

# Geology Highlights Along ride the rockies 2009 Route

**DAY 1 SUNDAY, JUNE 14**  
Glenwood Springs to Hotchkiss **80 miles** (Photo by Rian Houston)

At the junction of the Colorado and Roaring Fork Rivers, Glenwood Springs lies near the eastern edge of the Colorado Plateau. Faulting here adjacent to the mountains provides a conduit for superheated water to come to the surface. Transit through Pennsylvanian-age (306 to 312 million years old) evaporites accounts for the high salinity of the hot springs, the saltiest in the State. Our southerly route gives us a spectacular view of Mt. Sopris as we leave the Roaring Fork Valley and begin ascending the Crystal River Valley. Rising 6,250 ft (1,905 m) above the valley floor, such relief makes Mt. Sopris seem higher than its 12,953 ft (3,950 m). Mt. Sopris is made up of granitic rock solidified from magma that intruded about 34 million years ago—coincident with much igneous activity elsewhere in Colorado.

**DAY 2 MONDAY, JUNE 15**  
Hotchkiss to Gunnison **80 miles**

We pedal through the north part of Black Canyon of the Gunnison National Park, where the Gunnison River cut a deep gorge (2,425 ft, 740 m) through Precambrian-age gneiss and schist (about 1,800 million years old). Taken together, the depth and narrowness are what give the Black Canyon its name—a reference to the lack of sunlight rather than the color of the rocks, which are a combination of gray, white, black, and pink. Along our route, we'll see Dillon Pinnacles north of Blue Mesa Reservoir. Extraordinary volcanic eruptions and mudflows from stratovolcanoes of the West Elk Mountains about 30 million years ago formed the rocks that comprise the Pinnacles.

**DAY 3 TUESDAY, JUNE 16**  
Gunnison to Salida **65 miles**

About 20 miles east of Gunnison, we'll pass a prominent landmark north of the highway—Tomichi Dome. A laccolith, Tomichi Dome formed when a feeder dike intruded magma between sedimentary layers and bowed them up; the encasing sedimentary layers were subsequently eroded revealing the dome-like structure of the intrusion. As we crest Monarch Pass (11,312 ft, 3,445 m) on the Continental Divide, we'll be crossing the Sawatch Range, which has more 14'ers (mountains above 14,000 ft, 4,265 m) than any other range in Colorado. The Sawatch Range is made up of some of the oldest rocks in Colorado (as old as 1.8 billion years old)—mostly granites and some gneiss.

**start/finish**  
Glenwood Springs

**DAY 6 FRIDAY, JUNE 19**  
Aspen to Glenwood Springs **40 miles**

Folded and faulted Paleozoic (251 to 542 million years old) rocks host the mineral-rich deposits of gold, silver, lead, and zinc that were mined in Aspen. Situated on a wide, nearly flat expanse of glacial outwash, the lower limit of glaciation extended 2 to 3 miles (3 to 5 km) below Aspen. Thousands of feet of ice carved the U-shaped valley of the Roaring Fork River Valley during the Ice Ages of the Pleistocene.

Leadville

**DAY 4**  
WEDNESDAY, JUNE 17  
Salida to Leadville **60 miles**

Today we'll ride northward up the Arkansas River Valley between the Sawatch and Mosquito Ranges. The Arkansas Valley is the northern extension of the Rio Grande Rift, which began forming 30 to 26 million years ago. The rift is formed by a series of half grabens (elongate blocks of rock down-dropped along one side; the faults of the Rio Grande Rift flip-flop from the west to the east sides of the rift valley). The headwaters of the Arkansas River lie below Mt. Elbert, Colorado's tallest peak (at 14,433 ft, 4,400 m).

**DAY 5 THURSDAY, JUNE 18**  
Leadville to Aspen **55 miles**

The Leadville Mining District and other nearby districts together produced millions of tons of zinc and lead, and millions of ounces of silver and gold ore. Tunnels under the Continental Divide transport Western Slope water to Twin Lakes, where it is stored for downstream power generation and eventually, Eastern Slope water. Moraines of Pleistocene glaciers (maximum extent at about 18,000 years ago) form the dams of Twin Lakes. The highest point on our tour, at 12,095 ft (3,685 m), Independence Pass bisects the Continental Divide through the Sawatch Range.

Gunnison

Monarch Pass  
11,312 ft

Salida

McClure Pass  
8,755 ft

Aspen

Independence Pass  
12,095 ft  
(Photo by Rian Houston)

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(Photo by Norm Herr)

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