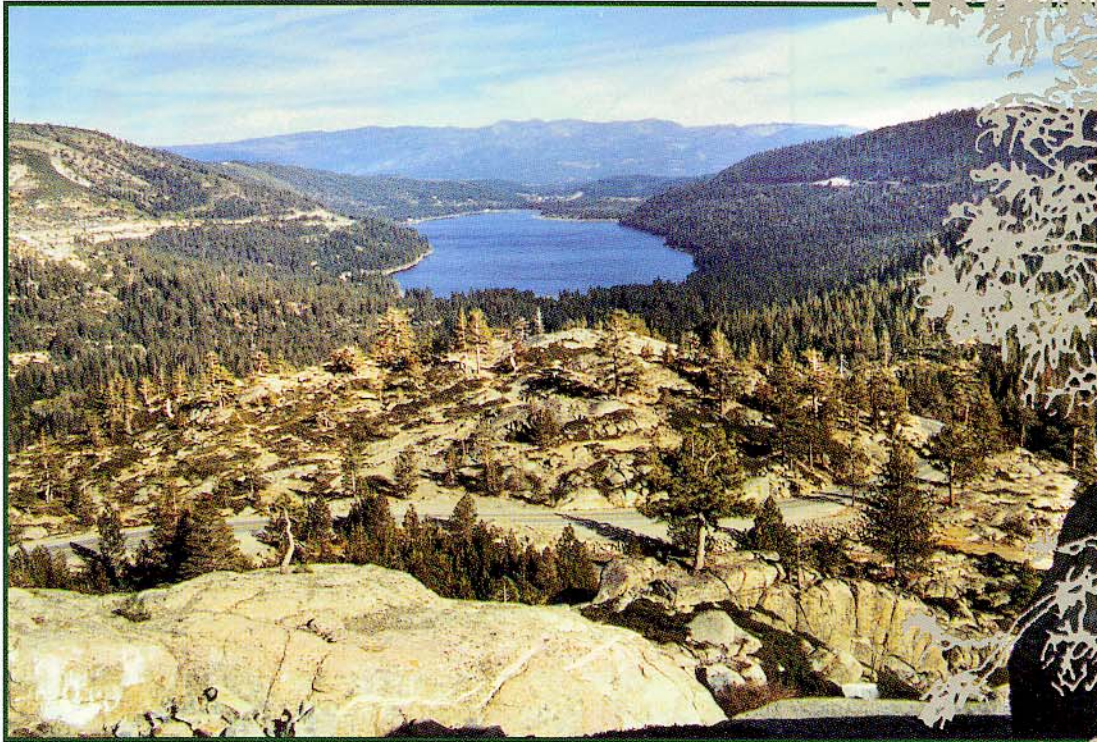




# Geology of Donner Lake



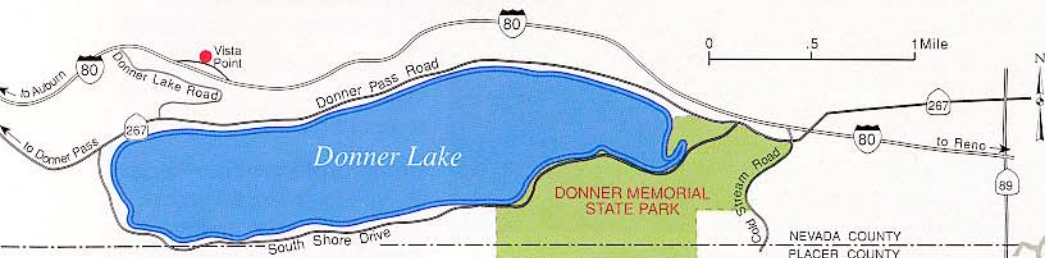
Donner Lake, Nevada County. Photo by Max Flanery

## DONNER MEMORIAL STATE PARK

The park encompasses 350 acres and offers swimming, campgrounds, picnic sites, cross-country skiing trails, fishing, hiking trails, a visitor center, and the Emigrant Trail Museum. The museum has exhibits of the area's railroad history, logging, and natural history. For more information about the park, call (916) 582-7892.

## THE DONNER PARTY

The winter storms of 1846-47 were some of the worst to ever hit the Sierra Nevada Mountains. During that winter, the 89 members of the Donner party were trying to cross the dangerous and steep cliffs by wagon. The blizzards that blasted through the 7,200-foot mountain pass stranded them and more than half died of starvation or froze to death. Donner Pass, Donner Lake, and Donner Memorial State Park are named in honor of these pioneers.



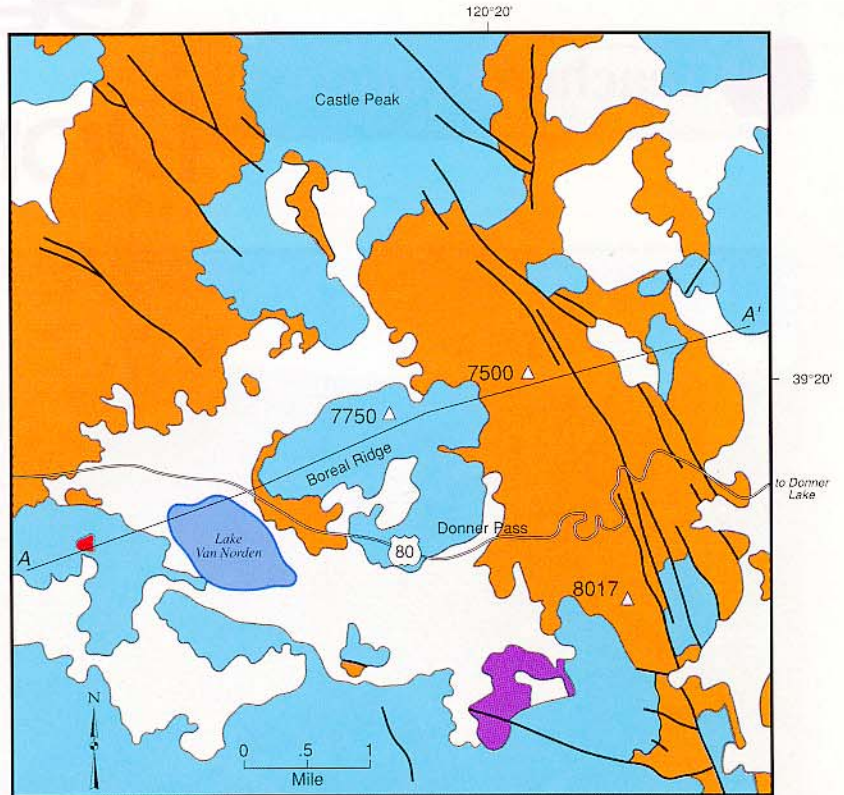


Teacher Feature continued...

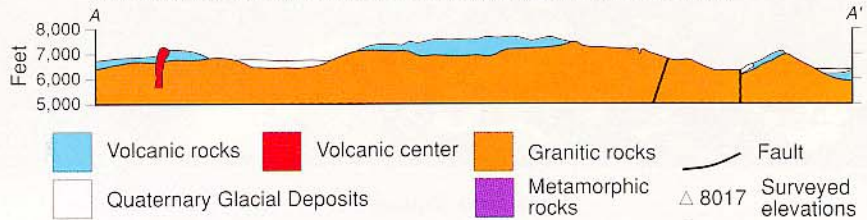
**GEOLOGY**

The rocks around Donner Pass record millions of years of geologic history. Although the exact age of the oldest rocks is unknown, we think they were deposited several hundred million years ago as sand and gravel in a shallow sea. About 100 million years ago, far beneath the earth's surface, molten rock called magma, intruded these older rocks and cooled to form granite. Beginning several tens of millions years ago, lava flows, hot ash, and volcanic mudflows erupted from volcanoes along what is now the crest of the Sierra. This volcanic material inundated the drainage system, forcing the streams to cut new canyons.

Erosion has stripped away much of the volcanic material, but remnants of the dark-colored volcanic rock still cap the ridges overlooking Donner Pass. Over the past 2 million years, the rocks have been sculpted by the grinding action of glacial ice during repeated ice ages. Glaciers flowed down the eastern slope of Donner Pass, scouring out the basin that now contains Donner Lake.



Geology modified from F.S. Hudson, 1991, Geological Society of America Bulletin, v. 62.



Alpine pool near Gold Run Rest Stop on Interstate 80. Photo by Max Flanery.

**GLOSSARY**

**Quaternary glacial deposits:** Rocks that were transported by glaciers or icebergs, and deposited on land (or sea) about 2 to 3 million years ago.

**Volcanic rocks:** Rocks resulting from volcanic action at or near the earth's surface.

**Volcanic center:** A site where volcanic activity is happening or has happened.

**Granitic rocks:** Rocks containing quartz as an essential component.

**Metamorphic rocks:** Rocks derived from existing rocks by mineralogical, chemical, and/or structural changes.