

JANUARY HARVEST

The Heyday of Ice “Farming” in the Inland Northwest

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Between 1885 and 1925 in the Inland Northwest the strawberry harvest of June, the hay harvest of July, the potato harvest of September, or the apple harvest of October could fail in any given year. But always dependable was the two-week January harvest of ice from ponds, streams, rivers, and lakes. It was the delight of children looking ahead to the next summer's ice cream, a reliable food storage aid for housewives, a dependable extra income for communities near rail spurs, and a major industry for some cities. In 1901, for example, 27 companies that kept men working year-round harvesting ice for the summer and fuel for the winter were collectively the largest employers in Spokane.

Family Icehouses

We can surmise that as soon as homesteaders had the basic survival needs under control, perhaps in the mid-1880s, someone suggested enhancing the summer's table with well-stored butter and cream and, if a hand-crank ice cream maker could be acquired, the queen of all desserts. An ice storage facility would be built and large quantities of ice blocks stored for summer use. The most primitive storage space would be underground, much like a root cellar. This was inconvenient and inefficient in every way, and soon was replaced by above-ground storage. *The Farm Journal*, much used by homesteaders for how-to situations, recommended merely a 12-foot by 12-foot pen of boards with strong posts on the outside, leaving a smooth inner surface. Sawdust was spread two or three feet deep over the bottom, around the edges and over the ice, and even without a roof the ice usually lasted through August if the pen were strategically placed in the shade on the north side of trees and buildings.

Some icehouses were as simple as a woodshed, with the only insulation being sawdust piled on the ice. Some early icehouses were made of logs, which provided good insulation. Most family icehouses, however, were double-walled with about six inches of sawdust insulation between the two walls and above the ceiling. More sawdust was heaped over the ice blocks and sometimes placed between layers of blocks; this, of course, was replaced annually. Sawdust would be washed off the ice as it was removed for use. An icehouse torn down on a Pend Oreille County ranch, then about 70 years old, showed that the sawdust was in perfect condition except for a few places where the neglected building had developed holes in the outer wall that allowed moisture to seep in. Sawdust is a highly flammable substance, and that quality lasts a long time too; the old Hazelwood Creamery in Spokane burned in 1974 when pipe removal ignited the insulating sawdust.

One son of a careful butter manufacturer reports that his mother was particular about the kind of sawdust used; resinous white pine and spruce, she found, could taint the butter, even though it was wrapped and stored on a higher shelf of the icebox before being delivered to her customers. Almost any old sawdust, however, could store ice cream since it would never be stored with the food, and perhaps because the young consumers were more eager than discriminating. Since land-clearing, logging, and sawmilling were constant activities in most of the Inland Northwest, seldom was it necessary to pay for sawdust; if a family didn't have enough from its own endeavors, mills were happy to have it hauled away. In unwooded areas where straw was the necessary second choice, it was a less effective insulator.

Community Ice Harvesting

With building materials freely available, most rural families had their own icehouses. The harvesting, however, might be communal. When cold weather came, boys would start "ice hunting" to spot the best sites in nearby ponds and streams. When someone recognized that conditions were right for harvesting, several families would gather sleds and tools and work together to bring in the ice. Festivity often accompanied this kind of harvest, and children sometimes missed a few days of school, as they might for any harvest. The ice, kept free of snow, accommodated skating parties before and during the harvest. Sleigh loads of helpers and spectators enjoying the winter harvest brought picnics and musical instruments.

When blocks were brought up onto the ice, water sloshed over the surface, making for wet and slippery footing; falls were common, but no record was found of the sort of tragedy that occurred in logging or transportation industries. The younger and more agile workers sometimes harvested on skates. For others, caulked boots or a few nails hammered from the inside out sufficed for safety. In the spirit of cooperation common in homesteading communities, each family would take the amount it believed it needed and haul the ice home to its icehouse. Hayden Lake, Idaho, and Newman Lake, Washington, followed this pattern. The Tacoma Creek community in Pend Oreille County did the same, but frequently conditions were favorable for a second crop, which would be loaded at the railroad spur and sold to commercial houses. If the crop was better in one community than another, ice might be sold to reduce shortages. In 1918 the harvest on the Pend Oreille River at Newport, Washington, failed to last the unusually hot summer; Newport bought one freight car load from Lone, Washington, and two from Blanchard, Idaho.

In towns the proliferation of private icehouses was not common. More likely, there were two major icehouses. One would be a commercial venture, harvested with as many family members as could be mustered and a few temporary employees. An icehouse, similar in construction to the family ones but bigger, would hold larger amounts of ice to be sold during the summer. One man from Lone remembers being sent as a boy with a rough-jolting steel-wheeled wheelbarrow about twice a week for the family's ice. The job was not over when he reached home: the ice was very difficult to handle with large, awkward tongs, and the big block had to be cut into pieces and put in the high top of the icebox. To break it, he put the ice in a gunny sack and used a double-bladed axe, making sure to keep it flat so as not to cut the sack. He would have welcomed the delivery routes that were available only in the larger cities, where the iceman would not only deliver a block of ice but place it in the icebox, all for about ten cents a delivery.

Another common practice was for the major employer in a town to keep an icehouse with ice available for the use of employees and their families. In Metaline Falls the Lehigh Cement Company diverted employees from other work during the ice harvest to fill two icehouses, one for the employees and one for the railroad. Similarly, Ione's Panhandle Lumber Company encouraged men on their shifts to keep the frozen millpond tended until harvest time, and then fill an icehouse where they could find treats for their families in the summer.

Businesses with ample needs might keep their own icehouses. In 1897 each of three hotels in Newport, Washington, had a "splendid" icehouse to assure ice cream all summer for customers.

Commercial Icehouses

Industrial applications called for a much larger icehouse. One built at Pasco in 1913 for the Northern Pacific Railway Company was of reinforced concrete and measured 483 feet in length by 94 feet in width and 62 feet in height. As early as 1892 the Great Northern Railway had an icehouse with a capacity of 800 tons in Ainsworth at the junction of the Snake and Columbia Rivers. Three commercial icehouses at Loon Lake in Stevens County had a collective capacity of 20,000 tons. Lewiston, Idaho, had a 40-ton house in 1905. Melder Lake at Blanchard and Cocolalla Lake in Bonners County, Idaho, had two of the largest. The Northern Pacific bought 35,000 tons of ice and 65 cars of sawdust in 1911 to take care of the fruit crop the following summer; Cocolalla provided most of that ice, shipping it for storage to Pasco. Silver Lake, near the town of Medical Lake, was a major ice field. Post Falls, Idaho, harvested 160 tons in 1906. Troy, Idaho, was able to put up a second crop in 1909; it was a lucrative product, costing \$2.50 a ton to store and selling for as high as \$20 a ton.

Such major ventures supported significant numbers of employees. In 1916 the Hazelwood Company employed 125 men to cut and store ice at Blanchard, harvesting 50,000 tons at the rate of 2,000 tons daily. The Cocolalla Icehouse used 300 men in winter and 100 in summer; they kept bunkhouses for 100 men, two blacksmiths and two cooks. Like any harvest, the need for temporary laborers could be a boon to homesteaders, loggers, and others with flexible winter schedules.

Home delivery in the city of Spokane began in 1884 when a man named Jones started an ice business and hauled the commodity around in a wheelbarrow. By 1889 the city required 10,000 tons—far too much for a single wheelbarrow—so wagons and horses did the work. Spokane in 1902 used 14,000 tons a year; it disappeared at the rate of 10 tons a day in the winter, with consumption going to 100 tons a day in summer. The greatest user in the city was the Hazelwood Creamery, at 1,000 tons a season. The integrity of the iceman was important. The Star Ice Company's advertising brochure of 1902 declared that "ice is a necessity these days and it is essential that it should be pure and that the people should receive full weight."

Towns with large enough houses to ship major crops were North Powder, Oregon; Colville, Loon Lake, Mabton, Colfax, Dayton, Walla Walla, Wenatchee, White Salmon, Connell, Kennewick, Elberton, Clarkston, North Yakima, Sprague, Camden, and Thorp in Washington; and Hayden Lake, Blanchard, Cocolalla, Lewiston, Troy, Boise, Nampa, and Pocatello in Idaho.

If there was a shortage of ice it was not usually caused by a sparse harvest but by a summer of excessive heat. In 1920 towns and cities throughout the Northwest, including Seattle and Portland, needed help. They turned to the Inland Empire when reserves of artificial ice couldn't meet the need, but there weren't enough railroad cars to move the amount needed from such places as Blanchard, Idaho, or Republic, Washington.

Clear Blue a Foot Deep

While it is true that there was ice to harvest every winter, quantity and quality did vary. Two weeks of clear, cold weather was ideal for the biggest harvesting operations; as with most harvests, ideal weather seldom lasted as long as it was wanted.

Least reliable was ice from rivers and streams. Some years it could be superb and in those years it was the preferred product; but rising and falling of the water combined with varying temperatures made it unusable most years. In such seasons, old dependable ponds and lakes became the source. When the major rivers were dammed, river ice was no longer available, but ponds and lakes would still serve. The Middleton family, on the edge of the Pend Oreille River, much preferred to gather from the river at their feet; but when the river didn't cooperate, they took teams and sleds three miles uphill to Babbitt Lake where there was always thick ice in the higher and smaller body of water that didn't have a rapid flow to disrupt the freezing process. Even with all the extra work, the ice was still worth gathering.

Those serious about their ice prepared for the harvest for several months. Weed cutting tools were brought out in the summer to keep the harvesting area weed-free. Those who cut ice for the Panhandle Lumber Company's lumber camps, however, were not so fastidious, and weeds frozen into the ice could be regarded as garnish, or simply ignored. The best ice resulted when temperatures were coldest, so good practice kept the ice cleared of snow all winter, lest the snow insulate it and make it less hard and clear. Homesteaders and small operators used ordinary shovels or made wooden pushers to move the snow off the area to be harvested. Big operations used teams of horses to pull V-shaped drag boards, the same process by which roads were snow-plowed. Ice from well-tended plots of still water produced the coveted "clear blue," the hardest, longest-lasting, and most eye-pleasing ice.

Homesteaders most strapped for labor sometimes merely packed snow into blocks and insulated it by the same methods as those described above. It was good enough for the kids' ice cream and would probably last through the Fourth of July. Patrons of the railway dining cars, however, expected and usually got the "clear blue" year-round. In between was the variable ice that resulted from hard work and careful storage, and whose character could be a topic of dinner conversation.

The depth of ice appropriate for harvest differed from locale to locale. Two inches of ice was safe for humans to walk on, though a thickness of six inches was needed if horses were involved, according to Scribner's *Lumber and Log Book* of 1910. Some cutters felt they were ready if they had 6 or 8 inches of hard ice. Most went to work when the blocks were 11 to 14 inches deep. In frigid eastern Montana 36 inches was not unusual, but the weight of very deep ice required different logistics in cutting and lifting. A unique bay upriver of LeClerc Creek on the Pend Oreille River sometimes produced ice 30 inches thick, which was harvested for the Panhandle Lumber Company's icehouse and could be stored for up to four years to obviate the work of yearly

harvest. The White Salmon Dressed Meat Company put up its own 100 tons of ice in 1909 when the Columbia River froze all the way across, 6 inches deep.

Doing the Job

The foreman of the ice harvest needed his meteorological acumen as much as did a farmer or a seaman. A sudden thaw could bring devastation. Heavy snowfall brought extra work in clearing the ice. Soft ice was dangerous, and so was heavy fog. Most harvests took place in late January or early February; the earliest record found was December 11, in 1919, an anomaly that probably provided some unexpected Christmas money to seasonal workers. The latest harvest was in early March.

Commercial operations in which horses were involved brought their own side industry. At Cocolalla Lake, 60 horses were used, and the necessary barn and smithy were provided. Two blacksmiths were employed through the winter, nailing on spiked shoes for traction. According to the *Spokane Spokesman-Review*, mishaps with horses were serious but not deadly. While a man can climb out of a hole in the ice, a horse must be towed to the main body of ice and

choked until his struggles fill his lungs to their full air capacity. That makes him float high and boards are shoved under him. He also is much lighter while the faucet is turned off his windpipe and he is easily rolled up the plank. [The horses] finally become accustomed to the operation and able to "fake" a choke.

Again, no deaths are recorded.

The first step of the harvesting process was to do the final clearing of the ice. Then, a plowing device was used to cut deep grooves in the ice to mark the cutting lines. Here the foreman had to become a geometrician because in the commercial icehouses the precision of the blocks' edges meant not only more efficient storage but better insulation. Harvesting began at the greatest distance from the shore. After an auger or bit made an entrance hole, a horse-and-man team would precisely mark the ice using a plow-like blade with an attached glide, first in one direction, then perpendicularly to the first marks. Next came a cutter, often horse-drawn, with graduated teeth to make deep cuts into the scored ice; each successive cut would be a couple of inches deeper than the last. This step was referred to as "plowing the ice." Next, men would follow the cuts and cut out the blocks with ice saws, which closely resembled crosscut saws from the lumbering trade but with coarser teeth. A team of horses would be on each side of the saw to pull it through the ice. Early on, a channel of up to 10 feet in width was cut so that ice blocks could be floated toward the shore. If severe cold attacked during the process, keeping the channel open at night provided an additional job, often given to teenagers who welcomed the wages and the excuse to stay up all night.

At first cut, the chunks of ice would be about 10 feet square and weigh 150 to 200 pounds. These cakes, when free and bobbing in the water, were grabbed with large ice tongs and pulled out by horses. Another practice was to cut the large blocks down into smaller cakes, about 2 feet by 3 feet. A man with a needle bar (again, closely resembling the logger's pike) would hit right where the cuts were made. If he was skilled enough, a cake would pop out of the channel and these cakes could be skidded up a ramp.

If the product was being sold directly to a railroad, a car might be waiting on a spur and the ramp would go directly into the car. The loading chain was a conveyor belt powered by turning a steel windlass, a large drum with spokes and cables. The conveyor belts, sometimes two cakes wide, were submerged in the lake at one end and entered the icehouse or railroad car or went onto a sled at the other end. The belt entered a railroad car near the top; ice was directed down chutes to the lower levels, and the car gradually was filled. A very skilled "switchman" was desirable inside the icehouse or boxcar so that ice went into the right spot and did not crash into an unwary worker.

How Much and What For

The major uses of ice appear to have been for fruit shipment; ice for homes, restaurants, and saloons; meat shipment; and storage of dairy products and beer. In 1920, 50 to 70 tons daily were used to ship head lettuce from Seattle to eastern and southern markets. When supplies ran short during an unusually hot summer, ice was sought from inland icehouses. While it was not a common practice, a large ranch in eastern Montana used ice to create a year-round water supply for all daily household needs. It was the task of the hired man to keep a barrel stocked with ice that would melt for cooking, dishwashing, drinking and bathing. Summer shipments of fish eggs and trout from hatcheries required a good ice supply. Bob Yorke's private hatchery in Pend Oreille County had a log icehouse for packing ice for summer fish shipments from about 1923 to 1935.

The shipment of fruit from the West with ice began in 1895. Ignasio Allegritti, the inventor of the refrigerator car, brought one to Walla Walla to demonstrate its use and to launch a test. For demonstration to local fruit growers, the car was loaded with pears and held for five days; it was then consigned to the Atlantic coast. In 1901 A. L. Porter of Lewiston, Idaho, according to the *Spokesman-Review* of June 23, "inaugurated an innovation in marketing fruit that some shippers think is destined to almost revolutionize fruit shipping in the northwest." He designed a "refrigerator" that held 50 boxes of cherries and shipped as one unit—cherries and ice inside. His marketing experiment resulted in his selling the refrigerated cherries for eight dollars a box, compared to three dollars a box for unrefrigerated cherries.

Different cuts of ice were used for different purposes. Blocks were best for shipping fruits and vegetables; crushed ice was best for meat and fowl. Ice supplies in railroad cars were replenished at a chain of icehouses stretching across the country.

As with any large industry, complications in the ice business affected others. In 1900 the price of ice to Spokane's butchers jumped from an average of \$3.75 a ton to a range of \$8.00 to \$13.50 a ton. The Butchers Association of Spokane was "up in arms" and claimed that butchers would be forced to raise the price of meat or go out of business.

The End of the Craft

The invention of manufactured ice did not by itself bring the end of the harvesting of natural ice. Ice manufacturing began as early as 1850 in the East, and in 1900 an ammonia compressor was brought to San Francisco for shipment of ice up and down the Pacific coast. But the cold winters

of the Inland Northwest made the harvesting of natural ice more cost-effective until manufacturing methods were improved.

In 1922 L. J. Kimmel of Newport and Spokane perfected a machine by which he could use electricity for refrigeration. His Elektro-Cold Company was the largest company of its kind in the West, distributing its product in 11 states. The growth was very rapid; Elektro-Kold sold 50 machines in 1923 and 506 machines just two years later. The *Spokesman-Review* in 1926 predicted that "icemen will become as conspicuous as long-haired women and lakes won't have to raise a crust each winter to make the season's supply of ice cream and keep it firm, fresh, and soothing."

A new "artificial ice plant" was built in Spokane near Felt's Field in 1925; it could produce 75 to 100 tons daily. With this production year-round, the harvesting of ice was on its way out.

There were some holdouts. The head of Spokane's Broadview Dairy, which used 40 tons of ice daily, told an interviewer in 1925 that harvested ice was cheaper and less trouble than any attempts to manufacture it. Too, he believed that horses were a cheaper and better delivery method than automobiles since they could learn the route and move to the next home while the iceman took ice into the first house.

The final blow for small-town and rural icehouses was usually determined by the coming of electricity, through the 1930s and 1940s. The last businesses to use harvested natural ice were sportsmen's lakeside resorts. Several continued in Idaho and Washington into the 1960s. Numerous fish camps in British Columbia still use it. For them, family labor supplies outperform costly manufacture or transportation and storage of ice supplies. The romance is worth something, too.

Eva Gayle Six led the nine-year project (1991-1999) to develop Metaline Falls School by architect Kirtland Cutter into The Cutter Theatre. She is a local history enthusiast, focusing mainly on Pend Oreille County and northeastern Washington.