



## DAY 4 WEDNESDAY, JUNE 18 –

### Delta to Gunnison

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). The canyon is the deepest and narrowest in the country; so the name refers to the lack of sunlight rather than the color of the rocks.

Along our route, we'll see Dillon Pinnacles north of Blue Mesa Reservoir. Violent volcanic eruptions and mudflows from stratovolcanoes of the West Elk Mountains about 30 million years ago formed the rocks that comprise the Pinnacles. The larger rock fragments protect the softer, muddy ash material from erosion.

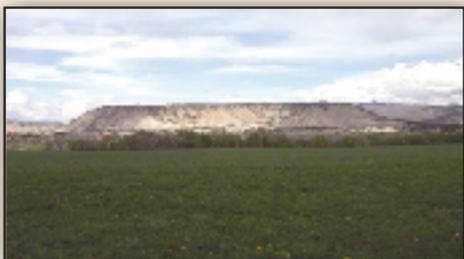


## DAY 3 TUESDAY, JUNE 17 –

### Montrose to Delta

Montrose lies in the Uncompahgre River flood-plain; terraces mark former river levels.

Grand Mesa, the flat-topped mountain to the north, is capped by late Tertiary basalt flows that protect the underlying poorly consolidated, less resistant early Tertiary rocks. The basalts erupted in response to the same crustal extension that shaped the valleys of the Rio Grande Rift.



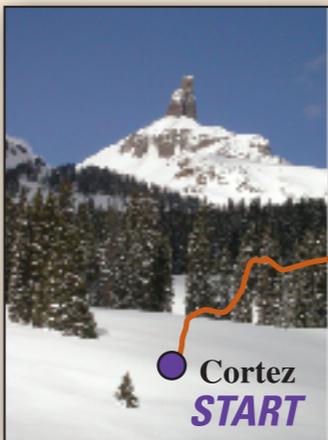
## DAY 1 SUNDAY, JUNE 15 –

### Cortez to Telluride

As we pedal up the Dolores River valley to Rico, we go down through the rock sequence from Mesozoic to Paleozoic rocks; the sequence is reversed north of Rico because Laramide (about 50 million years ago) intrusions pushed up the strata forming a dome. The intrusions injected mineral-rich fluids along contacts with Paleozoic rocks resulting in economically viable mineral deposits in the region.

Rugged peaks such as Lizard Head indicate they protruded above Pleistocene glaciers. Lizard Head itself is an eroded remnant of pre-volcanic conglomerate capped by reddish gray welded tuff. Glaciers smoothed much of the topography around Lizard Head Pass.

Rich in mining history, Telluride is named for a gold-bearing tellurium compound, which is found in veins. Some veins were mined 3000 ft (900 m) vertically, others up to 7 mi (11 km) horizontally.



**Cortez**  
**START**

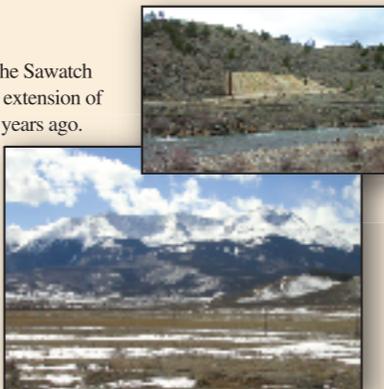
## DAY 7 SATURDAY, JUNE 21 –

### Buena Vista to Copper Mountain

Today we'll ride 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 valleys).

The headwaters of the Arkansas River lie below Mt. Elbert, Colorado's tallest peak (at 14,433 ft, 4,400 m).

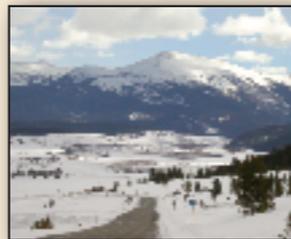
**Copper Mountain**  
**FINISH**



## DAY 6 FRIDAY, JUNE 20 –

### Gunnison to Buena Vista

As we head up the Taylor River drainage from Almont toward Cottonwood Pass, we'll ride through Taylor Park, a half-graben (a down-dropped block with a fault along one side; here on the east side), that formed during the Miocene (about 20 million years ago). We cross over the Sawatch Range at Cottonwood Pass through some of the highest mountains in Colorado. The Sawatch Range is composed of



Precambrian-age rocks (1,400 to 1,800 million years old)—mostly granites and some gneiss.

## DAY 5 THURSDAY, JUNE 19 –

### Rest Day in Gunnison

Gunnison has the distinction of being one of the coldest places in the conterminous U.S. during the winter. In a valley today, Gunnison was once near the crest of an old highland of the Ancestral Rockies (245-320 million years ago).

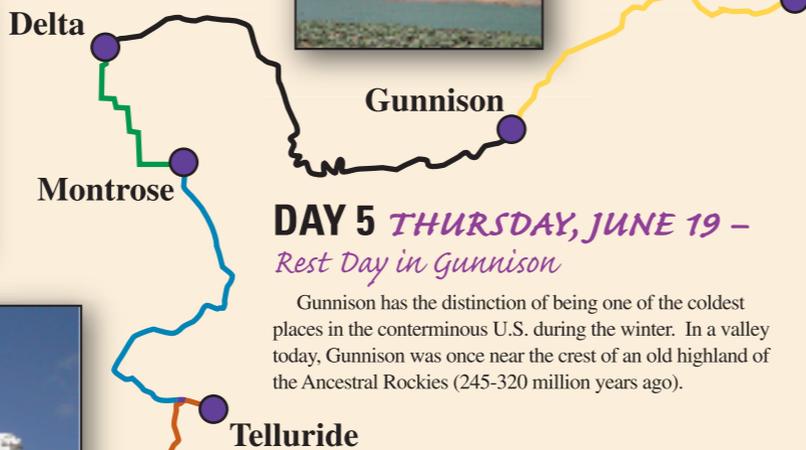
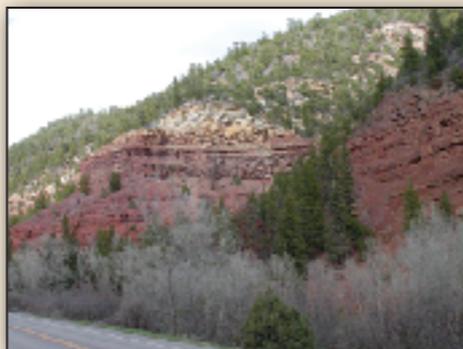
## DAY 2 MONDAY, JUNE 16 –

### Telluride to Montrose

The area around Telluride is prone to landsliding due to volcanic rocks containing poorly consolidated volcanic ash layers, easily erodible Mancos Shale, and valley walls oversteepened by glaciers. Pleistocene glacial moraines extend down the valley to just east of Placerville.

Dark red sandstone of the Permian Cutler Formation forms the cliffs along Leopard Creek on our way up to Dallas Divide.

From Ridgway to Montrose, Mesozoic rocks juxtapose the stream-deposited ice-age glacial debris of the terraces of the Uncompahgre River.



# Geology Highlights of the 2003

