

Alum Rock: Where geologic history bubbles up from the ground

This Exploration created in collaboration with the



Just a few minutes outside of San Jose, you'll find a place to explore 100 million years of history. Alum Rock Park, created in 1872 as the first municipal park in California, offers both ancient rocks and new geologic changes (and lots of nice trails and wildlife, too). Despite its longevity and proximity to a populous urban area, it remains one of the less-visited jewels in the Bay Area's crown.

Location

16240 Penitencia Creek Road
 San Jose, CA 95127 [map](#)
 408-259-5477



The lush Penitencia Creek, which bisects the Park, flows year-round. Once home to the Ohlone Indians, Alum Rock Park features rugged ridges with spectacular views of the Santa Clara Valley, geologic formations including mineral springs and evidence of seismic events, and a variety of native flora and fauna.

Park hours are daily from 8am until one-half hour after sunset.

Parking: \$6

Youth Science Institute

Founded in Alum Rock Park in 1953, Youth Science Institute provides year-round school and public programs and interpretive services in the Park, thanks to a long-term partnership with the City of San Jose.

YSI is a 501(c)3 non-profit organization that partners with nature to teach science to 33,000 pre-school through 12th grade

students throughout Silicon Valley each year. YSI school programs, after-school programs, and summer camps fill the gap that is present in science education today to inspire in students enthusiasm for science and love of learning, to develop the critical thinking skills they need for academic success, and to forge connections with nature that foster their personal health and earth stewardship.

YSI has two additional Science and Nature Centers at Sanborn Park in Saratoga and Vasona Lake Park in Los Gatos. Each Center is open to the public and features live animals and interactive exhibits, as well as year-round programs.

16260 Penitencia Creek Road San Jose, CA 95127


Open All Year, Tuesday – Sunday, 12:00 noon – 4:00 PM or by appointment.

(Closed on Sunday from October-April)

Special thanks to the City of San Jose’s Alum Rock Park Staff, and to YSI Staff John Harshman, Dorothy (DJ) Johnson, Bonnie LeMat and Susanne Mulcahy for their participation in this Exploration.

Robin Marks and Lauren Sommer contributed to this Exploration.



 **Marker 1** latitude 37.3965 longitude -121.799

1a. Western screech-owl



Alum Rock Park is home to a legion of critters, and hikers with attentive eyes are likely to spot some wildlife. The Western screech-owl (*Megascops kennicottii*), here nestled in the crook of a tree, is small by owl standards (only 8-10 inches high), but capable of taking prey larger than itself, like a rabbit or duck. Most of the time, though, these owls hunt insects or small rodents.

1b. Acorn Woodpecker cache



This tree's become a food storage pantry for local acorn woodpeckers. Living a communal lifestyle, a family of these birds will select a tree (or, in some cases, a utility pole) in which to stock the whole group's supply of winter acorns. Throughout the winter, the group remain near its granary tree, which may have as many as 50,000 acorns stowed in it.

1c. Acorn Woodpecker



It's easy to recognize these acorn woodpeckers by their red crowns and black-and-white clown faces.

Photo: [Steve Ryan](#)



Marker 2 latitude 37.3969 longitude -121.798

2a. Vertical rock strata



Evidence of the park's volcanic past reveals itself along the hike. These layers of shale were once mud at the bottom of a body of water that once covered the region. Now, they're not only above ground, but are nearly vertical, owing to the pushing and plowing of the tectonic plates that continue to give Northern California its famous earthquakes.

2b. Vertical rock strata close up



Looking more closely at the rock, you can see the strata, and how the rock breaks easily along the lines along the layers.

2c. Another kind of vertical strata (above the water)



Another set of rock layers that were laid down horizontally millions of years ago and have since been uprighted by tectonic forces. These rocks are a mixture of shale and a hard rock called chert. Chert is formed only at the bottom of deep oceans, made of the compressed silica skeletons of billions of tiny marine animals called radiolarians.

2d. Closeup of vertical strata



A closer look at shale and chert rock strata.



Marker 3 latitude 37.3973 longitude -121.7972

3a. Clue #2: drips and lumps



Curious-looking lumpy rounds of rock near the creek are more evidence of past volcanic activity. They are lumps of flowstone, rock made from minerals, largely calcite, dissolved in the hot spring water. When that water reaches the surface, it cools and evaporates, depositing more minerals on the existing rock.

3b. Clue #2: drips and lumps II




More flowstone cascading down a hillside.

3c. Drippy wet stalactites



These pointy formations have the familiar look of cave stalactites, and indeed, they're formed in the same way. Rain that's fallen on the top of Alum Rock's mountains flows through rock layers, picking up minerals. Further down the mountain, the water flows out, depositing minerals as it drips to the ground. The "ceiling" it drips from develops pointy tips that focus the drops of water below them, creating the rounder lumps of rock pictured previously.



 **Marker 4** latitude 37.3976 longitude -121.797

4a. Hot spring



Ah, now this is why people began coming to this area in the first place--hot springs! When you find them, inside a set of small shelters along the South Rim trail, put your hand in for a nice warmup.

4b. Hot spring 2



The water in these springs has fallen on the top of the nearby hills and flowed through layers of rock still warm with residual heat of volcanoes that were active here tens of thousands of years ago. The air carries a whiff of sulfur, one of the minerals picked up by the water during its travels.



Marker 5 latitude 37.3978 longitude -121.7971

5a. Mineral deposits



The water that flows through this volcanic landscape leaves minerals everywhere--as rock formations, as a scent in the air, and here, as dust on rocks nearby the hot springs. The fine particles, mostly sulfur, are left behind by the warm, mineral-rich water as it evaporates.

5b. Scraping mineral deposits



Getting a closer look at the mineral deposits by scraping some of them off with a penknife.

5c. Mineral deposits in relation to spring entrance



You'll find the dust deposits just a few feet from the shelters over the hot springs. The white blotch near the ground to the left of the spring entrance is rock strata covered with minerals.



Marker 6 latitude 37.39811 longitude -121.79729

6a. History: a spring entrance



Not long ago, the hot springs at Alum Rock drew crowds of people from across the country who believed the minerals in the water had a healing capacity.

6c. Alum Rock Bath



In its previous incarnation as a spa, Alum Rock was overrun with tourists visiting the baths, a huge swimming pool, amphitheater and restaurant.

6b. Alum Rock history



Near the ends of this bridge, you can still see remnants of the smaller pools and the benches built in them for bathers.

6d. Alum Rock history



In the 1970s, the fanfare of amenities at Alum Rock ended; most of the buildings were taken down, the large man-made swimming pool demolished, and the park became a preserve, returning to a more natural state. You can still see many relics from the old days, like this mineral-encrusted door, along some of the trails.



Marker 7 latitude 37.4006726 longitude -121.7957184

7a. Mountain Lion



Perched in suspended animation, a mountain lion bares its teeth to visitors to Alum Rock's Youth Science Institute. Also known as a puma or cougar, this large cat can lithely leap 40 feet in pursuit of prey. Much of the state of California (and many other states) is cougar habitat, though human development is constantly encroaching on the puma's environment, resulting in dwindling populations in some areas.

7b. Toe Biter (*Abedus indentatus*)



Look out for this aptly named insect lurking at the bottom of creeks and lakes, waiting to strike potential prey. The toe biter (officially known as *Abedus indentatus*) delivers a more painful chomp than any other insect. The digestive saliva it injects can liquefy muscle tissue. The round balls attached to the bug are eggs, which the female cements onto the back of the male. Image Source: NoiseCollusion

7c. Ground Squirrel



Ground squirrels are common throughout California and Alum Rock is no exception. This one is hunched in its burrow, but these fetching rodents can often be seen sitting upright on their hind legs. When they feel threatened, they let out a metallic-sounding screech to warn its other family members.

7d. Deer



As in many northern California parks, there's no shortage of deer to be seen at Alum Rock. Look for their trails in the park, which often run between where the deer eat to where they rest. Photo courtesy zyqzee

7e. Bobcat



A more unusual sightseeing treat in Alum Rock is the bobcat. Bobcats are the most common wildcat in the United States. Their distinctive ear tufts make them easy to recognize. Because they're nocturnal, they're rarely spotted during the day. Photo: www.wildphotos.com



Marker 8 latitude 37.4036 longitude -121.7943191

8a. Differing habitats of Alum Rock



The steep slopes and varied topography of Alum Rock afford it several different habitats. Here, north-facing canyon walls that get little sunlight sport ferns, large trees, and other lush greenery.

8b. Differing habitats of Alum Rock



In contrast, high up on the sunnier, south-facing slopes is a chaparral environment, with scrub, bushes, and grasses.

8c. Interesting little plant




A wide variety of plants dot the riparian corridor next to the park's creek.

8d. Horsetail



You'll also find stalks of horsetail growing near the creek. These ancient plants are unusual in that their stems are covered with silica. They are also commonly known as scouring rush, because they were once used to clean cooking pots.



 **Marker 9** latitude 37.4039 longitude -121.7938753

9a. River shapes the rocks



Sandstone near the creek is worn smooth by rains and passing water. This rock is most likely a traveler from the top of a nearby hill, washed down into the canyon by winter storms.

9b. Underground stream



Follow the trail and the stream disappears beneath your feet. In this spot, it's flowing through porous sandstone below the trail.

9c. Stream resurfaces



A little further down, the underground stream encounters a barrier of non-porous shale, and it's forced back to the surface again.