore docks. His vessel had a capacity for 1,200 tons of ore and enough power to tow one or two loaded barges. The result was the 210-foot "bulk freighter" ROBERT J. HACKETT. Bulk freighters had their pilothouses mounted forward to maximize visibility. Their machinery, like that of the steam barges, was placed in the stern. Most bulk freighters had three or four tall masts. They carried sails until around 1890.

Bulk freighters were profitable because they carried large quantities of bulk commodities economically. Few bulk freighters measured less than 200 feet in length. These long, narrow shoal-draft steamers were characterized by very heavy longitudinal framing. A huge oak keel ran down the center, flanked on either side by a series of parallel "side keelsons" laid on top of the ship's transverse frames. These side keelsons distinguish wooden bulk freighters from other vessel types because they are one of the most prominent, durable elements of the ship's construction. No other Lakes vessel used these multiple, heavy members, which measured from twelve to eighteen inches square and ran the entire length of the ship. In addition to the heavy keelsons, the wooden bulk freighters were reinforced with iron straps that criss-crossed the frames every six to eight feet, and a heavy band of 3/4-inch iron ran the length of the ship just under the rail.

From the time the R.J. HACKETT was launched in 1869, until shipbuilding was suspended in the Panic of 1873, forty-seven bulk freighters averaging just over 1,000 gross tons were constructed. The V.H. KETCHUM, built in 1874, was the largest in the fleet at 12,661 gross tons. When shipbuilding resumed again in 1880, even larger bulk freighters were launched. One hundred seventy were built during the 1880s alone. Almost without exception, each had at least one consort barge built to run with it, usually of similar dimensions and tonnage. The typical bulk freighter built in 1890 was of 2,200 gross tons, and averaged 260 feet in length. The growth in vessel size was facilitated by improvements to shipping channels and locks.
The next significant event in the evolution of Lakes bulk freighters was the introduction of iron and steel to shipbuilding. The iron propeller MERCHANT was constructed at Buffalo in 1862. It represented the first attempt by the American Lakes shipping industry to adopt the new technology. Her success led to the construction of several more iron propellers and package freighters during the 1870s. Most had long, profitable careers.

The first bulk freighter built of iron was the "monster" steamer ONOKO, a 287-foot giant, almost thirty feet longer than the largest wooden craft then afloat. The novel craft had double-bottoms with water-ballast tanks, and was designed to carry 3,000 tons of ore on a fourteen-foot draft. She created quite a sensation. It was said that the ONOKO made money when few other craft in the industry could generate profits. She averaged $25,000 to $40,000 annually. For nearly ten years, the ONOKO carried the largest cargoes on the Lakes. The SPOKANE was built of mild steel in 1885. Soon afterward the industry adopted steel for all subsequent vessel construction.

Metal ships offered many advantages over their wooden counterparts. A 200-foot wooden ship required an oaken hull more than eighteen inches thick, while a similar vessel of steel had shell-plating no more than one-half inch thick and only one-eighth of an inch as heavy. Iron (and later steel) ships had much greater longitudinal strength than wooden ones, which made it possible to build larger hulls.

From 1869 to 1902, the largest wooden bulk freighters grew from 210 feet to 310 feet in length. Iron and steel freighters grew from the 287-foot ONOKO in 1882, to the 400-foot VICTORY in 1894, the 500-foot JOHN W. GATES in 1900, and numerous 600-footers by 1906.

After 1894, the shipbuilding industry began producing steel tow-barge consortia for the powerful new steamers. The barges were copies of the steam bulk freighters, often with the same dimensions, though not fitted with boilers or engines. Like their wooden forebears, they were towed up and down the Lakes. Thirty of these barges were constructed between 1894 and 1902, ranging from 350 to more than 500 feet in length. Some steamers towed barges in the grain trade as late as 1965. A few of the big barges were ultimately fitted with engines and converted into powered freighters.
Iron and steel also enabled shipbuilders to make safer, more efficient, and more easily maintained vessels. Metal construction also enabled designers and builders to adopt innovative concepts, such as the famous "whalebacks," which were designed by Duluth's Captain Alexander McDougall. McDougall conceived the idea of building steel ships which were round in cross-section like a length of pipe. They were strong, stable, and simply and cheaply built. With their pointed ends, they were hydrodynamically efficient. McDougall’s American Steel Barge Company built forty-one whalebacks between 1888 and 1898. Thirty-nine of them were built in the Twin Ports. There were fifteen steamships (including one passenger whaleback), and twenty-four barges in all. The whalebacks were an interesting and widely-publicized vessel type, but they were not the prototypes for modern bulk freighters, as some recent authors have claimed. Though successful for a time, they were outmoded for the iron ore trade not long after their introduction because newly-perfected unloading machinery required very large deck hatches and such large openings in the whaleback hulls created serious structural problems. Many of the whalebacks operated successfully in the grain and petroleum trades until the 1950s.

Steel ships continued to grow after the turn of the century with improvements in technology and changes in the methods of hull-framing. The earliest iron and steel ships had transverse (crosswise) framing, not unlike wooden ships, but spaced at wider intervals. The arrangement of side keelsons was also similar to that used in wooden bulk freighters. The keelsons were laid from stem to stern on top of the transverse frames. Later steel hulls had combinations of transverse and longitudinal framing. The standard since 1920 has been a system of longitudinal framing on the deck and bottom, with transverse framing in the sides. This system, with its particular emphasis on longitudinal strength, has enabled vessels to grow in size to 640 feet during the Second World War, 730 feet in 1958, and, with the construction of enormous new locks at Sault Ste. Marie, to 1,000 feet by 1973. While bulk freighters became more numerous in the 1880s and 1890s, other vessel types dwindled and eventually disappeared. Sailing craft were entirely displaced by steamers, except in the lumber trade, where they found a niche in later years as tow barges, though their rigging was cut away and their graceful bowsprits cut short. Steambarges lasted only as long as the lumber trade on the
Lakes. When the forests had been stripped away in Michigan, Wisconsin and Minnesota, and the supply of lumber was gone, the industry moved west. Most of the steam barges were simply abandoned and dismantled. By 1950, virtually every vessel type had gone from the Great Lakes with the exception of the specialized bulk freighter.

Minnesota shipwrecks of the bulk freighter type include the steam barges LOTTA BERNARD (1869), BELLE P. CROSS (1870), and M.C. NEFF (1888), the wooden bulk freighter HESPER (1889), the whaleback THOMAS WILSON (1892), the iron steamer ONOKO (1881), the steel BENJAMIN NOBLE (1909), the consort-barge MADEIRA, and portions of the LAFAYETTE (1900). The LOTTA BERNARD played a role in the pioneer era of local settlement. The BELLE P. CROSS represents the lumber industry of the North Shore at Gooseberry, where extensive rafting operations existed. The MADEIRA and LAFAYETTE were engaged in the Minnesota ore trade and were among the losses from the famous 1905 "Matawa" storm. The ONOKO was the prototypical metal-hulled bulk freighter. The THOMAS WILSON is an example of the locally-developed whaleback ships.

LOTTA BERNARD is a rare example of the transitional side-wheel powered steam barges which were only built for a few years. She was five years old at the time of her loss, and never underwent any structural changes. ONOKO was an enormously important vessel which demonstrated the far-sightedness of its designers and builders and ushered in a whole new age of economical transportation. THOMAS WILSON represents a vessel type of regional (Great Lakes) importance and particular local significance. Not only were the whalebacks symbolic of Great Lakes engineering audacity in the 1890s, but they were also one of numerous innovations made possible by the introduction of steel to shipbuilding. Her builder proved that these efficient ships could be built inexpensively by untrained laborers and compete effectively with traditional Lakes freighters. Built in 1870, the steam-barge BELLE P. CROSS is among the earlier of her type, and is one of a handful of steam barges specially designed for the Welland Canal trades. She and several sister-ships were built to trade from Lake Huron to Ogdensburgh, New York by way of the old ("Second") Welland Canal.
REGISTRATION REQUIREMENTS

In order to be eligible for the National Register, a bulk freight steamer must meet the requirements of significance and integrity as discussed at the beginning of Section F and must be at least fifty years old, in addition to satisfying one or more of the following criteria:

1) Under Criterion A, the vessel must be directly associated with a significant event or pattern of events relating to the historic contexts described under this property type. For example, the earliest lumber barges might be important under the Northern Minnesota Lumbering context. If associated with a particular industry, it must be clearly demonstrated that the vessel played a significant role in the development of that industry. In order to satisfy primary eligibility under Criterion A, the identity of the vessel must be established.

2) Under Criterion B, the vessel must be directly associated with a significant person or group relating to the historic contexts described under this property type. This association includes important captains, crews, or owners. For example, vessels owned and operated by the Minnesota Steamship Company or the American Steel Barge Company might be important to both the Iron Ore Industry and Railroads and Agricultural Development contexts. In order to be eligible under Criterion B, the identity of the vessel must be established.

3) Under Criterion C, the vessel must retain sufficient integrity of design to make it recognizable as a Great Lakes bulk freighter. If the vessel is significant on the basis of its machinery, that machinery must be present and retain integrity of parts and assembly to the level predicated by its significance. As Great Lakes bulk freighters represent an indigenous phenomenon, vessels of experimental or transitional design, or which embody the developmental phases of the type, are of particular significance.

4) Under Criterion D, the vessel and/or artifact scatter must clearly exhibit research potential to help understand lifeways, construction and repair techniques, design elements, mechanical
operation, or salvage techniques relating to the historic contexts described under this property type. Other valid research questions relate to site formation processes and the impact of post-depositional activities.

FOOTNOTES


4. Several side-wheel steam barges were built between 1864 and 1870, but they were not suitable for towing, and so had limited utility. LOTTA BERNARD, built at Port Clinton, Ohio in 1869 and lost off the Minnesota North Shore five years later, was such a craft.


United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Section number _F_ Page _41_

8. The side-wheel steamer S. CLEMEmT was actually the Lakes’ first vessel designed to carry iron ore, but she was not a success; she was built in 1863 and dismantled a few years later. James P. Barry, Ships of the Great Lakes: 300 Years of Navigation, (Berkeley: Howell-North Books, 1973), pp. 107–109; Bugbee, “Of Rabbits,”; Dwight True, Sixty Years of Shipbuilding, (Ann Arbor: Society of Naval Architects and Marine Engineers, 1956), p. 3.


PROPERTY TYPE 4: SMALL CRAFT ON LAKE SUPERIOR, 1854-1945

DESCRIPTION

Small craft in the Minnesota waters of Lake Superior are associated with the following contexts: Exploration/Fur Trade (1650-1840), Settlement and Fishing on Lake Superior (1854-1930), and North Shore Tourism and Recreation (1870-1945).

Within this document, small craft includes all types of working or pleasure craft less than fifty feet in length, regardless of vessel type or mode of propulsion:

Canoes included birch canoes, as well as canoes of sturdy canvas.

Rowing Skiffs employed on the open Lake were primarily plank-built and flat-bottomed, of Scandinavian design. Clinker-built, round-bottomed skiffs were popular in the more protected waters.

"Mackinaw Boat" is a term applied loosely to a variety of small craft ranging from sloops to schooners and catketches, of twelve to more than forty feet in length. Carvel-built or clinker-built, they could be double-ended or square-transomed, with lug or gaff rigs. On Lake Superior the most common variety was a clinker-built double-ender of about thirty feet with gaff schooner rig. Most were built of local cedar and pine.

Yachts, both sail and occasionally steam powered, were generally from twenty to thirty feet in length, though some were larger. Ice Boats were built on skates to ride on the frozen lake. One-design sailing yachts, twenty to over forty feet in length, and classed according to standardized design and construction, were introduced onto the Lakes for amateur yacht racing.

Steam, and naptha launches were generally open boats with awnings, ranging from twenty to thirty-five feet in length. Gasoline-powered cabin cruisers were factory-built and brought to Duluth by rail after the turn of the century. Gas-boats were locally-built commercial boats mounting gasoline engines. They were generally twenty-four foot round-bottomed craft with a square transom stern and an open cockpit.
SIGNIFICANCE

Small craft on Lake Superior are significant as representatives of specific vessel types, and as sources of information on boatbuilding technology, local commerce, maritime activity, commercial and recreational fishing practices and technology, and maritime culture. They are important to local subsistence, communication, transport, and development patterns.

Various classes of small craft have played important roles in the settlement and exploitation of the North Shore. More recently, small craft have played an integral role in the North Shore's recreation industry.

The decline of commercial fishing resulted in the disposal of many boats during the 1930s and 1940s. There are no known examples of fishing craft predating 1940 in Minnesota. These vernacular craft were of great importance to the region's growth and development, yet little is known about their design, construction, or use. There are no known examples of historic pleasure boats in the Minnesota waters of Lake Superior.

Exploration/Fur Trade (1650-1840)
Settlement and Fishing (1854-1930)

The introduction of small craft into the region was concurrent with the earliest settlement of North Shore locations. Virtually all of the pioneer settlers came to the North Shore in watercraft. Canoes and mackinaw boats carried settlers from Superior City and Duluth. Others arrived in the large steamboats plying Lake Superior from Sault Ste. Marie. In later years (after 1880), when coasting steamers ran up the shore from Duluth, fewer travellers used small craft for long-distance trips. Small boats were employed locally and in commercial fishing. Some birch canoes were used until the nineteenth century on the inland Lakes and the boundary waters. Most people preferred the more sturdy canvas canoes popular in New England since the 1840s, or the traditional strip-built rowing skiffs. The term "Mackinaw boat" is loosely applied to a variety of small sailing craft ranging from sloops to schooners and catketches, of twelve feet to more than forty feet in length, and including both
lug and gaff rigs. The hull designs of Mackinaws include clinker built and carvel-built craft, both double-enders and square-transommed varieties. There is no precise definition of a "true" Mackinaw. A series of similar sailing craft were used on the East Coast as far back as 1800. In those waters they were called "New England boats," or "No Man's Land Boats."²

Variation in Mackinaws is regional, suggesting that the various designs evolved from a common prototype and were adapted to the conditions of specific localities. The Mackinaws of Lake Erie were twelve to eighteen-foot carvel-built cat-ketches, usually rigged with lug sails. Those on Lake Huron were primarily square-transommed boats of twenty-eight or thirty feet, carvel-built, with gaff schooner rig. The Mackinaws of Lake Michigan and the Straits of Mackinac were most often carvel-built double-ended schooners or cat-ketches of eighteen to twenty-four feet. On Georgian Bay and on Lake Superior, the common variety was a clinker built double-ended craft of about thirty feet with gaff schooner rig. These boats were used throughout the nineteenth century. The style used around the Straits, a small carvel-built hull with a simple, cedar-pole, cat-ketch gaff rig is thought to be an example of the original form. Most Mackinaws were built of local cedar and pine.³

"Mackinaw boats" have long been identified with the Great Lakes. Though assumed to be products of early French tradition there is little to substantiate that theory. They may have derived from the New England boats mentioned above. Regardless of their origins, builders at Toronto, Detroit, Mackinac, and Georgian Bay ports produced Mackinaw boats for Lake Superior from the 1830s until at least 1880 or 1890. Though some were Frenchmen, most were English or Scotch craftsmen.

Small (twelve to sixteen foot) skiffs were locally built at Duluth and North Shore settlements after 1870. Boat-builders are mentioned at Grand Portage and Grand Marais in the 1880s, and at Hovland, Cross River, Tofte, and Grand Marais in the 1890s. Although there are few descriptions of these boats, surviving photographs show plank-built, flat-bottomed rowing skiffs with Scandinavian characteristics on the open Lake, and clinker built, round-bottomed boats in the more protected waters. The earliest builders were Frenchmen. After the 1880s, however, most were Norwegian immigrants.
North Shore Tourism and Recreation (1870-1945)

A few yachts, principally sailing boats, are mentioned in Duluth newspapers in the 1880s. Occasional steam yachts were also noted. Most ranged from twenty to thirty feet, though one or two of the more luxurious craft ranged up to sixty or seventy feet in length. Some of the larger yachts made occasional trips to the Apostle Islands, Isle Royale, or Port Arthur, but most sailed on Superior Bay or around Minnesota Point. Some were hired out or advertised for excursions.

The growth of boat clubs in the 1880s and 1890s fostered the development of pleasure boating, particularly in the Twin Ports. Extensive clubhouses, warehouses, docks, and bleachers were constructed to accommodate Club members. Frequent regattas and competitions were scheduled. A sizeable flotilla of small craft began to accumulate around Duluth, including rowboats, canoes, sailing boats of various descriptions, and rowing shells. One Duluth man bought rowboats and skiffs by the carload in the 1920s and sold them locally for $65.00 each. Ice-boats were also introduced during this time. None of these craft ventured far from the safety of Superior Bay or the lower St. Louis River.⁵

Standardized "one design" sailboats appeared soon after the turn of the century. Intended for amateur racing, they included a broad range of designs. Many were very modest boats. The one-design classes originated not only to maximize and regulate competition between boats, but also to minimize the cost of designing and building them. The system made boating more affordable to many people. Dozens of sailboat designs resulted from the movement. Some classes were more suitable than others for specific areas. There were few large one-design sailing boats around western Lake Superior, but the less-pretentious twenty-two foot Star-class, twenty-eight and thirty-eight foot Bilgeboard Scows ("Pancakes"), and twenty-one foot Shore Bird sloops were fairly common. Although these boat types originated around 1910, they did not appear in the Twin Ports until the mid-1920s. Similar craft were brought to nearby inland lakes in the 1930s.⁶

Steam and naphtha launches appeared in the 1890s. Gasoline launches followed not long afterwards. These were open boats with awnings, measuring from twenty to thirty-five feet in length. The Pearson Boat Works was organized at Duluth in 1895 to build small
powerboats. It became an important source for such boats for twenty years. Gasoline cabin cruisers made their first appearance around 1900, although there were few around the Head of the Lakes before the mid-1920s. Unlike earlier classes of small craft, most of these boats were factory-built and shipped to Duluth by rail.⁷ They were used primarily around Duluth and the Apostle Islands.

Gasoline engines were put into locally-built boats for commercial fishermen on the North Shore and at Isle Royale, where the most popular design was a twenty-four foot round-bottomed craft with square transom stern and an open cockpit; it was usually called a "gas-boat". A.J. Scott started building fishing craft at Grand Marais in the 1890s. Charles Hill began building them at Larsmont around the turn of the century. Hill ultimately constructed nearly 200 boats, many of them gas-boats. His son Reuben continued the tradition into the 1960s.⁸

Aside of a handful of liveries for canoes and small rowing skiffs, there were few boating facilities along the North Shore before 1940, and little pleasure boating. Most of the available boats were rented by resort-operators at Beaver Bay, Hovland, Cross River, Lutsen and Grand Marais. The opening of the North Shore highway in the 1920s and its improvement following World War II brought a dramatic change in the recreational usage of the area. The highway brought a gradual increase in the resort business, and after 1950, with the advent of trailer-boating, there followed a general proliferation of recreational boating and fishing all the way from Duluth to the Canadian border.

No wrecks of historic small craft are presently recorded in Lake Superior, although the remains of one or two have been uncovered in the course of harbor improvements at Duluth in recent years. There are no known examples of mackinaw boats despite their widespread use for at least a century. Numerous small fishing craft have been abandoned at Isle Royale where they may still be seen.⁹ Similar vessels would be expected at North Shore commercial fishing locations.
REGISTRATION REQUIREMENTS

In order to be eligible for the National Register, a passenger and/or package freight steamer must meet the requirements of significance and integrity as discussed at the beginning of Section F and must be at least fifty years old, in addition to satisfying one or more of the following criteria:

1) Under Criterion A, the vessel must be directly associated with a significant event or pattern of events relating to the historic contexts described under this property type. For example, a boat which carried early settlers or provisions under the Settlement and Fishing context, or a successful racing yacht or excursion vessel under the Tourism and Recreation context. If associated with a particular industry, such as fishing, it must be clearly demonstrated that the vessel played a significant role in the development of that industry. Eligibility might also be established through association with important local events. In order to satisfy eligibility under Criterion A, every effort should be made to establish the identity of the vessel.

2) Under Criterion B, the vessel must be directly associated with a significant person or group relating to the historic contexts described under this property type. The association includes important captains, crews or owners. For example, a yacht that was owned and raced by an individual of distinction under the Tourism and Recreation context or a canoe associated with an early settler under Settlement and Fishing. In order to be eligible under Criterion B the identity/ownership of the craft must be established.

3) Under Criterion C, the vessel must retain sufficient integrity of design to make it recognizable as a small watercraft. There are many different types of small craft, but very few good examples have been documented on the Great Lakes. A craft may be eligible under Criterion C if it is the best typical (or only known) example of a craft of its type, either in an overall sense, or with regard to a specific feature or component part, or if it exhibits important evidence of shipbuilding and/or ship repair techniques employed on the vessel. If the vessel is important on the basis of a specific structural component or design element, that component or feature must retain demonstrable integrity. If a vessel is significant on the basis of its machinery, that machinery must be
present and retain integrity of parts and assembly to the level predicated by its significance. The high degree of variation within the numerous types of small craft, coupled with the dearth of documentary and anecdotal supporting data, suggests that most extent examples of Great Lakes small craft that can be associated with specific historic contexts would be of particular significance.

4) Under Criterion D, the vessel and/or artifact scatter must clearly exhibit research potential to help understand lifeways, construction and repair techniques, design elements, mechanical operation, or salvage techniques relating to the historic contexts described under this property type. Other valid research questions relate to site formation processes and the impact of post-depositional activities.

FOOTNOTES


3. A schooner has two (or more) masts, with the main mast at least as tall as the foremast. A ketch has two masts with the main one shorter than the fore. The latter is referred to as a "cat-ketch" if the foremast is stepped right up in the bow. Paul James Barry, "Mackinaw Boats & Collingwood Skiffs," Yachting, (November, 1940), pp. 35-37, 74-76; Paul James Barry, "Huron and Haywood Boats," Yachting, (April, 1942), pp. 41-43, 76; Chapelle, Sailing Craft, 177-185; John T. Nevill, "Skeleton of Mackinaw Boat Lies Rotting on Hessel Bay," Telescope, Vol. 4, No. 8 (August, 1955), pp. 3, 5-8.


G. Summary of Identification and Evaluation Method

Discuss the methods used in developing the multiple property listing.

H. Major Bibliographical References

See continuation sheet

Primary location of additional documentation:

☐ State historic preservation office
☐ Other State agency
☐ Federal agency

☐ Local government
☐ University
☐ Other

Specify repository: ____________________________

I. Form Prepared By

name/title Charles Patrick Labadie
organization
street & number 5103 Beaver Creek Lane
city or town Hermantown
date 30 August 1990
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state Minnesota
zip code 55811

See continuation sheet
SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The preceding Historic Context Statements and Draft Multiple Property Documentation Form for the Shipwreck Sites of the Minnesota Waters of Lake Superior was prepared under contract for the Minnesota Historical Society. It is a part of the preservation planning process delineated in the National Historic Preservation Act of 1966 to identify, evaluate, and protect the nation’s historic and archaeological resources.

This document was prepared according to the requirements of The Secretary of the Interior’s Standards and Guidelines for Archaeology and Historic Preservation, using the information provided in National Register bulletins 16 (Guidelines for Completing National Register of Historic Places Forms) and 20 (Nominating Historic Vessels and Shipwrecks to the National Register of Historic Places), and the Minnesota Historical Society’s "Supplemental Instructions for the Preparation of National Register Forms". Guidance was generously provided by Dennis Gimmestad, Deputy State Historic Preservation Officer for Minnesota, Britta Bloomberg, Historic Preservation Program Specialist for the Minnesota Historical Society, and Scott Anfinson, Minnesota Historical Society Archaeologist. James P. Delgado, National Park Service Historian and Chief of the National Maritime Initiative in Washington, D.C., and Carol Schull of the National Register of Historic Places both provided much helpful advice. This form was revised by Brina J. Agranat, with Stephen R. James, Jr., and Tim S. Mistovich, of Panamerican Consultants, Inc., under contract to the Minnesota Historical Society based on their own review of the document, as well as comments by the Society and David Cooper, Maritime Archaeologist for the State of Wisconsin.

The basic goals of the project were: (1) to develop those historic contexts which relate to northern Minnesota’s maritime archaeological resources so that those contexts could be used as the basis for evaluating shipwreck sites; (2) to differentiate, define and document the evolution of water-craft as historic property types associated with the above contexts; and (3), to develop draft criteria for the nomination of shipwrecks to the National Register of Historic Places. No actual survey of shipwreck sites, nor field investigations were a part of this project.
Implementation of the project was begun with an investigation of requirements for format and content, with a study of the above National Register publications, and a review of previously prepared studies and nomination documents. Several Thematic Group and Multiple Property Forms were consulted. The document's basic outline was developed as a result of these investigations.

Research was begun by identifying the principal bibliographical resources. Records were consulted at the University of Minnesota's Wilson Library in Minneapolis, the James J. Hill Reference Library in St. Paul, Bowling Green University's Institute for Great Lakes Research in Perrysburg, Ohio, the Northeast Minnesota Historical Center, Duluth Public Library, and the U.S. Army Corps of Engineers Canal Park Museum in Duluth. The computerized Dissertation Abstract Service was also consulted at the University of Minnesota's Duluth campus. Appropriate reference materials were identified for development of the historic contexts, and intensive research was undertaken. Good overviews of major patterns of Minnesota history were provided by Theodore Blegen's *Minnesota: A History of the State* and Walter Van Brunt's *Duluth and St. Louis County, Minnesota*. George Quimby's *Indian Life in the Upper Great Lakes* and Tim Roufs' *Early Indian Life in the Lake Superior Region* were wonderful resources. Harold Innis' *Fur Trade in Canada*, John Fritzen's *Historic Sites and Place Names of Minnesota's North Shore*, and David Walker's *Iron Frontier* were essential. Numerous scholarly articles in *Minnesota History* also proved helpful. The contexts were developed with a special sensitivity to the maritime aspects while attempting to retain a focus state wide or region wide.

Delineation of property types was relatively simple. Broad categories of ships and small craft were identified and described, and their development was traced in such works as Howard I. Chapelle's *History of American Sailing Ships*, John Morrison's *History of American Steam Navigation*, and J.B. Mansfield's *History of the Great Lakes*. Empirical research into the introduction and evolution of various classes of Great Lakes ships was based largely on manuscripts developed by the author from contemporary ship registries, directories, and official U.S. and Canadian government enrollments. Supporting data was gathered during more than thirty years of research on nineteenth century Great Lakes shipbuilding technology. Knowledge of Lake Superior vessels was gained from a survey of the marine columns in regional
newspapers from the 1850s through the first decades of the twentieth century, and from a study of the Ship History files at the Dossin Great Lakes Museum in Detroit, the Institute for Great Lakes Research in Perrysburgh, Ohio, the H.G. Runge Collection at the Milwaukee Public Library, and the U.S. Army Corps of Engineers Canal Park Museum in Duluth.

Registration requirements within each property type discussion were extensively revised by Brina J. Agranat, with Tim S. Mistovich and Stephen R. James of Panamerican Consultants, under contract to the Minnesota Historical Society.
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