

HISTORIC MINING ON ISLE ROYALE

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FRONT COVER: *The Richard O'Neils—A mining family at Windigo.*
Fisher Collection photo about 1892.

INTRODUCTION

The Earliest Miners

Copper mining on Isle Royale is no recent thing—in fact it has spanned a period of more than 4,500 years. When man first arrived in the New World, perhaps 15,000 to 20,000 years ago, Isle Royale was still covered with thick glacial ice. By the time the ice receded from the Lake Superior Basin and Isle Royale rose above the waters of the lake about 10,000 years ago, Indians already had begun to occupy parts of the Upper Great Lakes.

It will never be known when the first man ventured out across Lake Superior to Isle Royale, but by 2,500 B.C. or shortly thereafter, North American Indians began to exploit the pure copper deposits that were exposed on the surface of the island. Archeologists feel that the Indians may not have deliberately prospected for copper, at least at first, but in the course of their travels about the island, they would watch for nuggets and veins of the bright metal. Eventually a method was developed of extracting the raw copper from the bedrock by beating it free with rounded, hand-held beach cobbles. Thus, numerous pits were dug in the most productive locations on the island, especially along Minong Ridge. Recent archeological excavations have uncovered large numbers of hammerstones from the ancient mines which are now filled in by soil and covered with vegetation.

More than 1,000 pits attributed to the Indians have been located on Isle Royale, but since the activity covered a period of at least 1,500 years, there is no basis for suggesting any highly organized efforts to procure the copper. Rather, the mining probably was pursued in the course of an annual round of hunting, fishing, and collecting berries and plants. The copper itself was cold-hammered into knives, points, and a variety of ornaments, either on Isle Royale or taken to the mainland and then worked. Artifacts of Lake Superior copper ultimately made their way to the southern Lake States and New England. Unfortunately, very little is known about the way of life of these earliest miners, since no habitation sites from the mining period have been located on Isle Royale.

A fuller description of the Indian visits is left to another writer. This booklet narrates the chapters of more recent mining activity, starting in the 1840's and ending at the turn of the century.

Historic Mining

Mining frontiers in the United States have followed a common pattern. Historically, they have been important in that they often brought the first permanent white population to isolated or uninviting areas. They have typically begun by a discovery or rumors of precious metal. Mining of a simple type led to the establishment of settlements, roads, and other facilities. Dwindling deposits often caused an equally rapid decline in

population, with perhaps a few of the better-financed companies staying on. As time went on a very different type of mining would develop based on the use of heavy machinery and the advice of trained mining engineers and geologists. Eventually, in most areas, the deposits played out, and tourism or ranching replaced the mining.

Isle Royale followed this pattern in many ways. There was an early boom-and-bust period, lasting from 1843 to 1855; a lull, and then a revival of mining activity from 1873 to 1881; again a decline, and then a final flurry of mining from 1889 to 1893, ending with a shift to tourism and commercial fishing. Yet Isle Royale is also unique among mining frontiers in several respects. The linking of prehistoric mining with the recent era established a far longer time interval in mining history than on other frontiers; fishing and tourism played a greater and earlier part as supplementary economic activities; and the area, in its final stages, attracted large foreign investment.

THE FIRST MINING FRONTIER

The first mining explorations on Isle Royale began in 1843, after the Chippewa Indians relinquished claim to the island under a treaty of that year. Previously the only white men living on the island were seasonal fishermen, using the fish houses erected by the American Fur Company between 1837 and 1841. A few mineral locations were filed in 1843 under permit from the War Department; however, the main rush did not begin until 1846, partly because of the more accessible deposits on the mainland, partly because of an erroneous belief that mining rights under the existing mining laws did not extend beyond the south shore of Lake Superior. In 1846, however, a rush began that reached its peak the following year, then rapidly declined and came to an end in 1855.

The presence of copper on Isle Royale was a matter of common knowledge by 1843, with information ranging from Jesuit accounts and tales of American Fur Company fishermen to formal geological reports. To this impetus could be added the boom spirit of the time, an abundance of venture capital, and a highly unrealistic estimate of the ease by which fortunes could be acquired through copper mining. One 1846 guide to the mines presented a commonly held belief:

The cost of getting ore to the surface, on Lake Superior, is about four dollars per ton, one hand being able to get out about half a ton per day. The cost of smelting or washing, so far, is about half that price—say altogether about six dollars per ton. If the ore yield 25% of metal, it is worth, at sixteen cents a pound, eighty dollars; thus leaving a large margin for profits, after paying the expenses of working the mines.

Mining operations were carried on by stock companies incorporated in various states—New York, Vermont, Ohio, Michigan, and Illinois were among those represented. At least a dozen such companies had locations on Isle Royale in 1847. The companies varied a great deal—some having professional geologists or mining engineers as agents and advisers, and

a respectable amount of capital; others poor in everything except hope and courage; and still others that apparently existed only to sell stock.

Prospecting was simplicity itself. A promising fissure or contact vein or dike would be located, sometimes from a boat, sometimes by burning off the vegetation to expose the bedrock. The vein would be followed up, with miners excavating and blasting as they went along, and if the prospects looked promising a shaft would be sunk. As a result, in addition to the established mines, there are hundreds of sites where such explorations are evident. The mining locations were spread around the periphery of the island, like beads on a string, from Malone Bay to Rock Harbor and around to Washington Harbor.

The Miners

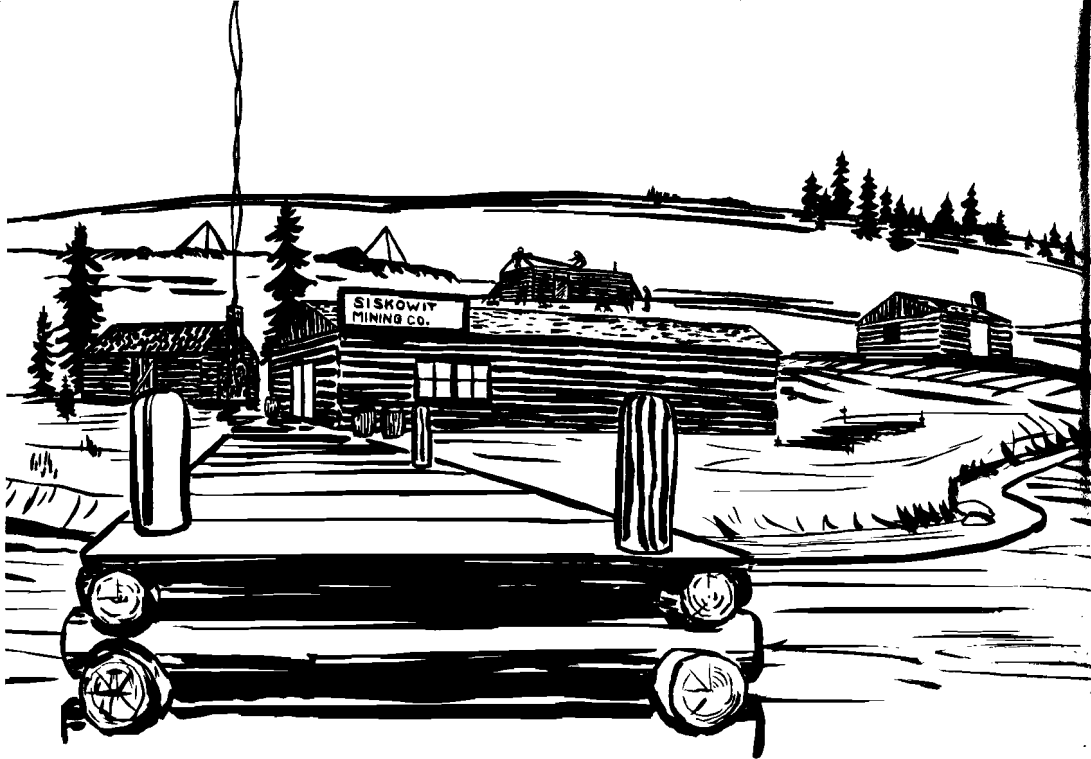
Workers were divided into surface men and miners. The surface men worked above ground for wages of about a dollar a day. They cut timber, erected machinery, cleared land, set up tramways, and moved waste rock. Their usual costume consisted of heavy leather boots, canvas trousers, red flannel shirts, and low-crowned, broad-brimmed hats. Of special importance among this group was the blacksmith, whose job it was to sharpen drills and repair metal work.

The miners, on the other hand, worked on a contract basis of so much per foot dug. In the Siskowit silver mine at McCargoe Cove, for example, the miners got \$20.00 per fathom. Out of this, however, they paid for their supplies—black powder, fuse (at \$2.50 for five hundred feet), and tallow candles (15c per pound). The drills, however, were sharpened at company expense. In charge of each operation was an agent, or superintendent, who directed surface operations and made contracts and purchases. Below ground a mining captain was boss.

Many of the mining locations consisted of only one or two log cabins. The more substantial settlements—those at Ransom, Siskowit Mine, Snug Harbor, and Todd Harbor—followed a standard pattern. The agent resided in a house of squared logs, while miners lived in crude log cabins. At the Siskowit Mine, in addition, a dozen single workers lived in a combination storehouse and barracks. The grass and vegetation around the settlements was burned to keep accidental fires from destroying the place. Vegetable gardens of potatoes, peas, lettuce, and radishes were grown at Snug Harbor, Ransom, and Siskowit Mine, while the Siskowit operation had extensive hay pastures for their horses. Fish, potatoes, and tea were staples of the miners' diet, supplemented with beef brought in from the mainland.

The sparse population of the island reached a peak of about 120 in the summer of 1847. Most of the men were evacuated each winter, leaving only a skeleton work force.

Life was hazardous, with many injuries and deaths due to drowning, mine accidents, or sheer lack of medical attention. C. G. Shaw in his diary tells of attacks of piles and dysentery, a toothache cured by rather



*The Siskowit Mine location—as it may have appeared in 1847.
Sketch by Stephen D. Veirs, Jr.*

drastic home dentistry, and an accident in which he nearly cut off his great toe. If this weren't enough, he was nearly blinded by bites from mosquitoes and black flies, nagged by the women in camp, and had to put up with insubordination from his Irish workmen! Yet there were compensations. Fishing, rock collecting, and visiting other mines were the chief forms of recreation, and the arrival of the mail boat was always a red-letter day. Trails were built between locations, notably between Ransom and McCargoe Cove, from Siskowit Mine to Malone Bay, from Washington Harbor to Huginnin Cove, and from Huginnin Cove to Todd Harbor. However, most travel was by water.

Mine Operation

Copper was classified in the Lake Superior country in three grades according to its state of occurrence in the rock: "mass," "barrel-work," and "stamp." Masses were large sheets of pure copper occurring in the vein, and weighing from a few hundred pounds to many tons. Smaller masses were taken from the mine intact; larger chunks were divided by means of chiseling. Barrel-work consisted of smaller pieces of copper in bundles and string-like form, bound together with veinstone—the worthless rocky material in the ore bearing vein. With these, as much of the adhering

rock as possible was picked free with a hammer, and the copper was barreled up in casks holding from 500 to 800 pounds. Stamp copper consisted of pebble-sized or smaller pieces of metallic copper bound in rock which had to be pulverized by stamping. In this process, the ore was first roasted to make the veinstone friable, so it would yield to the blows of the stamps. The stamp mills consisted of a series of heavy metal shoes, operating from a cam shaft driven by water or steam power. The shoes would crush the ore, and the metal would be separated from the copper through a series of washings.

Most of the copper shipped from Isle Royale—the ore was taken down the lake to Sault Ste. Marie, and thence across to the lower lakes to be smelted—was mass or barrel work. Only two stamp mills operated on the island during this first frontier.

The underground workings consisted of vertical shafts about six feet by eight feet sunk to a suitable depth—generally about sixty feet—where stoping would begin, that is, excavation of the ore made accessible by the shaft. Black powder was used to loosen rock and aid in excavating. The miners, dressed in canvas trousers and stout boots, with candles held on their hard hats by means of a lump of clay, would descend into the mine by ladder, and work an eight or ten hour shift. Rock was hoisted out by means of wooden ore buckets. Hand windlasses were used to hoist the ore to the surface in smaller operations; in the more substantial mines hand work was superseded by horse-powered hoists.

Ventilation and water were the two major problems of mining. The black powder fumes polluted the air, already foul as the shaft grew deeper. To combat this it was a common practice to dig a drift or "winze"—a horizontal tunnel—to another shaft. Water was always troublesome. Where the terrain was favorable, horizontal tunnels (adits) were dug from the surface to connect with the shaft and drain surface water. In the deeper mines steam pumps had to be used.

Most of the mining prospects in the 40's and 50's were short-lived and of little importance. Four, however, are significant. Consult the map, inside the back cover, for locations.

Smithwick Mine

The Smithwick Mine was one of the earliest established on Isle Royale and is probably the one most often seen by visitors today. It was located in July 1843 by James Smithwick and worked by his agent, C. G. Shaw. Active work began in 1847, when a blacksmith shop, a root cellar, and several dwellings were built, some near the mine, some just to the east of the present Rock Harbor marina. Two shafts were started, and a great deal of exploration in the vicinity was carried on. By 1848 the main shaft had been sunk to the depth of 90 feet. Little copper was found, and we have no record of commercial production. The present remains of the prospect consist of four shafts, on a north-south line, along the Moose Trail leading from Snug Harbor.

Ohio and Isle Royale

The Ohio and Isle Royale Company, like the Siskowit, was given permission by the Secretary of War to file on Isle Royale locations between Rock Harbor and Chippewa Harbor. A townsite named Ransom, after the Agent, Leander Ransom, was soon established. In 1847 forty or fifty men cleared land, built houses, planted a garden, and explored on the ridge north of the townsite for copper. Early prospects looked promising, and a smelter was built that year.

The venture was short-lived. The smelter was poorly constructed and did not work satisfactorily; their explorations did not prove rich enough in copper to justify working, and in 1849 the company left the island and located just east of Houghton on Portage Lake. Fire destroyed the mining buildings at Ransom in 1866. Ransom was subsequently the site of a sawmill, a garden supplying vegetables for Rock Harbor Lodge, a CCC Camp, and today is the location of Daisy Farm Lakeside Camp.

Pittsburg and Isle Royale

This company, incorporated in Pittsburg about 1846, began its mining activities in 1847 in the Todd Harbor area. In that year two log cabins and a blacksmith shop were erected, and nine men worked on a shaft near the shore. The following year they made other explorations, mostly near the shore, but one about a mile south of the shore. Here they reached a depth of 225 feet and then found the pumps unable to cope with the water. By 1849 they struck profitable veins, mostly mass and barrel-work, near the lake and later had 25 men employed and a stamp mill under construction. Their last year of recorded production was 1853; they apparently closed operations because of the isolated location and lack of protection from northerly gales.

Siskowit Mining Company

This company went through a series of early changes, beginning as the Isle Royale Union Company in 1844, reorganizing as the Siskowit Mining Association in 1847, and becoming the Siskowit Mining Company in 1849. For our purposes we can consider these companies as the same. In its final form it was incorporated in Michigan, with directors from Washington, D. C., Wisconsin, and Philadelphia, and had Charles Whitteley, an eminent geologist and business man, as agent. Preliminary explorations were carried on in 1844, but little was done until 1846. In that year the company established headquarters in an old fishing cabin (possibly remaining from the American Fur Company venture) across from Mott Island. The agent, together with his work force of a blacksmith, a carpenter, and two laborers, explored Mott and Outer Hill Islands. They excavated 600 pounds of rock, discarded 200, stamped the rest with the aid of a beach boulder and a swing pole, and recovered rock having 15% copper in it.

But soon they abandoned this location for a more promising one on the main island. During the winter they sank a shaft in a vein of chlorite and epidote near the cabin and about 80 yards from the shore. The next year they blanketed the north shore with locations from Washington Harbor to McCargoe Cove, in many cases taking over prospects abandoned by other companies. Of these north shore locations only one proved to be profitable, a combination silver and copper mine near McCargoe Cove. They excavated a drift here for sixty feet and began stoping, recovering some silver and copper; but this mine seems to have been abandoned by 1849.

By 1850 work centered in the Rock Harbor location across from Mott Island. The settlement soon included a large hewed log house for the agent, numerous shanties for the workers and their families, and a log storehouse with barracks in it for a dozen single men. A steam stamp mill was set up in 1850 with water obtained from the lake by means of a large Cornish pump. The original vein was abandoned for another about 200 yards to the north and east, where a long adit was dug to lake level for drainage, and several shafts sunk along the vein. The deepest reached 360 feet.

"Poor rock" pile of the Siskowit Mine as seen from Rock Harbor.



The original plan had been to send the ore by flatboat two miles down the harbor to the Ohio and Isle Royale Smelter, but this failed. One load was shipped and smelted, but as Charles Whittlesey remarked, "The product therefrom, either from some defect in the furnace or want of skill in running the smelter, was only 2670 pounds of badly smelted copper." Later loads were shipped down the lake to the smelters in Cleveland or Detroit.

In the winter of 1852-3 the stamp mill burned. The whole work force then took to the woods, cut timber, and had it hauled to the mine site by the only horse on the island, an animal that was old, blind, and lame. There saw pits were set up, the timber whipsawed by hand, and a new mill was ready for installation of machinery by spring.

The Siskowit prospered for some time, producing 190,736 pounds of refined copper between 1847 and 1855. But the geology of the site worked against the venture. The upper stratum of rock was rich in masses, barrel stock, and stamp copper, but it dipped toward the lake. Consequently the miners, in order to get at the largest bodies of ore, had to excavate under the lake, and more water came in than the pumps could handle. Beneath this stratum was a hard layer of basaltic rock in which the vein pinched out. These factors, coupled with financial difficulties, caused the mine to close in 1855.

End of the Boom

The mining boom came to an end as rapidly as it had started. By the end of 1847 about half the companies that had been in operation the earlier part of the year were closed. By 1850 only two companies were in operation, and in 1855 the last of these companies closed up. There were a variety of reasons for this collapse of the boom. A change of the mining law, from lease on a royalty basis to sale, was made in 1847, which forced many of the marginal or speculative enterprises to cease operations. The isolation of the island placed it at a disadvantage to the mainland operations. Above all, however, was the fact that the stamp rock on Isle Royale was not very rich in copper, and only by producing masses and barrel work could the mines have prospered.

THE SECOND MINING FRONTIER

The period between 1855 and 1871 was marked by a lull in mining activities. No mines operated during this time, and the island was uninhabited save by fishermen who, during the summer, occupied the old American Fur Company houses in the Siskiwit Bay area and on Fish Island. In summer visitors came over at frequent intervals on vessels ranging from Mackinaw boats to excursion steamers carrying up to 200 passengers. They picnicked in the clover fields at the Siskowit Mine site, fished, and enjoyed the island much as visitors do today.

But the Civil War needs for metal soon caused a rise in the price of copper at a time when national land laws were favorable for speculative buying at low cost. The North American Mineral Land Company—closely



Mining family portrait. Miners brought their families to Isle Royale during the later periods. Fisher collection photo, about 1892.

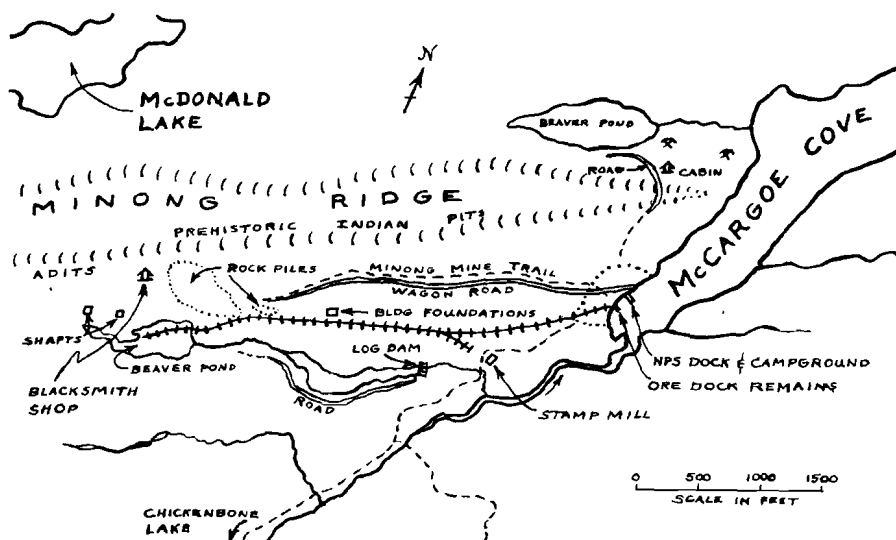
connected with the Quincy Mining Company in Hancock, Michigan—began buying up the island, first by use of Connecticut state agricultural college scrip and later by direct purchase at \$1.25 an acre. Soon they had purchased 70,000 acres, their holdings including most of the island outside the sandstone belt south of Siskiwit Bay. Their original intention was to revive the operations in the Rock Harbor, Todd Harbor, and Huginnin Cove areas, and to this end they corresponded with former mining captains who had worked in those sites. In 1871 they sent explorers to the island. As a result of their reports three new mining ventures began, one to the north and two on the south side of the island.

In these three undertakings we find much that is common to the second stage of the mining frontier. Trained mining engineers and geologists with a new technique—diamond drilling—supplemented the old haphazard search for outcrops. With more reliable and regular transportation by lake steamer the settlements enjoyed more amenities of life. Schools were established in all the later settlements; physicians and clergymen were represented in the population. The population makeup also changed. Except for the Siskowit Mine which used Cornishmen, the labor force in the earlier mines had been Americans, Germans, or Irish. After 1870, other nationalities appeared, and specialization took place. Cornish

miners migrated to Isle Royale, as they did to all parts of the Copper Country, and took over the underground activity. Finns and Norwegians were used as wood crews, and Germans and Irishmen as laborers. The new mining ventures had close financial ties with mining interests on the mainland, particularly with the Quincy interests.

Minong Mine

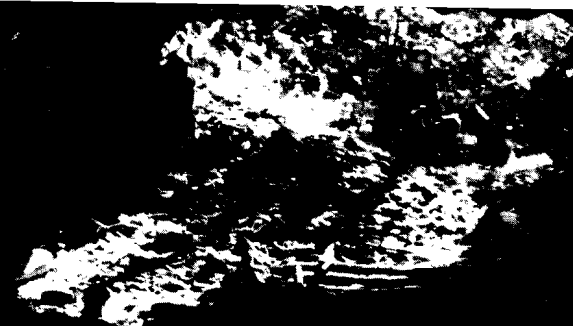
Near Minong Ridge in the McCargoe Cove area are hundreds of pits left by Indians who had mined for copper masses. These pits attracted the early attention of miners, and in 1874 three companies were formed in Detroit to exploit them—The Minong, the Cove, and the Ancient Mining companies. Of these three only the Minong was active; but the companies were essentially the same, since they had virtually the same officers and the same board of directors. The Minong Company obtained title from the North American Mineral Land Company to 1,455 acres along Minong Ridge. A year later they acquired the 1,190 acres of the Cove



Vicinity map of the Minong Mine site at McCargoe Cove.

Company. With these holdings, virtually all the land between Lake Superior and Chickenbone Lake and west to Todd Harbor, was in their hands. S. W. Hill, who had been in charge of the exploring companies, described the possibilities in glowing terms. Abundant timber, he said, was available and well located; one road would command all the veins; and the old Indian workings would serve as guides to the best bodies of ore.

Work began in earnest in 1875. A substantial dock and warehouse were built at the mouth of McCargoe Cove, where lake steamers could



A horizontal shaft, or adit, at the Minong Mine.

unload goods and load copper ore. A tug and flat boats were used to transport goods through the narrow Z-shaped entrance to the cove and up two miles to the mine settlement. On September ninth Alonzo C. Davis, the agent, wrote, "The past three days have been big copper days for Minong." During this time they had taken out one mass weighing 6,000 pounds, another of 3,500-4,000 pounds, and still another of 2,500-3,000 pounds, besides much barrel stock and stamp copper. A wagon road had been built from the shore to the mining area and a railroad started, with about 600 feet of track laid at each end. Six dwellings had been completed in addition to a store and an office building. Fifty men were employed.

That winter was a hard one, with too much ice for boats and not enough for travel over the ice. Directors of the company, who had expected to have regular mail service by way of Pigeon River, became alarmed over

Remains of the railroad leading from the Minong Mine to McCargoe Cove.



the lack of communication—so alarmed, indeed, that one director tried to get in touch with Davis through a medium. "Madame Blank" duly obliged with tales of large production in copper and silver. It is unlikely that Davis appreciated this attempted communication; his letters show him to have been a crusading agnostic! By May, however, Davis could report that the colony was still alive. During the winter they had taken out thirty tons of mass and barrel work, and a large pile of stamp rock. The population had remained static: two men had drowned in trying to carry mail to the mainland, and two children had been born.

There followed flush years for the Minong, with high production. Though two shafts were sunk, one to a depth of 300 feet, most of the work was a quarrying operation by means of open pits. A stamp mill was built powered by steam and obtaining water from a 12-foot high log dam on a tributary to Chickenbone Creek. A railroad led from the dock to the mine site; a spur of the railroad ran to the stamp mill, and another from the stamp mill to the ore dock. The blacksmith, with his shop located at the mine itself, must have been in great demand to shoe the many horses needed in hauling ore cars from the excavations to the railroad loading platforms and to repair the metal machinery. As the mining settlement grew, a schoolmaster was hired. Prosperity and a demand for self-government led to the establishment of Isle Royale County, with the county seat at Island Mine and the Minong settlement of Cove as a separate township.

By 1879, however, production began to fall off. Some of the difficulties were due to poor management, but more to poor rock. So long as large masses were available the mine prospered; but the stamp rock, about 1½% copper, could not be stamped and transported profitably. As the *Ontonagon Herald* remarked, "The ancients got the juice and left us moderns little but the acrid rind to nibble at." From 1881 to 1883 it was let on tribute—that is, leased for a share of the proceeds—and by 1885 it closed completely.

1964 remains of the Minong stamp mill dam, built in the 1870's.



Minong Mine blacksmith shop, today roofless and disintegrating, located near the mine.

Island Mine

On the south side of the island an equally ambitious but shorter-lived operation grew up. S. W. Hill's party discovered a large number of Indian pits to the north of Siskiwit Bay. The Island Mining Company was organized in 1873, and that fall a force of 80 men reported for work on the island. With over 400,000 board feet of lumber shipped to the island, they laid out a townsite on the north side of Siskiwit Bay and built a road two miles to the mine. The group passed the first winter without incident. On March 19, 1874 two men wrote to the *Portage Lake Mining Gazette* from the settlement:

Rev. Father Baxter, Jesuit missionary, arrived from Silver Islet yesterday, accompanied by three men, leaving there the day before. Today the reverend gentleman is busy among the Catholic population. He reports the ice strong, and thinks a horse team could cross with safety between here and Silver Islet. A number of people have crossed on the ice this year to visit us. It seems strange owing to the fact that the weather has been reasonably mild and pleasant; still, the ice is strong. We are not so isolated after all. Our people are all well and in good spirits. There has not been a single case of sickness, nor one injured at the mine. Four men met with an accident while quarrying rock at the dock last fall, but they are all out now. Everybody seems to be contented, and there has not been a single breach of peace since close of navigation. This is not bad for a population of 130 people.

Yours truly,
Pick and Gad

During the next two years ambitious plans were carried out. Three shafts were opened, ultimately reaching depths of 50, 150, and 200 feet, the deeper ones connected with one another by drifts. A village was built at the mine location, a large hoist was hauled in, and a stone powder

house constructed at Senter Point. A sawmill was set up, probably at the mouth of Caribou Creek. Original plans had been to build a stamp mill by the shore, to flume water down from a dam near the mine site, and to build a railroad from the mine site to the stamp mill. However, only part of this was accomplished. A massive earth-fill dam was constructed, and a railroad bed laid down as far as the creek on which the dam was located. Then came a series of disasters. The dock and warehouse burned in 1874, and the fire swept nearly up to the mining location. The price of copper fell. Investors lost confidence. On September 23, 1875, the *Portage Lake Mining Gazette* reported that all work on the Island Mine had ceased. The conglomerate, rich enough near the surface, had become poorer at



Present day remains of the stone powder house on Senter Point—used by the Island Mine in the 1870's.

greater depths; and the lode was "bunchy." The company cancelled contracts for lumber and stamp mill machinery, and all available supplies, including the tug *Maythorn*, were offered for sale. One man was left as caretaker for the village.

Tributors worked the mine for three years, doing some stoping, but largely using the rock already excavated. They built a small stamp mill on a creek near the mine location, using for water and transportation the dam and railroad already in place, but they, too, were beset with frustrations including the burning of their mill. It was not long before they had abandoned the place. In 1881 Alexander Winchell, the Minnesota state geologist, found the buildings and machinery still on the shore, but soon thereafter the warehouse burned, and today the townsite shows no signs of its former occupancy.

Saginaw Mine

Still a third operation took place, this to the south of Conglomerate Bay, near Rock Harbor. The Saginaw Mining Company, apparently backed by Marquette capital, sent out a small work force in 1877 to mine an old location formerly prospected by the Ohio and Isle Royale Company. They sank two shafts with a winze connecting them and took out a limited amount of copper. But operations ceased after 1879.

FINAL EXPLORATIONS

Isle Royale Land Corporation

With the closing of these mines the island again remained uninhabited save for seasonal fishermen. The North American Mineral Land Company, aware that it had a bad investment on its hands, sought to dispose of its holdings and hired Jacob Houghton, a brother of Douglass Houghton, to do the job. Jacob Houghton, who ran a shipping line from Hancock to Isle Royale, was a curious mixture of Micawber and Pollyanna whose faith in Isle Royale copper had lasted for forty years. This was a period in which the British were making large investments in American mines, and he finally succeeded in interesting a Liverpool syndicate in his copper dream. They took the name of the Isle Royale Land Corporation and purchased the holding of the North American Mineral Land Company as well as the Minong Interests (about 84,000 acres) for about three dollars an acre. While emphasizing the value of the copper, Houghton also stressed the land itself as an investment. He demonstrated his faith by buying 800 of the 10,000 shares.

Wendigo Copper Company

The charter of the Isle Royale Land Corporation permitted them to explore for copper but not to mine it, and actual mining was needed to prove values. Therefore, a subsidiary company, the Wendigo Copper Company (the company used an "e" in their spelling of Windigo), was founded, and eight thousand acres set aside for it in the Washington Harbor area. Here, at the present Windigo development, grew up the island's most elaborate townsite, Ghyllbank. A huge log office building was constructed; store houses and sheds grew up along the shore; while two miles inland the mining location settlement, "Wendigo," was constructed. It consisted of a number of one or two story log cabins built for workers on the location and two boarding houses for the single men.

The mining community numbered about 135, of whom only sixty were men. There were at least twenty children of school age, and some pre-school children, including two infants born during the winter of 1890-91. The physician was both school teacher and customs officer. Tobogganing was a favorite sport during the winter with an excellent toboggan slide from the office building down the hill to the ice on the bay, and at night the slide was lit by lanterns. Mail service was regular,



The town of Ghyllbank at Windigo, which included a large log office, store houses, and log cabins. Fisher collection photo, about 1892.

by way of Pigeon River carried by boats in summer and dog teams in winter, and there were few of the hardships that had marked the earlier settlements.

From 1890 to 1892 there was frenzied activity. Many miles of road were built in the Washington Harbor area and as far inland as Lake Desor. Much trenching was done to discover the nature of the bedrock in this area, as well as in Todd Harbor, and an extensive program of diamond drill exploration was carried out. (Incidentally, these rock cores give us our best knowledge of the geology of the island today.) But all this resulted in no production of copper. The rock was too poor to be mined profitably. In 1892 the activity ceased, the Wendigo company went out of existence, and the Isle Royale Land Corporation began selling its land for tourist homes and resorts.

At this time the *Engineering and Mining Journal* editorialized:

This ends the last attempt to find a mine on Isle Royale. It is probable that a million dollars has been spent on this island in fruitless explorations, made by practical men with their own money, and not by stock companies. It may safely be said that there are no paying deposits on the island.



Tobogganing—a favorite sport during the winters at Windigo. Fisher Collection photo, about 1892.

THE END OF AN ERA

Historic mining on Isle Royale was a colorful episode in the history of the island. In general, the activity paralleled the story of other mining frontiers in the United States, with its cycles of boom and decline, and, at a later period, in the application of science and technology to the operations. The large foreign investment in the last period of development is typical of the mining frontiers of the far west. In the west, urban centers such as Fort Benton, Spokane, and San Francisco served as supply centers for the isolated mining areas. On Isle Royale, Houghton and Duluth played similar roles, with lake steamers and tugs taking the place of the western freight wagons and pack mules. As in the West a period came in the twentieth century when men found it more profitable to work tourists than ore bodies. The transition of Aspen, Colorado, from a silver mining center to a haven for philosophers and skiers took about forty years. On Isle Royale the transition was more rapid, with the end of the mining era coinciding with the beginning of tourism as a major economic activity.

THE REMAINS TODAY

Visible remains of the fifty years of mining ventures on the island are still plentiful, and most of the sites are accessible by trail. "Poor rock" piles, the debris from shafts and excavations, are evident wherever a mine existed. Closer investigation of the larger mine sites will reveal the eroded foundations of houses, stamp mills, and storehouses.

At Rock Harbor you can see the shaft holes from the old Smithwick Mine along the Moose Trail leading from the Lodge, and a hike of 4½ miles will take you to the largest mine development in the Harbor, the Siskowit site. At Windigo, early exploration trenches are identified along the Windigo Circuit Trail, while decaying log structures dating from the Wendigo Mine operations are within easy hiking distance from the campground.

The two greatest mine developments are inland, but also reached by trails. From the McCargoe Cove Lakeside Camp take the Mine Trail to explore the digging site where 50 men once were employed, and follow the old railroad part way down from the mine. In the same vicinity look for foundations of the long-gone stamp mill, less than a quarter of a mile from the campground on the Chickenbone Lake Trail. Vestiges of the Island Mine are seen along the trail of that name leading off the Greenstone Ridge.

Remains of an ore car, once used at the Minong Mine.



The National Park Service plans to identify many of these original mining sites, install interpretive exhibits, and make them available to Park visitors. In the meantime, you may visit these areas but you should remember that structures remaining from the old mining operations are fragile and easily damaged. Their loss would be disastrous to future plans. Look, photograph, and enjoy, but do not disturb.

The timbers of the old shafts and stopes have long since rotted, and the interiors are unsafe. **Never enter one of these excavations.** Some of the shafts are unmarked and surrounded by undergrowth. Use care in your explorations.

Production of Isle Royale Mines

Mine	Years	Production (lbs. refined copper)
I. Siskowit Mine	1847-1855	190,736
II. Pittsburg & I.R.	1847-1853	27,730
III. Saginaw Mine	1875-1879	51,264
IV. Island Mine	1874-1878	213,245
V. Minong Mine	1874-1883	498,650

BIBLIOGRAPHIC NOTES AND ACKNOWLEDGMENTS

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It will be possible to mention only a small number of the books and articles used in this study. Charles T. Jackson, *Report on the Geological and Mineralogical Survey of the Mineral Lands of the United States in the State of Michigan* (31st Cong. 1st Sess., Exec. Doc. 5, Washington, 1849), gives a fair account of the early mines. Of greater importance is Alfred C. Lane, *Geological Report on Isle Royale* (Michigan Geological Survey, Vol. 6, Pt. 1, Lansing, 1898). Statistics on production are from B. S. Butler and W. S. Birbank, *The Copper Deposits of Michigan* (U.S. Geological Survey Prof. Paper 144, Washington, 1929). The technical journals in the Michigan Technological University library contain much useful information.

The early photographs are from the James E. Fisher collection at Michigan Technological University. They were taken in the 1890's, probably by W. W. Stockly, engineer of the Wendigo Copper Company. All recent photographs were taken by William W. Dunmire, Chief Park Naturalist of Isle Royale National Park. The maps were drawn by Gordon Haber, who assisted me in much of the field work. The Siskowit Mine sketch was drawn by Stephen D. Veirs, Jr.

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BACK COVER: A drill rig on Isle Royale, used for an early attempt to examine the structure of the bedrock. Fisher Collection photo, about 1892.

