



Stevens Camp



Moved our camp a few miles above on account of better water and grass. Here it is concluded to spend a day of rest. Near our camp is one of the most beautiful springs of cold water gushing out of the mountain I have ever seen.

Jonathan Clark September 22, 1849

The water at Stevens Camp springs was the first really good water along the trail since the emigrants entered the Black Rock area. This big spring follows a major fault which channels the water that is collected in the large watershed above it.

Singular Rock



Californian

This vertical basalt dyke was a feeder vent for younger flows in the area. The dyke is harder than the older volcanic rocks into which it intruded.

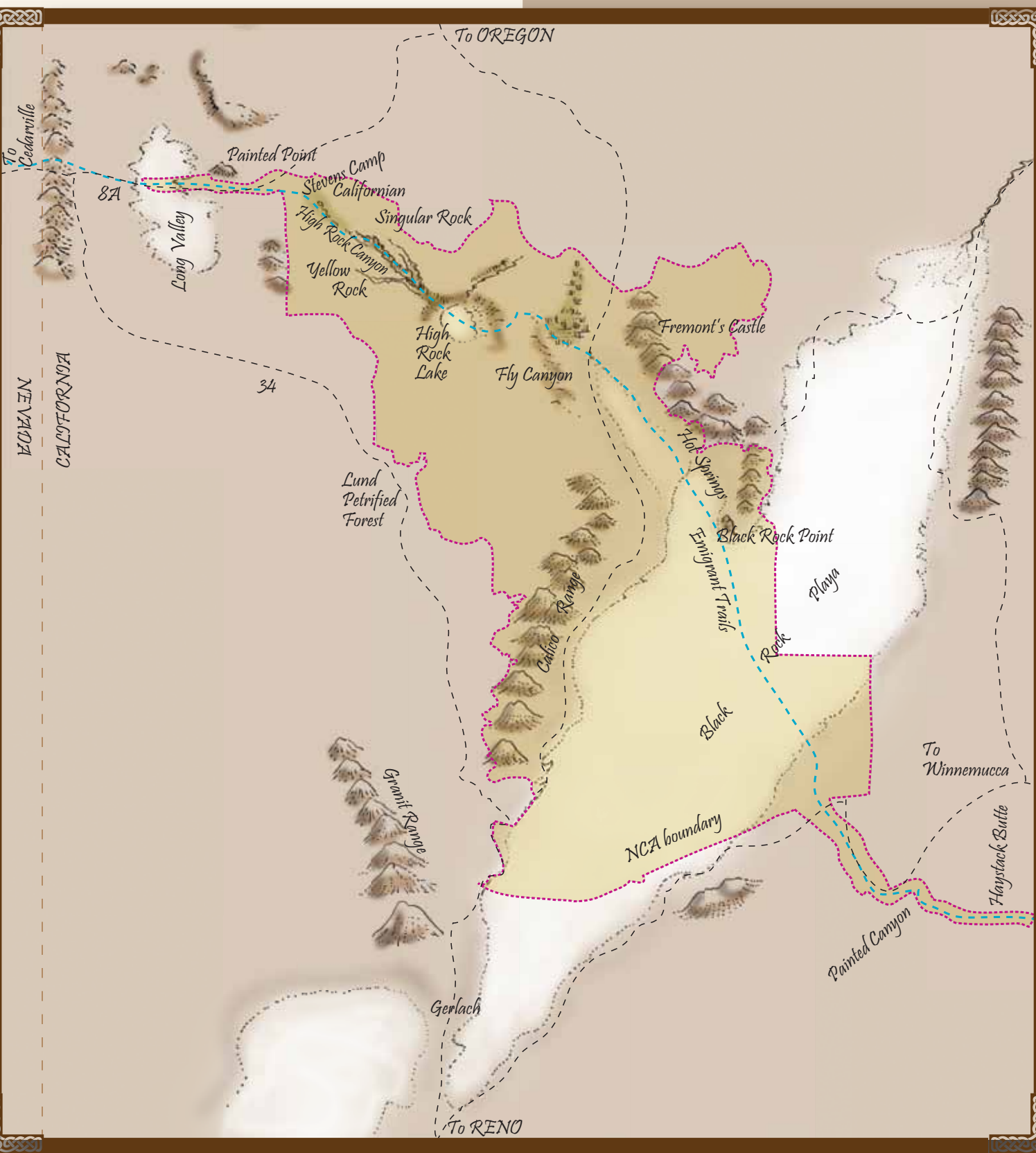


... a very exact caricature of a Californian done in red basalt. He seems to be kneeling at the south end of a long block of stone. His body thrown forward, elbows on his thighs and chin on his hands. A pretty large nose, and a decently long chin, but neither are unnatural. He has a pack on his back, and appears to be addressing a multitude of objects a few yards north, among which I distinguish the head of an ape, and one of a dog.

Israel S. P. Lord September 22, 1849



Singular rock on left of road J. Goldsborough Bruff September 29, 1849



Fires were absolutely necessary for the fingers, mine were never colder even during the rigours of an Atlantic winter. The thermometer at 6 o'clock standing at 11 degrees above zero and by noon it was up to 90! Such is August 29th, 1849!

Charles Glass Gray August 29, 1849

On both sides, the mountains showed often stupendous and curious-looking rocks, which at several places so narrowed the valley, that scarcely a pass was left for the camp.

John C. Fremont December 30, 1843

The mocking rocks were apparently ready to join the glee of the boys, for they answered back their words and sent them ringing along from cliff to cliff.

William Swain September 29, 1849

High Rock Canyon

The walls of High Rock Canyon are made of layers of thick rhyolite, welded tuffs, and lava flows. The deeply incised canyon was eroded by water which was concentrated and channeled along a structural weakness (fault) in these volcanic layers.



Painted Point

I turned and looked back at the mountain we had left, Painted Point. On the west it presents a bold front of white rock, most singularly striped horizontally with yellow and orange. I never before saw anything like it.

Israel S. P. Lord September 25, 1849

Painted Point is an example of inverted topography. Here a basalt flow filled in a topographic depression in older, softer ash deposits. The softer ash eroded away leaving the resistant basalt cap and underlying material.



Long Valley

We had gone on a desert plain about twelve miles, when before us we saw a pond of clear water, perhaps five miles in circumference, and we all hurried to the muddy beach to quench our thirst, and eagerly dipped up our cups full. "Salt," roared one--"Brine," echoed another--"Pickle for pork," said a third; and with thirsty throats, we resumed our toilsome march.

Alonzo Delano August 24, 1849

Long Valley is a classic example of a down-dropped basin that filled with water during the Pleistocene to become Lake Meisner. The valley is filled with these lake bed sediments and alluvium eroded from the surrounding mountains.



The Black Rock Playa is a remnant of Pleistocene-era Lake Lahontan, which was once filled over 500 feet above the present playa surface. The playa itself is made of 10,000 feet of fine materials eroded from the surrounding mountains. As one of the flattest landforms on earth, it was topographically one of the easiest portions of the trail for emigrant travel, yet it was the most feared because of its harsh conditions.

In about 12 miles the greasewood and sage which had been tolerable plenty gave place to a perfectly barren plain called the Salt Plain, from the saline incrustation on the surface of the ground which glistened in the moon beams and had very much the appearance of an endless field of snow.

Andrew Lopp Murphy September 8, 1849

Black Rock Playa

Late in the afternoon we gave our oxen a bucket of water each with about a qt flour stirred into it and started across a plain called salt plain said to be 12 miles across.

Anaias Rogers Pond August 25, 1849

...This part of the road might have been traced by the line of dead Cattle. Many were not yet dead but too weak to stand, and many more were reeling over this barren waste in different directions, allured no doubt, as men frequently are, by the illusive mirage which represents lakes of water at no great distance.

Elijah Preston Howell August 24, 1849

Black Rock Point

This major landmark for the Applegate-Lassen Trail is made of andesitic lavas and fossil-bearing limestone, a result of the collision of the Oceanic Plate with the North American Continental Plate. Volcanic material from ancient island chains is interlaced with deposits from the ancient sea that surrounded them. You might find marine fossils in the blackened limestone!



We passed the rocky cape, a jagged broken point, bare and torn. The rocks are volcanic, and the hills here have a burnt appearance--cinders and coals occasionally appearing as at a blacksmith's forge.

John C. Fremont January 3, 1844

At break of day we reached Black Rock--an immense mass of dark-colored basalt, with high precipitous sides, from beneath which issue large boiling springs, furnished quite a rivulet for the thirsty plains below.

George Edward Hayes September 4, 1849

...At the end of the ridge we found an immense boiling spring from whence the steam was rising like smoke from a furnace. A large volume of water issued from the spring which irrigated several hundred acres of meadow. Although the water was strongly impregnated with alkali, it was fit for use when cooled, and the spot was, on the whole, a very good camping place for the desert.

Lindsey Applegate July 12, 1846

Painted Canyon

The colorful walls of Painted Canyon resulted from a series of volcanic ash and cinder layers that have been exposed by erosion. The variety of tints are colored by their different chemical compositions.

Need photo

Descending a couple of miles through a defile, we passed the most beautiful hills of colored earth I ever saw, with the shades of pink, white, yellow and green brightly blended.

Alonzo Delano August 16, 1849

... high clay bluffs and hills, of the most delicate and beautiful warm tints, in horizontal strata.

J. Goldsborough Bruff September 20, 1849



Yellow Rock

This section is broad and has some fine rocks on the right. They are whitish and bright yellow, shaded with light green. Stock water at the upper end, and beyond the yellow rock and under some white ones crowned with basalt is a fine spring. Just beyond on the right is the grave of "G. F. Woodin, Jefferson Co. Wisconsin. Died Sept. 2, Aged 40 years.

Israel S.P. Lord 1849

Here, there is an intersection of two faults which provides a conduit for magma-generated hot waters that are highly mineralized and acidic. These waters chemically altered previously deposited tuffs, forming new minerals which then weathered to produce the variety of colors seen here.

Fly Canyon

Had some verry stony rodes. One hill we locked both wheels & put on ropes to let our wagons down. All got down safe. Saw some hundim sights along the rocks. Holes maid buy the wind.

Abram Mines August 17, 1849



High Rock Lake



... valley has near the middle a mud bottom, now dry like the great mud lake.

Israel Lord September 21, 1849

Erosion produces dramatic landforms in the desert. The landscape looks like it is unchanging, with most erosion and deposition happening too slowly to see, but sometimes, catastrophic events shape the land suddenly. One of the NCA's most dramatic erosional features is near High Rock Lake. Long ago, a massive landslide in Box Canyon blocked the flow of water to create a natural dam. High Rock Lake formed behind the landslide dam until the water rose to the level of another outlet, Fly Canyon.

Sudden outflows of water from High Rock Lake tore away the rock of Fly Canyon. Violent vortices of water and rock drilled holes in the streambed. Emigrants passing through this canyon noted huge potholes in the stream bottom with one almost one hundred feet wide and undercut twenty feet at the bottom.

Mining in the NCA

In 1849 James Hardin, a member of a wagon train passing along the Applegate-Lassen Trail, collected ore samples that he believed to be lead, from the nearby Black Rock Range. Years later he had the ore assayed and found it to be high in silver content. In 1858, he and a party of men tried unsuccessfully to relocate the lost silver source. Hardin City was built in the area in 1866 when it appeared that a silver ledge had been located with a waxy black clay that looked like hornsilver (a silver chloride ore of silver) at first glance. A dishonest assayer asserted that he could extract silver from this material using a secret fluxing agent. This "discovery" created much excitement and mills were brought in to process the "ore". The assayer and his secret fluxing agent soon disappeared, and the town site was totally abandoned by the summer of 1868. Foundations of the small settlement of Hardin City still remain.

Since these early mining attempts, prospecting for silver, gold, uranium, opals, sulphur, antimony, tungsten, gypsum, petroleum, and nitrates has taken place within the NCA. Prospects, shafts, adits, mining equipment, mining claim markers, small structures, and foundations can still be found. Today, only traces remain of other towns such as Sulphur, Rosebud, and Scossa that were established in or near the NCA.



1912 Jackson Mountain copper mine



Hardin City rock walls

Hot Springs



At the noon halt... were several boiling springs, two of which were great curiosities, the twins standing side by side... they are... about 30 feet in diameter... here we did our washing, and cooked our beans in the spring. (Double Hot)

Isaac Foster August 15, 1849

Encamped at the Black Rock mountain & Boiling Spring... We passed upwards of thirty waggons to day that were left on this desert in 1849 & Bones of hundreds of Cattle & Blacksmith tools, saw mill Saws & Different kind of machineries &c.

Solomon Kingery July 31, 1852



Frémont's Castle

From our position at noon across the valley to the N. by W. was a very remarkable resemblance of a castle or fortress, of a white substance, [probably clay], in the face of a brownish hill, resting on a shelf of the rock, about 1/3 from the plain; This I sketch'd and named it Fremont's Castle. It is about N.W. by W. from Black-Rock,

J. Goldsborough Bruff September 23, 1849

This topographic feature is made up of material from a localized and well consolidated ash flow that has been sculpted by erosion.



Haystack Butte

In the middle of the plain to the north, 6 or 7 miles from the road, rose a beautiful mound or peak in the shape much resembling a haystack. On approaching it I found it to be of micaceous granite, something about 100 feet high and 1/2 mile in circumference at the base.

Andrew Lopp Murphy September 6, 1849

This distinctive landmark is a 115 million year old chunk of Cretaceous granite that is surrounded by an apron of recent Pleistocene lake deposits. It sits above the surrounding lake deposits because the granite is more resistant to erosion than the softer lake deposits.

Lund Petrified Forest



Named after George W. Lund, the first modern naturalist to describe it, the Lund Petrified Forest site consists of over 250 petrified Giant Sequoia stumps with were buried upright by 15 to 16 million year old Miocene rhyolitic ash. The 40 acre site was once part of a forest of these towering giants. One stump is over 4 meters in diameter! Located just outside the NCA boundary, the site has been protected by a BLM fence since 1965. Please note the collecting of petrified wood and fossils is prohibited here.

Glossary of geologic terms:

Rhyolite: a volcanic rock that most commonly resembles granite but can range from pumice to obsidian depending on the rate of cooling.
Welded tuff: volcanic ash that is deposited hot enough to weld together.
Basalt: common fine-grained extrusive volcanic rock. Some basalts cool slowly to form polygonal columns.
Alluvium: geologically young, loose deposits of clay, silt, sand, and gravel that have been eroded, transported, and deposited by water.
Andesite: an extrusive volcanic rock that is characteristic of subduction zones.
Dike: narrow, often vertical intrusions of volcanic material into fissures of older, surrounding rock.

Photos courtesy L. Dufurrena, BLM, Humboldt County Museum Illustrations from J. Goldsborough Bruff Map by sdesign