



## Mining History and Techniques



---

### Introduction

The area of the upper Yukon River in eastern interior Alaska encompassing Yukon-Charley Rivers National Preserve has a rich and varied gold mining history. It started in the later half of the 1800s with prospectors and their gold pans, picks and shovels. It reached its zenith with dredges working the placer deposits on Coal Creek and Woodchopper Creek. Today visitors to Yukon-Charley can follow in the footsteps of the early prospectors with a gold pan.

---

### Mining History 1800s to 1901

As early as 1849 gold was discovered in Alaska. In 1863 gold was discovered near Birch Creek, near present day Circle. By the 1870s prospectors were traveling the Yukon and its tributaries looking for gold. In 1886, a decade before the well known Klondike Gold Rush, gold was found on the South Fork of the Fortymile River. This led to the *Fortymile Gold Rush* and the establishment of the towns of Chicken, Jack Wade, Franklin and others. The discovery of gold on Birch Creek in 1892 led to the *Circle Gold Rush*. As a result, when gold was discovered on Rabbit Creek, a tributary of the Klondike River near Dawson in the Yukon Territory in 1896, leading to the Klondike Gold Rush (1897-1898), the upper Yukon River area had thousands of miners and prospectors.

As a result, when the Klondike gold rushers arrived in Dawson, they found that claims had already been filed on most of the valuable ground. Some returned home, some headed for Nome where gold was discovered in 1899, and others came into the area between Eagle and Circle. In 1897 28 miners had settled in Eagle. By 1898 200 miners were in the area. As the prospectors searched for gold in this upper Yukon River area, 5 cities were established between Eagle and Circle: Star City, 70 Mile, Nation, Ivy and Derwent. Eventually there were also 14 roadhouses between Eagle and Circle. The first gold claim was filed on Coal Creek in 1901, 4 months after the coal claim that gives Coal Creek its name was filed.

---

---

## Mining History 1902- Present

Frank Slaven filed his first gold claim on Coal Creek in 1905. Gold mining continued to develop throughout the area, with Ben Creek, Sam Creek and 4<sup>th</sup> of July Creek becoming other mining areas within the present boundaries of Yukon-Charley River NP. In 1914 Frank Slaven persuaded the Yukon Gold Company to do some exploratory drilling on Coal Creek. The Discovery Claim was filed on Mineral Creek, a tributary of Woodchopper Creek, in 1926. The Yukon Gold Company did more drilling and test pitting on Coal Creek in 1927. Eventually 565 claims were filed on Coal Creek and Woodchopper Creek. In 1932 Frank Slaven built Slaven's Roadhouse with the assistance of Sandy Johnson and others. In 1933, the next phase of the gold mining era in Yukon-Charley Rivers was being planned. The zenith of the gold mining era in Yukon-Charley Rivers was reached with the dredges on Coal Creek and Woodchopper Creek. In 1934 Gold Placers, Inc., organized by A.D. McRae and Ernest Patty, started buying claims on Coal Creek and sent out specifications for the Coal Creek Dredge. It was built by the Walter W. Johnson Company in California, disassembled and shipped to Coal Creek via San Francisco, Skagway and Whitehorse in 1935. In March 1936 the dredge parts were hauled to an ice pond

dug near Cheese Creek, approximately 8 miles up Coal Creek from the Yukon River. It was assembled and started operating on July 1, 1936. In 1937 the Woodchopper Dredge started operating for Alluvial Gold, Inc., another McRae/ Patty venture. The two dredges were operated by Gold Placers and Alluvial Gold until 1957 (Coal Creek) and 1960 (Woodchopper). In all they took out over \$6,000,000 in gold. The Coal Creek Dredge removed 3.2 tons of gold in 17 years of operation, since it did not operate in for several years due to World War II and operations being alternated with the Woodchopper dredge in the 1950s. In the 1960s and 1970s several different individuals, and AU Placers, Inc., tried to attain the success of Gold Placers on Coal Creek but failed. In the early 1970s, Joe Vogler, an active personality on the Alaska political scene, bought the Woodchopper claims from Alluvial Gold. Following his murder in 1993, the claims are now the private property of the Vogler estate. In 1982 AU Placers sold the claims on Coal Creek to the National Parks and Conservation Association, who donated the properties to the National Park Service and the newly created Yukon-Charley Rivers National Preserve. In May 1985 the Coal Creek Historic Mining District was listed on the National Register of Historic Places.

---

## Mining Techniques Part 1

Mining techniques are generally divided into two categories: lode mining and placer mining. Lode mining is generally referred to as "hard rock" mining. It consists of shafts (vertical tunneling) and drifts (horizontal tunneling) driven into native rock formations. In lode deposits, the tunnels generally follow mineralized ore bodies. Placer mining consists of working alluvial gravel deposits that contain gold which has been displaced from its original location and has been carried downstream by water action. Although several claims were filed for hard rock mining within what became Yukon-Charley Rivers NP, they were not deemed to be feasible. Mining within the Preserve area was placer mining. From the time of the first claims

filed on Coal Creek and Woodchopper Creek until 1936, the placer deposits within Yukon-Charley were mined by hand. Some miners earned their gold "the old fashioned way", with pickax, shovel and gold pan. Others adapted the drift and shaft methods of hard rock mining to placer mining. Eventually the placer deposits on Coal and Woodchopper Creeks were mined by dredges. While the dredges operated, the miners on 4<sup>th</sup> of July Creek, Ben Creek, Sam Creek, and the other areas within the Preserve continued to work those placer deposits by hand. The various techniques used are discussed below. One thing should be noted. Whatever technique was used, a gold pan was always the last step, to eliminate all other material.

---

## Mining Techniques Part 2

The popular image of a prospector with a gold pan, pickax and shovel is one that comes to mind when people think of gold prospectors. It is one that is used as the logo for Yukon-Charley Rivers National Preserve on many items, including patches, pins and T-shirts (Figure 1). Some of the miners working the placer deposits of the upper Yukon area worked gravel bars, sand bars and creeks using this method. It is a method that visitors to Yukon-Charley can use today. However, pickaxes and shovels are prohibited. You must use a spoon to fill your gold pan. For those visitors who wish to learn how to pan for gold, the staff of the Preserve will be glad to demonstrate the technique.

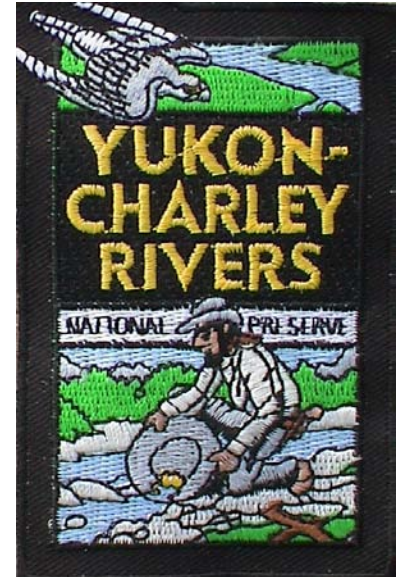


Figure 1

In placer mining, early miners used the shaft and drift mining techniques of hard rock mining to reach the bedrock where the gold had naturally accumulated. After the gold bearing gravels and sands were brought up, sluice boxes and rockers were used to separate gold from the gravel and sand. Using these techniques, a single miner could process approximately one cubic yard (nine cubic feet) of gravel per day with cold, wet and labor intensive work. A typical shaft operation is depicted in Figure 2. In this case a steam point is being used to thaw the frozen gravel. At Coal Creek the muck was around 10 feet thick and the frozen gravel was up to 14 feet thick. An advanced drift mining operation is depicted in Figure 3, using a gin pole. A simpler version would use a windlass, as in Figure 1, to bring the gravel and sands to the surface. Figure 4 shows an actual gin pole in operation.

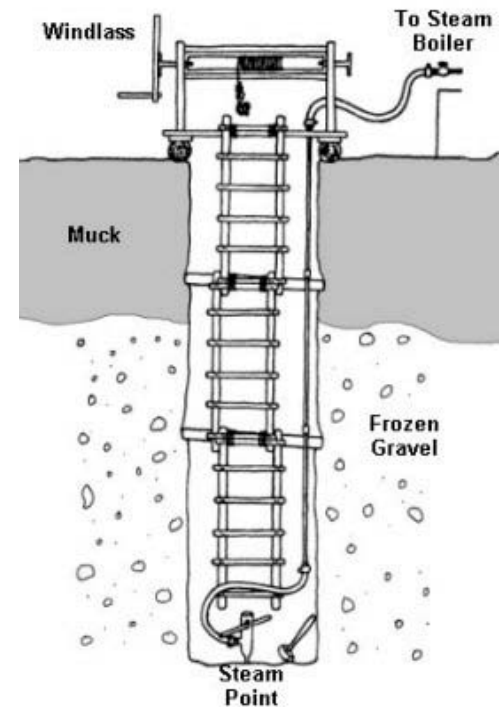


Figure 2

Figure 3

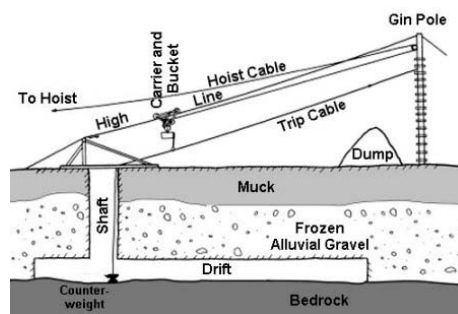


Figure 4



## Mining Techniques Part 3

Whether gravels and sands bearing gold were recovered by the shaft or the drift method the gold had to be separated from the gravel and sand. To do this sluices and rocker boxes were used. Figure 5 is a picture of a typical sluice and Figure 6 is a picture of a small rocker box. A sluice is a wooden or metal box that has riffles in it to separate gold from sand and gravel. The riffles are wooden or metal pieces placed perpendicular to the direction of water flow that create a hydraulic effect allowing the gold to settle in the sluice, while the lighter sand and gravel are washed out. In a rocker box, a box that can be rocked back and forth is placed over the sluice like a portion of the rocker box. The rocking helps to separate the gold from sand and gravel as water flows over it. Miners often used burlap placed in sluices or rocker boxes to help capture the gold.



Figure 5



Figure 6

## Mining Techniques Part 4

The Coal Creek dredge processed 2400 times the amount of gravel in a day that a single miner could. It performed three functions. First it used a digging ladder to bring the gold bearing gravel into the dredge. The gold was then separated from the gravel, sand and other debris as it moved through a rotating screen while it was sprayed with water. The gold and smaller sand and gravel fell through onto two screen sluices under the screen, one above the other. The remaining gold and sand then moved from the lower screen sluice through 6 side sluices that ran to the two tail sluices along the side of the dredge. The larger gravel and rocks that did not pass through the screen moved through the dredge on the stacker and were dumped behind the dredge as a tailing pile. As the dredge was moved forward it dug its own pond, which was filled in behind the dredge by the tailing piles. While digging the dredge was held in place by the spud, allowing the dredge to pivot around a fixed point while against the digging face.

