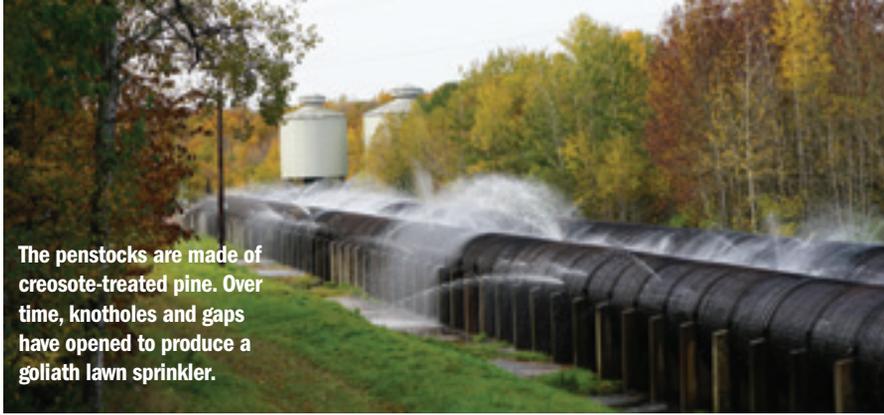


Wonders crystallize through the ages



Massive ice formations crystallize each winter near Grandfather Falls north of Merrill where the Wisconsin River passes through two giant penstocks that generate electricity for the area.



The penstocks are made of creosote-treated pine. Over time, knotholes and gaps have opened to produce a goliath lawn sprinkler.

GRANDFATHER FALLS ICE CASTLES MAY BE A THING OF THE PAST.

Story by Chris Schotz / Photos by Polly LaMontagne

Some natural features rest through the centuries without fanfare. Imagine the entire volume of the Wisconsin River dropping nine stories in a mile-long torrent, and now imagine shoving that entire river into two wooden straws. That would be a place revered by the Ojibwe and called Grandfather by 17th century French missionaries — the steepest plunge on the 430-mile river and an attraction that goes back through a thousand years of portage trails and timber drives.

Grandfather Falls was a place that saw 300 birchbark canoes portaged in 1850 and stagecoach excursions soon after. Tourists paddled and poled upstream to rusticate beneath the mist and witness the logs thumping over the falls when impatient drivers hadn't jammed the river shut as the springtime floods subsided.

One legendary jam stacked logs 200 feet high and a mile long. As the river backed up for miles and months, the spectators gathered on shore to watch the snarl attacked with peaveys and dynamite. A post office was established for this thriving fishing resort and named in honor of Peter Champagne, the mill owner and dry goods entrepreneur who ran the stage station. Local homesteaders rushed to the booming locale and went about building the first dam as a means to ration the log drive flow. By 1876 Champagne's station had grown into a hotel capable of hosting a February dance that detained 40 revelers until breakfast on account of a fiddle smuggled aboard a sleigh. No doubt those 19th-century excursionists strolled down to the frozen falls to contemplate the byproduct of mist confronting subzero air.

Massive ice formations are still a mystical sight at Grandfather Falls today thanks to a novel exhibition of New Deal engineering. It had long been a challenge to take advantage of the full 94-foot descent of the river. A 1906 dam

harnessed the upper 31 feet of the falls and produced the 20 kilowatt-hours that powered the mill and parts of Merrill. Some proposed the construction of two additional dams, but by 1936 the mill was bust and Wisconsin Public Service was able to launch the machinations that would power the entire county with megawatts to spare.

The solution was to divert the Wisconsin River into a half-mile canal before forcing it through two massive redwood pipes known as penstocks. By the end of 1938, Grandfather Road had been relocated and Champagne had become a ghost town akin to Atlantis. Some 100,000 board feet of California redwood had been assembled and banded into the 11- and 13-foot-diameter penstocks that would thrust the river downhill into the turbines that would be dedicated by the freshly inaugurated Gov. Julius Heil in January 1939. The diversion exposed the Precambrian bedrock of the old riverbed to the eyes of Ice Age Trail hikers who marvel at the chutes and bowls carved by a million years of fast current. As the penstocks reach the end of their life span, another sight has drawn the attention of travelers on Highway 107.

The original redwood penstocks were replaced in 1975 with creosote-treated pine still in use today. While perpetual moisture does prevent rotting and shrinkage, over time the knotholes and gaps opened to produce a goliath lawn

sprinkler. Although there is no danger of failure, WPS measurements registered 2015 as the leakiest year on record. This became especially apparent after a routine dewatering procedure allowed the staves to dry out and shrink for a week. Eventually the boards re-swelled and sealed the gaps, but there was one perplexing leak above the west turbine that sprayed high into a white pine 30 feet away.

The leak was monitored through the summer but subsided on its own in fall, so no tedious dewatering projects were initiated. Repairs are a major project that must be undertaken cautiously so the penstocks don't implode while drained or burst when the river is released, so no work was done that fall to fix the leak that wasn't leaking. As winter arrived the cascading spouts solidified as if someone yelled "Freeze!" and suspended them in the air. Ice built into hollow castles through which the spurts of Wisconsin River water could still be seen, and as temperatures dropped past the point of possible patching, the tremendous leak at the downhill end reopened. As winter wore on, the ice house grew, and while the penstocks were never in jeopardy, the white pine on the receiving end of the spray felt the icy weight and lost several sturdy branches.

The wall of ice finally melted over the summer and the hole is patched, but as the penstocks reach the end of their lifetime the leaks are gushing at unprecedented levels. Waterfalls cascade through adjacent cedars. With streams of river water lost for generations, the penstocks are due for repair. Though this winter promises to be an amazing season of ice castle viewing, it could likely be the last. It's no longer cost-effective to build enormous pipes of wood. Steel is the material of choice for 2017. The leaks that once built a 1,000-foot kingdom of ice will be entirely dedicated to power generation, but not before one more spectacular show. 

Chris Schotz is a middle school history teacher in Rhinelander, Ice Age Trail volunteer, bike trail builder, historian and author of "Underground in the Underdown."



BEST PLACE FOR VIEWING

Grandfather Falls has three different parking areas located 12 miles north of Merrill on Highway 107. They are all connected to New Wood County Park via the Ice Age Trail.