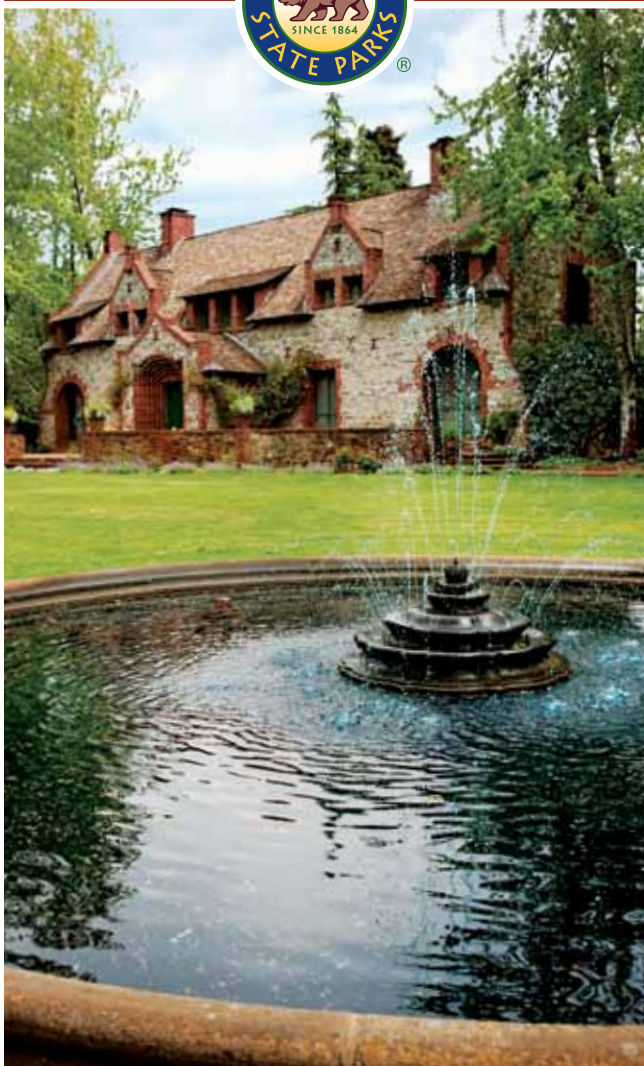


Empire Mine State Historic Park



Our Mission

The mission of California State Parks is to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.



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CALIFORNIA STATE PARKS

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Discover the many states of California.™

Empire Mine State Historic Park

10791 East Empire Street

Grass Valley, CA 95945

(530) 273-8522

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*Empire Mine State
Historic Park—site of one
of the largest, richest,
and longest-operating
(1850-1956) gold mines in
California—produced more
than eight billion dollars in
gold by today's standards.*



Empire Mine State Historic Park preserves what was once California's richest gold-producing mine. Located in the western Sierra Nevada 50 miles from Sacramento, this 856-acre park sits among beautifully forested foothills at elevations of 2,500 to 2,900 feet. Its 367 miles of deep mine shafts form a maze that is impressive to this day.

PARK HISTORY

Native Americans

At least 10,000 years ago, the western Sierra Nevada was populated by the Foothill Nisenan. Their lands were made up of the Yuba, American and Bear river drainages and parts of the Feather River.

The 1848 gold discovery brought tens of thousands of fortune-seekers to California, devastating the lives of the Nisenan. These so-called "Forty-niners" took the lands that the Nisenan had occupied for thousands of

years and claimed it for mining, farming and logging. Many Nisenan died from exposure to smallpox, measles and other diseases to which they had no immunity.

Today, Nisenan descendants live on and near traditional tribal lands, teaching their culture and language to a new generation.

New Mining Methods

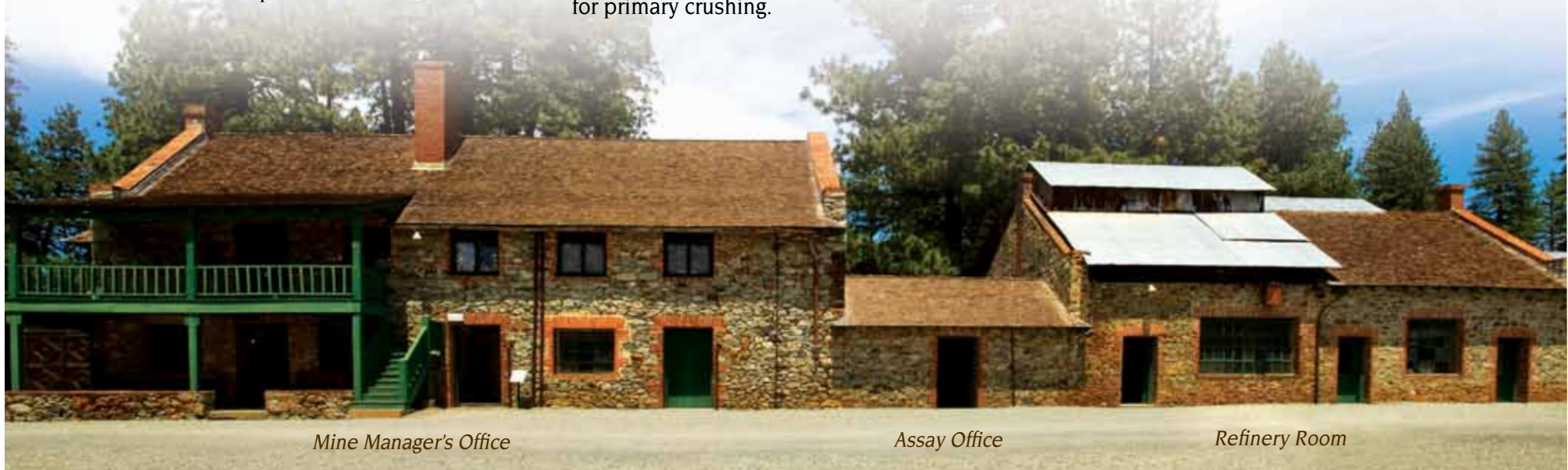
In 1850, prospectors found gold-bearing quartz in what is now Grass Valley.

Traditional placer mining methods, in which water was used to wash gold deposits from the sand or gravel of stream beds, was ineffective in this area. Instead, the miners used "hardrock" mining methods, in which men in buckets were lowered into deep shafts (coyote holes) resembling water wells to chip and drill through the rock. After filling the drill holes with black powder, they detonated it, loaded the blasted rock into ore cars and took it to the mine headframe for primary crushing.



At the stamp mill, the crushed ore, mixed with water, was placed on copper plates coated with mercury. The mercury-coated copper combined with "free" gold to form an amalgam. Water washed away any impurities, and the cleaned amalgam went to the refinery for further processing.

In 1905 the Empire adopted a more efficient mining method. In this process, cyanide was used to dissolve gold while it was still embedded in the quartz. The gold



Mine Manager's Office

Assay Office

Refinery Room

could then be leached out of the quartz ore in a liquid form. The cyanide method is still in use around the world.

Modernization and Mules

Until mules were introduced, miners moved the ore-laden cars manually. Known as one of the most efficiently operated gold mines in the U.S., the Empire counted among its improvements the use of mules to pull ore cars. The mules lived in underground barns until they became too old to work.

The Empire Mine did not begin to prosper until 1869, after San Francisco businessman William B. Bourn, Sr., acquired a controlling interest. Production dropped in 1874, followed by Mr. Bourn's sudden death that same year.

William Bowers Bourn, Jr.

In 1879, Mr. Bourn's 22-year-old son, William B. Bourn, Jr., took over management of the mine to

keep it from closing.

Fortunately, he was able to lead the mine back to profit. He was later able to push several mine shafts past the 1,200-foot level that had been considered the maximum depth.

George W. Starr

Mr. Bourn's 19-year-old cousin, George W. Starr, began work at the mine in 1881. By 1887 he had gone from loading



William Bourn, Jr.

rocks and ore into cars (mucker) to superintendent. In 1893 Starr—by then considered a mining genius—left to work in South Africa's gold mines. When Starr visited San Francisco a few years later, Bourn convinced him to return to the Empire, where Starr worked another 30 years.

After 1929 the Empire Mine—first combined with the North Star Mine as Empire-Star Mines Ltd. and then sold to Newmont Mining—produced enough gold to keep the Great Depression of the 1930s just a story in the local newspapers.

End of the Empire

The mine closed during World War II when many miners enlisted. In 1945 the mine reopened, but gold was still at its 1934 price—\$35 per troy ounce. Unfortunately, it then cost more to bring gold to the surface than it was worth. However, mining efforts continued for another decade. In 1956, when the Empire closed, it had yielded nearly six million troy ounces of gold—a true bonanza.

Geology

Gold deposits of the Grass Valley mining district occur in quartz veins deep underground. Granite bodies called plutons were formed when molten rock (magma) slowly cooled below the surface of the earth. During the final stages of cooling, liquids with dissolved silica and gold pushed their way into the fractures, shear zones and fault lines of older rocks and hardened, forming the solid veins of gold found in quartz.



ca. 1870

The Cornishmen

The Cornish miners who arrived around the mid-1850s brought with them a well-honed work ethic and 1,000 years of history as hard rock miners. They also brought the Cornish pump, which allowed them to pump water out of the 1,200-foot mine shafts.

When shafts were drilled below the earth's water table, they would fill with water. Each Cornish pump could draw 18,000 gallons of water per hour from the shafts, replacing manual mud diggers. Between the late 1870s and 1956, when the mine closed, Cornishmen provided the bulk of the mine's labor force.



*Crystalline gold
from Empire's Pennsylvania Mine*



These geologic actions, happening miles below the surface of the ancestral Sierra Nevada, were later uplifted and revealed by tectonic movement.

ACCESSIBLE FEATURES

Due to historic doorway widths and steep stepwells, not all exhibits and attractions are accessible. To arrange for transportation, to borrow wide-tire wheelchairs, or for information on alternative entries or lifts, ask at the visitor center, call the park or visit <http://access.parks.ca.gov>.



Exhibits/Programs—The visitor center and museum are generally accessible.

Parking/Restrooms—Parking on the south side of Empire Street allows close and safe access. Accessible restrooms are near the south parking lot.

Mine shops and exhibits area—Routes through the park include some paved walkways, some sloping terrain and shifting gravel. Restrooms are generally accessible.

Empire Cottage—The first floor of the cottage interior, generally accessible except for one tight hallway, is shown by guided tour only. Formal gardens may be seen from above at the ramp to the cottage.

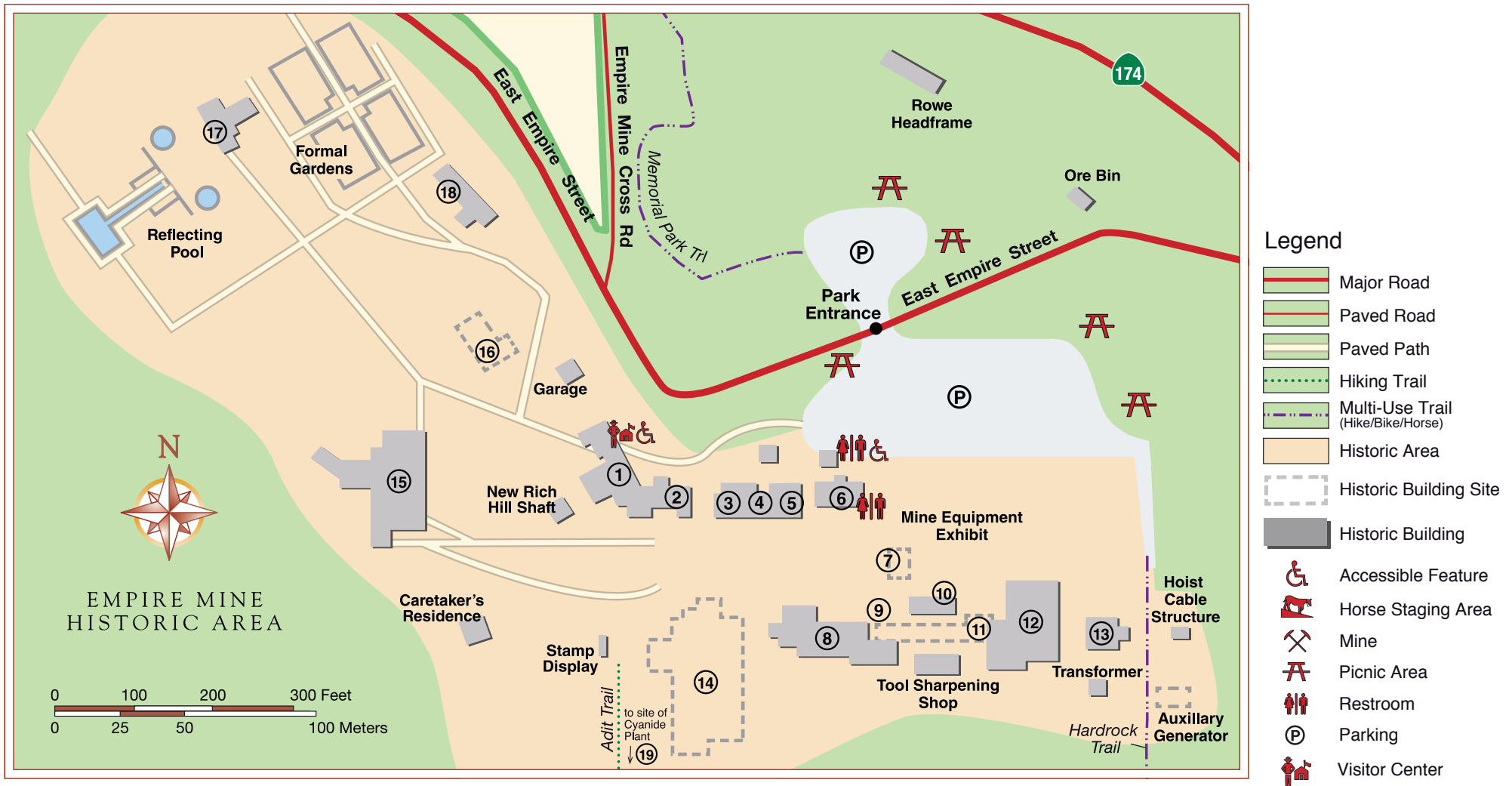
NEARBY STATE PARKS

- Malakoff Diggins State Historic Park
23579 North Bloomfield Park Road
Nevada City, CA 95959 (530) 265-2740
- South Yuba River State Park
17660 Pleasant Valley Road
Penn Valley, CA 95946 (530) 432-2546

PLEASE REMEMBER

- Stay on marked trails.
- To ensure public safety, some areas are fenced and closed to the public.
- Drinking water and restrooms are not available along the trails.
- Watch out for poison oak, ticks and rattlesnakes.
- Roads and trails allow dogs on a six-foot leash only. Except for service animals, dogs are not allowed inside historic buildings or in mine shafts.
- All natural and cultural features are protected by law and may not be disturbed or removed.





BUILDINGS AND SITES

1. Visitor Center and Model Room

The former carriage and automobile house is now the visitor center. Gold samples are on display.

The sprawling scale model display of the Empire-Star Mine complex dates back to 1938. The once-secret model was regularly updated to reflect the growth of the mine.

2. Mining Engineer's Office

After the 1929 merger with North Star Mine, this office housed the new engineering staff hired to plan and direct the mine's growth.

3. Mine Manager's Office

This restored 1898 office represents the ownership periods of both William Bourn, Jr. and the Newmont Mining Corporation.

4. Assay Office

Values were assigned to each gold sample here; it now serves as a rescue station.

5. Refinery Room

Mercury from the stamp mill was recycled, and the remaining sponge-shaped gold nuggets were cast into 89-pound bars and taken to San Francisco's U.S. Mint.

After the cyanide process was installed in 1910, additional furnaces more efficiently recovered the gold and silver.

6. Warehouse

Reconstructed by volunteers in 1989, this former hay- and supply-storage area is now a meeting and training facility.

7. Welding Shop Site

After the mine closed, the old metal shop, where equipment had been fabricated and repaired, was torn down and sold.

8. Machine Shop

By 1886, Pelton water wheels provided energy to run operations and lights. Note the leather belts and ceiling-mounted shafts and wheels, still in place.

9. Shaft Viewing Area

The ore “skips” that moved the rock to waiting ore cars sped through this portal at 600 and 1,200 feet a minute. The deepest shaft is more than 5,000 vertical feet down.

10. Blacksmith Shop

In the early days, equipment—from door hinges to pump covers and stamps—was fabricated in the company shops.

11. Headframe Site

The mine's headframe, demolished in 1969, supported a track that carried men, equipment

and rock to and from the mine. From the headframe's crusher, ore went to the stamp mill for further processing.

12. Compressor Building

The compressors pumped air into the mine to ventilate it, and to operate machinery.

13. Hoist House

Here, skilled hoistmen raised and lowered men, supplies, waste rock and ore to and from the various mine levels.

14. Stamp Mill Site

Little remains of this building. Early in the process, its eighty stamps smashed the raw ore, which was then washed over mercury-coated tables to capture the gold.

15. Empire Clubhouse

William Bourn, Jr. built the clubhouse for use by his supervisory personnel and as a place to entertain visiting guests. The 1905 clubhouse is still used by the Empire Country Club and for park special events.

16. Starr Home Site

Only the foundation of Ophir Cottage, George Starr's home, remains. Flames destroyed it on October 28, 1935, despite all efforts to save it.

17. Empire Cottage

This English manor home, designed in 1897 by architect Willis Polk, was called a cottage



Garden and greenhouse



Heirloom roses

to distinguish it from Mr. Bourn's other homes. The main floor holds the kitchen, service rooms, living room, dining room and a reading room later used as a bedroom by Mr. Bourn, Jr. Four bedrooms and two baths are on the second floor. The servants' rooms and a bathroom were located above the kitchen.

18. Gardener's House and Greenhouse

The Bourns loved trees and flowers of all kinds. The nearly 1,000 vintage rose bushes seen in the formal garden and on the landscaped grounds were cultivated in their greenhouse.

19. Cyanide Plant Site (1910)

Earlier methods of recovering gold were replaced by adding sodium cyanide to crushed ore. The cyanide dissolved and separated the gold from sulfides.

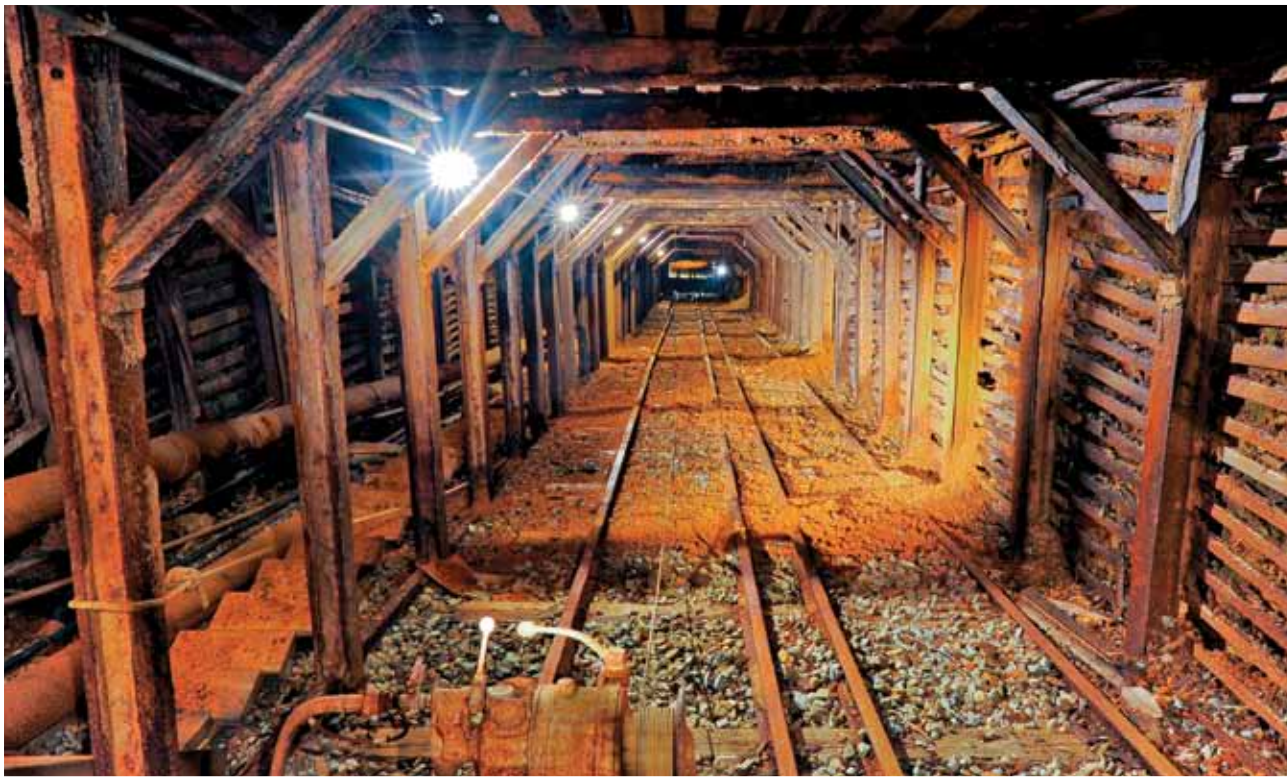


Blacksmith Shop

Headframe

Mine Shaft

Machine Shop



WALKING TRAILS

The Union Hill, Hardrock, and Osborn Hill Loop trails wind through nearly a century of hardrock mining history. To ensure public safety, some areas of the park are fenced and closed to the public.

Union Hill Trails

These one- to three-mile trails feature wildflowers in spring.

Pipeline Trail—This trail led from the Empire Mine to the Northstar powerhouse.

Indian Ridge Trail—This trail was once used by the Nisenan/Maidu people.

Union Hill Trail—This trail loops westward from the north Pipeline Trail to the edge of the park next to the town of Grass Valley.

Hardrock Trail

This easy two-mile walk circles much of the Empire's "outback."

Little Wolf Creek Restoration Area—

The natural environment of this creek is being restored to its original condition.

Little Wolf Creek Road (Hardrock Trail)—

Along this road, trucks moved waste rock.

Stamp Mill Foundation—On this site, California's first stamp mill crushed gold-bearing quartz, treated it with mercury, and turned it into almost pure gold.

Cyanide Plant Site (closed to visitors)—Cyanide dissolved gold-bearing sulfides, allowing the recovery of more gold.

Trail Fork (Osborn Hill Trails)—From here; Osborn Hill Loop climbs upward, ending near several abandoned mines.

Orleans Stamp Mill Foundation—

This stamp mill operated until the early 1900s.

✂ **Orleans Mine**—Under the leadership of William Bourn (and later the Newmont Mining Corporation), this small claim was absorbed by the Empire Mine.

✂ **Pennsylvania Mine**—The Pennsylvania Mine site is marked by the concrete foundations of its compressor house.

✂ **W.Y.O.D. Mine**—The "Work Your Own Diggins" mine leased claims to miners.

Mule Corral—This old corral was home to the mules before they were lowered into the mine.

Sand Dam—This waste rock area was high and strong enough to support a narrow-gauge rail line across Little Wolf Creek.

Osborn Hill Loop Trail

This demanding segment of the Hardrock Trail leads to some abandoned mine sites.

✂ **Prescott Hill Mine**—To the left of the shaft foundation is the headframe foundation.

✂ **Betsy Mine**—The hoist and pump works of this mine were removed before 1900.

✂ **Conlon Mine**—This mine, difficult to keep drained, closed in 1908.

✂ **Daisy Hill Mine**—Two piles of waste rock mark the site of the small Daisy Hill Mine.

This park is supported in part
through the nonprofit Empire Mine Park
Association, 10787 East Empire St.
Grass Valley, CA 95945
www.empiremine.org

