Exploring the Path of Chinese Railroad Workers

A Self-Guided Heritage Tour of Chinese Railroad Worker Sites from Auburn to Donner Pass.
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1882 Foundation

The 1882 Foundation, a non-profit, non-partisan organization, seeks to broaden public awareness of the history and continuing significance of the Chinese Exclusion Act of 1882. It does this through program initiatives to preserve oral history and heritage sites, develop curriculum and teacher workshops, and promote best practices and collaborations among museums and historical societies.

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Forest Service

The Forest Service enriches the lives of Americans in many ways through management of the national forests and grasslands, forestry research, and cooperation with forest managers on State and private lands. Today, the agency manages 193 million acres of forestland and grasslands across the United States. The Forest Service is dedicated to multiple-use management for the sustained yield of renewable resources such as water, forage, wildlife, wood, and recreation. Multiple-use means managing resources under the best combination of uses to benefit the American people while ensuring the productivity of the land and protecting the quality of the environment.

Bureau of Land Management

Bureau of Land Management (BLM) is a federal land managing agency under the Department of the Interior, and BLM manages 258 million acres. Most BLM lands are located in the western United States, including Alaska, and are dominated by extensive grasslands, forests, high mountains, arctic tundra, and deserts. In addition to heritage resources, like Chinese historical sites, the BLM manages a wide variety of other resources and uses on public land, which include: recreation; energy and minerals; timber; forage; wild horse and burro populations; fish and wildlife habitat; wilderness areas; archaeological, paleontological; and other natural heritage values.

And

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150th Anniversary of the First Transcontinental Railroad
Railroad Heritage Sites

Bloomer Cut
Cape Horn Passage
Secret Town Fill
Summit Tunnel
Summit Camp & Central Shaft
China Wall
Tahoe Catfish Pond
The First Transcontinental Railroad of North America, known originally as the "Pacific Railroad" was completed in 1869 with the aid of Chinese laborers, who were originally hired on a trial basis.

When work on the Transcontinental Railroad began, neither Union Pacific nor Central Pacific wanted to hire Chinese immigrants, due to the general prejudices of the time. By the mid 1860s, however, the leaders of Central Pacific had realized that it was difficult to recruit railroad workers and keep them on the job. Central Pacific's part of the project included the Sierra Nevada mountains, which rose to elevations of over 14,000 feet and were very treacherous. The company needed thousands of laborers but had only been able to find hundreds. In addition, the Irish workers it had managed to hire constantly requested higher wages.

The Chinese were so successful in completing the first phase of the project that the Central Pacific expanded its efforts to hire more Chinese immigrants. Many of the workers were from southern China, trying to escape the poverty and social unrest that characterized their homeland at the time.

During construction in 1868, around 12,000 to 15,000 workers built the Transcontinental Railroad over the Sierras and into the interior plains. By the time the Transcontinental Railroad was complete (May 10, 1869) at Promontory Summit, Utah, Chinese laborers made up over 90 percent of Central Pacific's workforce.

Without the efforts of the Chinese workers in building America's railroads, our development and progress as a nation would have been delayed by years. The Chinese constructed the railroads in severe weather and challenging working conditions.
Despite their hard work, the Chinese experienced discrimination for generations after completion of the railroad. California laws prevented them from being admitted as witnesses in court, voting, and becoming naturalized citizens. Chinese schoolchildren were also subject to segregation. In 1882, Congress passed the Chinese Exclusion Act, which banned Chinese (except for scholars, merchants and diplomats) from entering the United States and prevented Chinese from becoming citizens. The anti-Chinese provisions were renewed several times in increasing harshness until they were rescinded in 1943.

Present day, the Transcontinental Railroad has garnered quite a bit of interest in the Asian Pacific American community because of the contributions of Chinese American railroad workers to this monumental feat. Many of those railroad heritage sites, abandoned or still in use, are situated on public lands managed by Forest Service and Bureau of Land Management. Two iconic sites, for example, the China Wall and the Summit Tunnel, are both located adjacent to the Tahoe National Forest in Sierra Nevada mountains.

About Tahoe National Forest

The Tahoe National Forest is one of many National Forests throughout the United States. Located 55 miles from Sacramento and 15 miles from Reno, this 850,000 acre Forest offers an abundance of natural beauty and historic charm. Visitors can choose from a wide range of activities, including exploring beautiful high mountain lakes, the fascinating geology of the Sierras, or the rugged Granite Chief Wilderness. The 1,500 to 9,400 foot elevation range of the Tahoe provides a wide variety of year-round recreational activities. There are also wonderful opportunities for discovering the rich history of the area. Visit us and find out more at: www.fs.usda.gov/tahoe.

This brochure serves as a self-guided tour for adventurers who are interested in exploring heritage sites of Chinese railroad workers. It includes 7 sites in Placer County and Nevada County in California. Learn about their stories in this brochure and go explore yourself!
Central Pacific Railroad (CPR) began work on the western portion of the Transcontinental Railroad in Sacramento on January 8, 1863. By the spring of 1864, workers dug a railroad grade with picks and shovels for 33 miles towards the northeast until they encountered their first significant obstacle – a long, tall ridge at Bloomer Ranch. Engineers could not design the railroad to climb over the ridge because it was too steep for railroads. Therefore engineers designed a railroad bed that would penetrate 800 feet across the ridge, and cut as deep as 63 feet at the center. Normally, going through such an obstacle would not be a problem, but this ridge was made of a rock suspended in clay, which effectively formed a massive, natural, concrete wall. The natural concrete broke picks, shovels, and other equipment, and therefore CPP decided to use black blasting powder.

The crews used 500 kegs of black powder per day, which proved to be an expensive and dangerous proposition. Indeed, one explosion blinded the left eye of the energetic and tall foreman, Harvey Strobridge, after he attempted to prepare 50 pounds of powder. The Chinese respected Strobridge, and those who learned English called him “Stro” or the “One-eyed bossy man.” Strobridge respected the Chinese workers after working a month with them. He stated, “They learn quickly, do not fight, have no strikes that amount to anything, and are very cleanly in their habits. They will gamble and do quarrel among themselves most noisily – but harmlessly.” The chief engineer, Samuel Montague, stated “The Chinese are faithful and industrious and under proper supervision soon become skillful in the performance of their duty. Many of them are becoming expert in drilling, blasting, and other departments of rock work.”

Ultimately, workers removed over 40,000 cubic yards of material, and completed the grade and tracks through Bloomer Cut in the spring of 1865. The first train reached Auburn from Sacramento on May 13, 1865, and Bloomer Cut was considered a great engineering feat to merit the title of the “Eighth Wonder of the World.”

Although the narrow pathway through Bloomer Cut does not follow current day railroad clearance standards, regulators made an exception to the Bloomer Cut clearance because the walls were so solid. The concrete-like walls have preserved Bloomer Cut well, and Bloomer Cut looks virtually the same as it did in 1865. However, development did threaten Bloomer Cut; developers proposed a bridge over Bloomer Cut, and they proposed to widen Bloomers Cut for another track. Fortunately, none of these proposals moved forward. However, the threat of development remains on the vacant land across from Bloomer Cut.

Now trains generally move westerly through Bloomer Cut while trains move east on another set of parallel tracks about 0.5 miles north of the Bloomer Cut.
Access Directions
Traveling east on I-80, exit at Maple Street (Exit 199A). Keep to your right in the “Y” intersection and travel less than 0.1 mi on Lincoln Way to another “Y” intersection. Keep to your right on Sacramento Street, and travel 0.2 miles to a 4-way intersection. Turn right on Auburn-Folsom Road, and travel 1.0 mile to a 4-way intersection and turn right on Herdal Drive. Travel less than 0.2 miles to the end of the Herdal Drive, and park at the dead-end fence a few feet past the intersection with Quinn Way on the left. Continue east hiking through a green belt alley for another 0.2 miles until you reach the top of the cut. A trail to the left leads down to the tracks.

Union Pacific owns the railroad tracks, and it is dangerous to venture into Bloomer Cut on foot because the quietly, coasting trains are difficult to detect around the blind corner; and it is difficult to clear the train once inside the narrow Bloomer Cut.
From I-80, Exit 135 for State Highway 174 West (Colfax and Grass Valley), head towards the frontage road east of I-80. Head north on this frontage road named, North Canyon Way, which parallels and adjacent to the eastern side of I-80. Drive 0.6 miles north on North Canyon Way to the Stevens Point Trailhead managed by the Bureau of Land Management. Hike about 1 mile on Stevens Trail to get glimpses of the tip of Cape Horn. Alternatively, get a glimpse of Cape Horn Passage in the parking lot of Red Frog Bar & Grill (1001 CA-174, Colfax, CA 95713).
Ships and travelers braving high wind, monstrous waves, and frigid temperatures sailed around the legendary Cape Horn near the southern tip of South America as a main trading route between the Indies and Europe between the 1600’s and early 1900’s. In addition, travelers used this same passage during the 1849 California gold rush when gold seekers traveled from the east coast of the United States to California. Not surprisingly 20 years later, those same gold seekers who helped build the Transcontinental Railroad decided to name the railroad passage, “Cape Horn,” around a formidable, steep, and rocky, outcropping 1300 feet above the north fork of the American River.

Cape Horn passage posed the greatest challenge because they needed to lay tracks around a steep mountainside. Engineers outside of Central Pacific Railroad considered the idea preposterous, but Central Pacific completed the job with the help of Chinese workers.

In the summer of 1865, Chinese workers began side hill rock cutting. To begin establishing the railroad bed on the side of the mountain, Chinese workers were likely lowered by rope down to the level of the planned roadbed until they were able to excavate a foothold through pick, shovel, or explosives.

Clearing the railroad bed was difficult, time-consuming, and dangerous. Rocks, large trees, stumps, and other vegetation needed to be removed. When using black powder, the explosion sent pieces of rocks, trees, and soil flying through the air at high velocity, which often accidentally killed Chinese workers. Stumps, especially, were difficult because it took over ten barrels of black powder to remove a large stump.

While visiting the Colfax area, one reporter wrote about Chinese workers: “They were a great army laying siege to Nature in her strongest citadel. The rugged mountains looked like stupendous ant-hills. They swarmed with Celestials, shoveling, wheeling, carting, drilling and blasting rocks and earth…” Ultimately, Chinese workers finished excavating the railroad bed and laying the tracks during the spring 1866. The route eventually became popular with travelers because of the panoramic view from Cape Horn; trains often stopped at Cape Horn to allow passengers to appreciate the view. This brought Cape Horn and Central Pacific national publicity, and tourist guides soon began re-imagining and rewriting how Cape Horn was built. Authors began writing that Chinese workers were lowered in chairs or baskets to excavate the railroad bed using explosives. However, there were little first-hand accounts during the Cape Horn construction to support these reinterpretations.

Between 1913 and 1915, the railroad abandoned the original tracks that rounded the mountain in favor of inside tracks that accommodated two tracks through the mountain. But by 1929, the railroad reclaimed the outside track to accommodate eastbound traffic while the inner tunnel track retained the west-bound traffic.
Secret Town Fill

After miners discovered gold in this area, miners wanted to keep the location a secret, and hence Secret Town was established. The Transcontinental Railroad ran near Secret Town as an impressive wooden trestle that stretched 1,110 feet across and 95 feet above Secret Town ravine. But during those times, wooden trestles often caught fire from smokestack sparks as trains crossed. To solve this dilemma, Central Pacific Railroad hired Chinese laborers to fill in Secret Town trestle with dirt. Chinese laborers moved an enormous volume of dirt from the surrounding landscape with hand and mule carts to the trestle. The subsequent filling-in of Secret Town ravine to accommodate I-80 and other features makes the Chinese laborers accomplishments less dramatic. Today, the trestle remains buried under the fill.

Access Directions

On I-80, exit at Secret Town Road (Exit 140), and head north. Turn right on Secret Town Road adjacent and within view of the I-80. Drive easterly on the paved road for 0.7 miles until the pavement transitions to a dirt road. Continue to drive easterly for about 0.53 miles, and you will see the railroad tracks on top of a wall of dirt to your right. Within this wall of dirt is the buried trestle. As you drive along this dirt road, the buried trestle ends about 0.73 miles along this dirt road from the pavement.
Summit Tunnel

Building the railroad through the Sierra Nevada was the most challenging aspect of the Transcontinental Railroad. Engineers surveyed the railroad to run through 13 tunnels of solid granite. Chinese laborers had to initially bore through rock using 8-pound sledge hammers and chisels by candle light or lantern to create 2-feet deep by 2.5-inch wide holes, which took hours for a 3-man crew to create. The Chinese laborers first filled 1/3 of the hole with blasting powder, and then clay/hay/sand to secure the fuse. They lit the fuse, ran, and the subsequent explosion sent rock debris, dust, and black powder residue into the air, which made breathing difficult. After the blast, the workers moved the heavy rock into baskets or carts and out of the tunnel. They moved at an excruciating slow pace of 14 inches per a non-stop 24-hour period, but towards the end of the project, they increased their pace to 22 inches per day when they began using the newly developed nitroglycerin.

Aside from dangerous blasting, numerous Chinese men lost their lives during the harsh and windy winters. During the winter of 1866-1867, 44 storms dumped an incredible amount of snow that winter. Many of the storms dumped over 6 feet per storm. Avalanches often swept groups of Chinese workers to their deaths. Chinese laborers had to resort to working and traveling through the snow in excavated snow rooms and snow tunnels connecting where they worked to where they lived in their bitterly cold one- and two-story wooden buildings. Summit Camp, where those structures were located, was one of the most long-standing and enduring work camps during the railroad construction.
Despite the harsh working conditions, Chinese laborers were not treated equally to their fellow white workers. On June 25th, around 5,000 Chinese went on a strike against the Central Pacific Railroad. The strike took place along the eastern slope of the Sierras between Cisco and Strong’s Canyon, which is near nowaday Eder. Chinese laborers fought for their rights including an increase in pay from $30 to $35 to $40 per month, reduced workdays from 11 to 10 hours, and shorter shifts drilling in life-threatening tunnels. Charles Croker, the director of Central Pacific Railroad, cut off food trains and other supplies and threatened violence to those workers. After 8 days, the workers ended their strike without any of their demands being met. But a few month later there is evidence that they did receive a pay raise.

After beginning work in the Sierras in the fall of 1865, Chinese laborers laid the tracks through the most difficult of the 1,687-feet Summit Tunnel #6 on November 30, 1867.

However, after the heavy winter snow storms, CPR realized that locomotives with plow attachments could not adequately remove snow from the tracks. Therefore, in summer of 1867, engineers began designing and experimenting with wooden snow sheds, which protected the tracks from avalanches and snow buildup. Eventually they built 37 miles of snow sheds through the Sierra Nevada by 1869. As snow removal improved, many wooden snow sheds were unnecessary, and therefore many were removed. Those that were still needed were eventually replaced by concrete snow sheds, which remain today.

Trains no longer use the Summit Tunnel and the portion of the historic Transcontinental Railroad that crosses Donner Pass. The tracks and rails have been removed, and train traffic has been diverted elsewhere. Union Pacific Railroad owns this portion, but unfortunately, these historic tunnels have fallen victim to graffiti and vandalism.

Access Directions

Traveling east on I-80, exit at Soda Springs – Norden (Exit #174), and turn right on Donner Pass Road. Travel 3.5 miles and turn right on to Sugar Bowl Road. Travel 0.1 mile and turn left at the Welcome sign onto Old Donner Summit Road. Drive a third of a mile, and park at the Sugar Bowl Academy parking lot to your right. To the left (west) of the road you will find an interpretive sign for the Central Shaft site, 100 feet to the west. To the right (east) you can walk to Summit Camp, Summit Tunnel #6 & #7, and China Wall (see map). Alternatively, continue driving turning right on Donner Pass Road an additional 0.7 miles to the China Wall parking lot vista on your right, and park at the small pull-out parking lot. Here you will have a good view of the China Wall and the east entrance to the Summit Tunnel. You can also hike up to China Wall and Summit Tunnel from this area (see map).

The blizzard of 1866 in the Sierras. Image Courtesy: Linda Hall Library.
When Chinese laborers worked on the First Transcontinental Railroad in Sierra Nevada mountains, they also built work camps along the railroad line. These camps, according to a report from the Federal Railroad Inspectors to the Secretary of Interior in 1867, are usually “built about one mile apart and consist of store houses, power houses, blacksmith shops, kitchen, eating and sleeping rooms, and stables for mules, horses and oxen.” As the construction progressed, these Chinese workers kept moving east, so most of those camps consist of temporary structures.

Summit Camp, however, is different from most work camps. Located just above the east entrance to the Summit Tunnel (Tunnel #6), this camp was in use during the construction of the Summit Tunnel in 1865 and was continually used until 1869 long after the tunnel’s completion in 1867. Due to its longer operation time along with the harsh winters on Donner Summit, Summit Camp had more substantial structures. Those houses in Summit Camp, one- and two-story high, were built strong enough to endure heavy snow to protect Chinese workers. But still, the working conditions were rough. Many workers could barely see the sun in winter as they traveled back and forth between their houses and tunnels under the snow for months.

There is now nothing above ground at the site. It is highly possible that when Summit Camp was left behind, buildings were taken apart and reused elsewhere. Over the years, archaeologists have found a lot of historic objects evidencing the life of Summit Camp’s Chinese inhabitants, including Chinese coins, porcelain rice bowls, and opium pipe bowls. However, the preservation of this historic site has been affected by a lot of construction activities such as the Lincoln Highway as well as tourist activities.

Just a little west to the Summit Camp is the Central Shaft of Summit Tunnel. Due to the slow excavation progress, the Central Pacific decided on August 1866 to open an 8-foot by 12-foot shaft at the top of the tunnel. It took Chinese workers 85 days to dig a 75-foot-deep vertical shaft through solid granite slabs to the center of Summit Tunnel. The shaft doubled the construction speed by allowing laborers to dig outwards from the center in addition to from the two ends of the tunnel. A small steam engine was later placed in a shaft house at the top of the shaft to haul rock from the tunnel. With construction on 4 faces simultaneously, the progress moved forward much faster. Nowadays, the top of the shaft is covered by a heavy steel panel.

Please see the direction of Summit Tunnel to learn about how to get there.
Shaft house on the right with other buildings of Summit Camp.

Camp near Summit Tunnel in 1865.

East Portals of Summit Tunnel and Wagon Road.

Summit Camp today.
Image Courtesy: Mobile Historical Research Team.

Steel panel over the central construction shaft.
Image Courtesy: Central Pacific Railroad Photographic History Museum.
Plaque of China Wall of the Sierra by Truckee-Donner Historical Society Inc. Image Courtesy: Dan Brekke.

The 75-foot lower wall and the upper wall at the entrance to tunnel #8. Image Courtesy: Peter Epstein.
China Wall

Between tunnels #7 and #8 in Donner Summit, a stone wall, originally built to hold up parts of the railroad tracks, still stands there more than 150 years after its construction. This railroad retaining wall, consisting of upper and lower parts, is called China Wall or Chinese Wall, to commemorate Chinese laborers who completed incredible railroad work in the Sierra mountains.

Tunnels #7 and #8 are two short tunnels constructed just east of Summit Tunnel (tunnel #6), the longest of the project’s 11 tunnels in the Sierras built by Chinese labor. To fill in the ravine between these two tunnels, stones were piled up without mortar. Most likely hand-moved from tunnel #7, these stones were 40 to 50 inches long and 12 to 20 inches tall. In addition, smaller stones are fitted in as needed to stabilize the walls. The lower wall is approximately 75 feet high, supporting the road bed between the two tunnels. Above it is the upper part of the wall. Although much shorter than the lower one, it holds up the embankment above the entrance to tunnel #8.

The China Wall is one of those remaining railroad heritage sites showing Chinese laborers’ contribution to the construction of the First Transcontinental Railroad. On August 11th, 1984, the Truckee-Donner Historical Society marked this place as a historic landmark with a plaque telling its story.

Please see the direction of Summit Tunnel to learn about how to get there.
Locally known as “Catfish Pond,” this green pool of water at the top of Donner Pass in the Tahoe National Forest is home to dozens of small, whiskered catfish. Catfishes are not native to the Sierras, nor are they naturally found at such high elevation (approximately 7,000 ft.). This pond has no streams that feed into it. Therefore, it is thought that this pond was stocked with catfish in the late 1860’s to feed Chinese workers. Those workers were building a stretch of the Transcontinental Railroad nearby, including the labor-intensive six and seven number Summit Tunnels which go straight through mountains of granite. The descendants of these stocked fish have survived in the pristine pond for over 150 years, and continue to thrive in this unusual environment even as the pond is covered with around ten feet of snow each winter.

Chinese railroad workers were generally in better health than their Irish counterparts, because they had a more varied diet, and refused to eat the “manly” diet of beans and beef. While others drank water from communal dippers, Chinese laborers preferred to drink tea and hot water, reducing the incidence of dysentery and other illness-causing microbes that were killed during the boiling process. They preferred to eat Chinese foods, including dried fish, dried vegetables, dried oysters and rice.

The Central Pacific Railroad gave exclusive rights to Sisson, Wallace and Company, to provide food and other provisions to the railroad workers. As the railroad tracks gradually extended through the Sierra Nevada’s, a train car labeled “China Store” would follow the work camps to the end of the tracks so that Chinese workers could make purchases. In groups of 12 to 30 men, crews could pay for a Chinese cook to prepare their meals. These cooks were highly valued, and often compensated better than the laborers they were feeding. In addition to all of the meal preparation, they brewed barrels of tea each day. It was evident from the fish bone remains found at camps, that the Chinese supplemented their diet with fish from local waterbodies. At other Chinese camps in the Sierra Nevada’s, bone remains from pigs and cows indicate that locally-sourced pork and beef were consumed by Chinese workers even deep in remote, forested areas. In ways, Chinese railroad workers adapted and maintained their rich, and varied food culture even while working a grueling and dangerous job, in a foreign land.
Traveling east on I-80, exit at Soda Springs – Norden (Exit #174), and turn right on Donner Pass Road. Travel 3.6 miles and enter the parking lot of the Donner Ski Ranch to your left, and park (see map). Begin hiking east along Donner Pass Road for about 0.1 miles until you see the Pacific Crest Trail on your left. Turn left, and hike on the famous trail for about 0.3 miles toward the northeast. Depart the Pacific Crest Trail on another trail towards the north, and travel another 0.2 miles until you reach a small pond about 225 x 225 feet about 1000 feet east of the much larger Lake Angela.