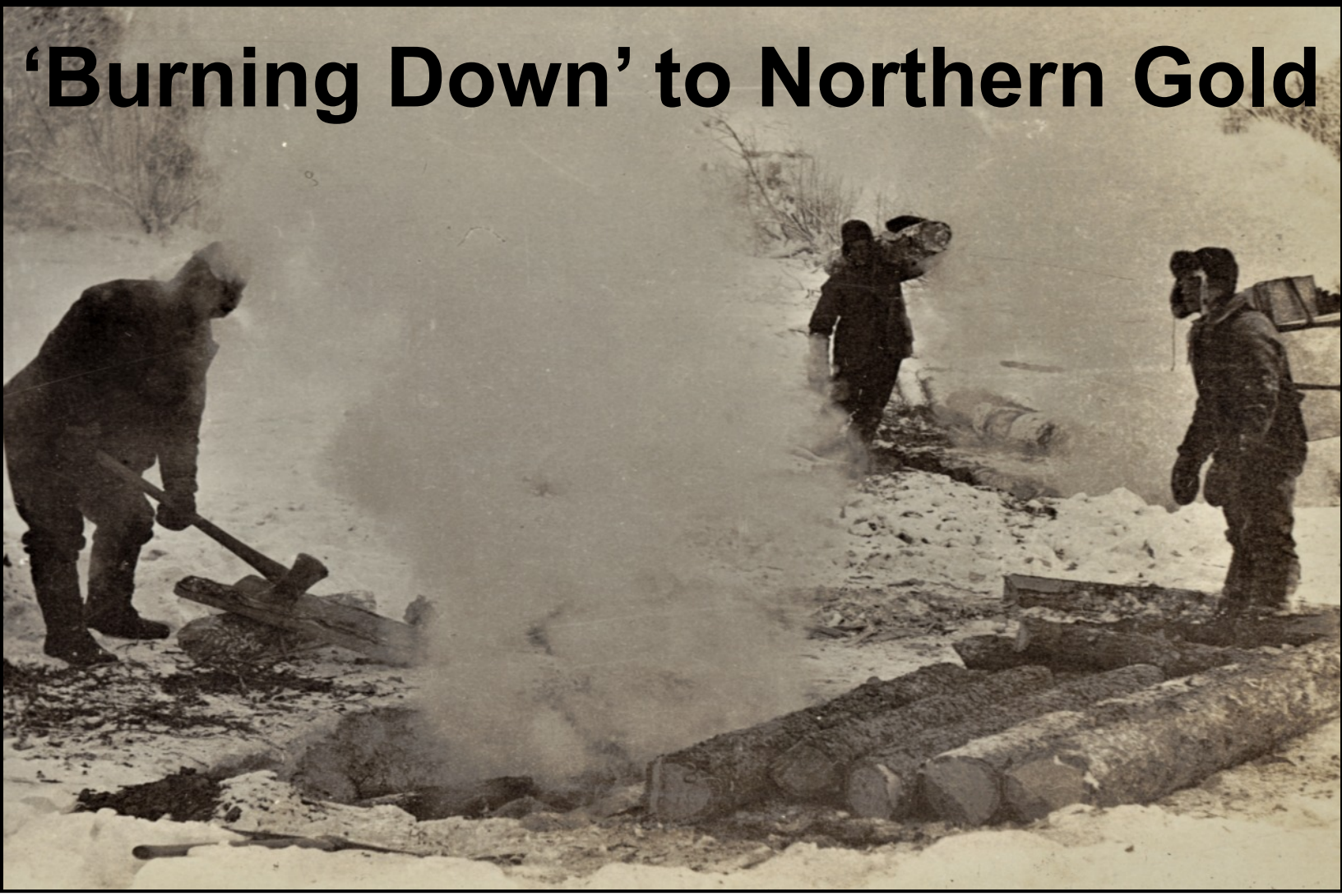
National Park Service
U.S. Department of the Interior

Yukon-Charley Rivers National Preserve

‘Burning Down’ to Northern Gold



Miners cutting wood to feed the fire in their prospecting shaft, 1898. After ‘burning down’ through frozen ground, they will continue using fire to ‘drift’ horizontally to reach the richest gold deposits. Glass photographic negative, author’s collection.

Many of the shafts have smoke boiling out of them like a furnace, and at many more the men are at work hoisting the dirt that has just been thawed. The usual outfit is a windlass, a rope and a clumsy wooden box—a miner’s ‘bucket’—that holds about 150 pounds of dirt.

—*San Diego Union*, February 17, 1898

In the 1880s and 1890s, gold-seekers along the tributaries of the Yukon River faced serious obstacles—they had to haul supplies long distances, the summer season was vexingly short, and much of the gravel they needed to reach was locked in permafrost. The last of these challenges limited miners to working shallow creek gravels during the summer months, while (to their consternation) the richest deposits of gold lay deeper underground.

A novel approach

In the late 1880s, a few prospectors on the Fortymile River near the U.S.-Canada border began using fire to reach underground gold deposits, but the practice was not fully embraced until gold was discovered at Birch Creek in 1893. As Circle City emerged as a supply depot and log cabin boomtown near the new diggings, a reporter for the *Sun and New York Press* explained the new approach. Instead of spending all winter in town loafing in the dance-halls, at least two miners stuck by their claims:

> *They found that a big fire burning all night would thaw out a couple inches of gravel. In the morning they would scrape away the remnants of the fire, lug their gravel into the cabin, and at night build another fire. They kept this up all winter, and when the ice went out in the spring they had a big pile of dirt ready to pan. They washed $16,000 of dust out of that pile of dirt for their winter’s work.*

The power of fire

When "burning down," miners waited until winter when the intense cold froze the creeks and groundwater—otherwise their prospecting holes would flood and be rendered useless. The shaft needed to be 4 x 6 feet wide to allow for a human being and an excavation bucket; a windlass erected over the hole helped to hoist the heavy material to the surface. Day after day the 'driftman' removed the ashes and used a pick and shovel to dig out the soggy, melted dirt before adding more wood for the next bonfire. The goal was to excavate down to the level of bedrock where over eons gravity had deposited gold dust and nuggets. Then the miners started the 'drift,' moving horizontally to collect the richest layer of gold-bearing gravel. Large flat rocks were used to hold the wood in place and they absorbed heat to extend the thaw.

Dangers underground

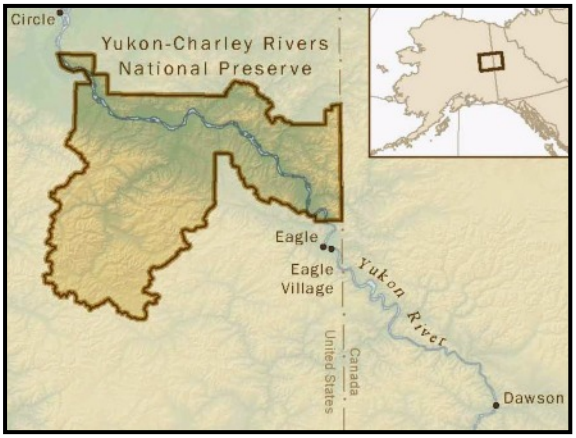
In 1897, when Circle City miners rushed upriver to Canada's Klondike goldfields, they brought their knowledge of "burning down" with them. As the journalist Tappan Adney observed on Eldorado Creek,

> *The sun, like a deep-red ball in a red glow, hung in the notch of Eldorado; the smoke settling down like a fog (for the evening fires were starting); men on the high dumps like spectres in the half-smoke, half-mist; faint outlines of scores of cabins; the creaking of the windlasses—altogether a scene more suggestive of the infernal regions than any spot on earth.*

Although the permafrost usually held tunnel ceilings in place, cave-ins did occur, as did accidents like buckets falling onto the heads of men below. However, the most dangerous threats to drift miners were the residual smoke, that irritated the eyes and could blind with prolonged exposure, and the noxious fumes that lingered underground and could kill by asphyxiation. In such cases, the man down below needed the strength to hold onto the bucket while his comrades pulled him to safety.

Out with the old

Using fire to reach pay dirt was always slow, costly, and dangerous, and soon a new technology began to take its place. Steam boilers rigged with rubber hoses and steel pipes (called "steam points") could thaw gravel more efficiently and were less of a threat to the miners. Even so, wood fires continued to be the method of necessity along the Yukon River and wherever miners lacked the means to purchase and transport boilers. Though little evidence remains of 'burning down' in Yukon-Charley Rivers National Preserve, visitors today can see multiple examples of steam boilers that were used to reach gold deposits into the 1930s.



Klondike drift miners working by candle-light.

For more information

Chris Allan, Historian
Yukon-Charley Rivers National Preserve
chris_allan@nps.gov
www.nps.gov/yuch/historyculture

Left: A Klondike miner operating a windlass at forty degrees below zero, ca. 1898. University of Washington Special Collections, William E. Meed Collection.

Right: Drift mining diagram from Basil Austin's *The Diary of a Ninety-Eighter*. The writing at the thawing face says, "Firewood held in place by hot rocks."

Top Right: Miners excavating gravel at 44 Bonanza Claim, Yukon Territory, ca. 1898. University of Washington Special Collections, George Cantwell Collection.