

MILEAGE DESCRIPTION

0 / (18.3) Begin (end) road log at the intersection of Highway 550 and County Road 361. The Ouray Fault runs east to west here, bringing very old and intensely folded Precambrian rock (over 570 million years old), up and adjacent to younger, Paleozoic rock (approximately 350 million years old).

0.3 / (18.0) Bridge across the Uncompahgre River and location of the Ouray ice park.

0.3 - 4.5 / (13.8 - 18.0) As you travel up (down) Canyon Creek, observe the bedrock exposures on the north side of the canyon. Here, hundreds of million of years of geologic history is exposed, telling geologists of ancient seas, swampy coastlines, meandering streams, and the formation and ultimate erosion of lofty mountains, now long gone. For the next 4 miles, Canyon Creek traverses relatively horizontal bedded sedimentary bedrock units dating from around 100 million years to around 400 million years ago. Exposures of these units are only seen along steep canyon walls as recent landslide, glacial, and stream deposits cover the more gentle slopes.

2.1 / (16.2) **STOP 1 (STOP 9):** Bridge across Canyon Creek at Angel Creek Campground. Note the areas of broken vegetation and rock in the drainage across Canyon Creek. This debris is the result of an avalanche. Many avalanches run in the same path year after year, tearing out vegetation and forming avalanche chutes. Next, observe the rock debris along the road at Stop 1 (9). This rock material was deposited by a debris flow during a flood event along the steep drainage on the west side of the road. Debris flows are composed of water, mud, and rock swept down slope during periods of heavy rain or rapid snow melt. The rock eventually falls out of the debris flow and the mud is washed away, leaving the rock debris seen here. Debris flows are common in the San Juans.

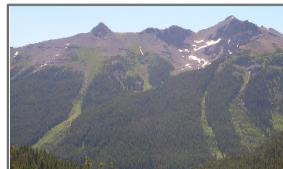


Photo on right: avalanche chutes near Canyon Creek.

2.7 / (15.6) Weehawken Trailhead and Thistledown Campground

3.2 / (15.1) Spring seeping from the contact of sedimentary bedrock formations and supporting a hanging garden along the shelf road.

3.7 / (14.6) Switchback in road.

4.5 / (13.8) Several forms of slope instability common in steep alpine topography are at work here. On the south side of Canyon Creek is the Waterhole Slide, an avalanche that frequently closes the road with snow depths of 20 feet or more (Moore, 2004). The broken vegetation is a reflection of the destructive force of avalanches. On the north side of the road, note the aspen trees curving back into the hillside in a "pistol-butted" shape, indicative of a gradual, surficial slope failure called creep. These aspen trees are growing on a debris fan formed by rock swept down the drainage during a flood event. Here vegetation, which can serve to stabilize a slope, is impacted by the destructive forces of erosion, slope failure, and avalanche.

4.8 / (13.5) **STOP 2 (STOP 8):** Camp Bird Mill (Lower Camp Bird). Wide pullout for overview of historic mill site. The Camp Bird Mill began operation in 1896, processing ore from the surrounding mines and eventually the site included a boarding house, shops, warehouses, and residences. Aerial tramways extended from the mill to the mines. By 1916 the rich ore had begun to play out and the mill site operated only intermittently.

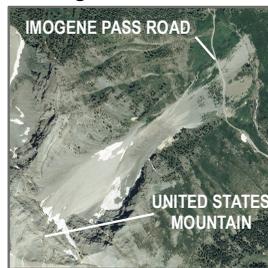


Camp Bird Mill and United States Mountain with prominent rock glacier.

The rock exposed on the north side of the road is the San Juan Formation, volcanic rock deposited in a series of eruptions of vast stratovolcanos and volcanic calderas from 30 to 15 million years ago. Eventually the volcanos collapsed; metallic laden molten rock was injected into the fractured bedrock, criss-crossing the region with ore-bearing veins. To the east, observe the forested slopes with vertical chutes where repeated avalanches have stripped away vegetation. To the southwest is United States Mountain, characterized by the prominent rock glacier extending down the east face. The Imogene Pass road crosses the toe of this landform.

5.4 / (12.9) Shelf road in the San Juan Formation, a volcanic rock which comprises much of the mountain slopes along the Imogene Pass road.

6.2 / (12.1) **STOP 3 (STOP 7):** Intersection of the Imogene Pass road (CR26B) with the Yankee Boy Basin road (CR26). Potosi Peak is the large mountain to the north. The lower slopes are composed of the San Juan Formation and the upper slopes are composed of younger volcanic rock. Multiple episodes of volcanic activity and intrusion of ore-bearing magma occurred in the San Juans. When the volcanic eruptions ended, glaciers formed in the high mountains, carving the present landscape.



Aerial view of rock glacier on United States Mountain (photo NAIP)

7.6 to 8.0 / (10.3 to 10.7) You are crossing the toe of the rock glacier extending down the east side of United States Mountain. This rock glacier is also an active avalanche chute in winter months.

8.0 / (10.3) **STOP 4 (STOP 6):** Pull out for a single vehicle on uphill (west) side of road. Walk north a short distance to view the rock glacier (and avalanche chute) on United States Mountain. The paths of the avalanche chute from United States Mountain and one located on the opposite hillside converge on the valley floor, below.

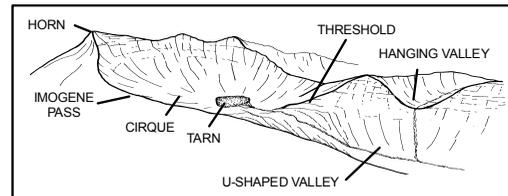


Rock glacier at Upper Camp Bird.

9.1 / (9.2) **STOP 5:** Upper Camp Bird. Initially worked as a silver mine, the Camp Bird mine was later developed as a gold mine, accessing the Camp Bird vein. In "One Man's West", David Lavender describes the mining process, the life of a miner at Camp Bird in the 1930's, and the ordeals of traveling from Ouray to Camp Bird. The mine workings of Upper Camp Bird are located in a glacial cirque. Most prominent at Upper Camp Bird is the immense rock glacier encroaching on the mine site.

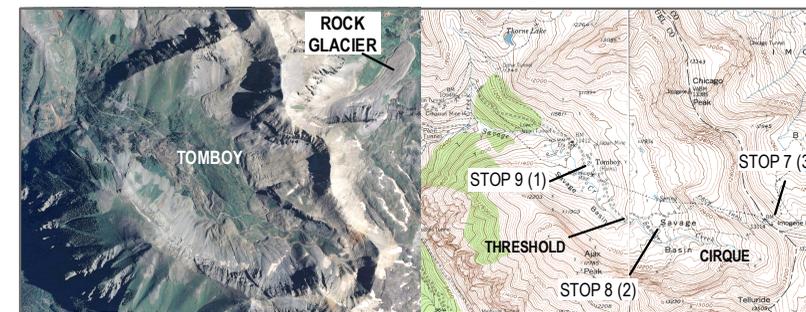
10.1 / (8.2) **STOP 6 (STOP 4):** Pull out at switchback for an overview of the Upper Camp Bird mine. Below, you can see the remnants of an active mining operation with the mine adits, tailings, ruins of buildings, and remains of the frames of tramways. Prominent at Upper Camp Bird is the enormous rock glacier slowly creeping down, engulfing the mine site. Rock glaciers are fed by rock fall and move in a plastic flow of ice and entrained rock. Look for the compression ridges near the snout where rock and ice have piled up as the rock glacier slowly creeps downhill.

11.8 / (6.5) **STOP 7 (STOP 3):** Summit of Imogene Pass. To the northwest is the green valley of the San Miguel River and the Town of Telluride. Savage Basin is located at the head of the valley and was carved at the very summit of an alpine glacier that gouged the U-shaped valley that includes Telluride down valley. In traveling from Imogene Pass to Telluride, you are following the path of a glacier. Compare the vista below you with the drawing of glacial landforms (on the left). The open basin below you is the cirque, the birthplace of the glacier where snow accumulated, was compressed into ice, and began to flow downslope under the force of gravity. The abandoned mine site of Tomboy is located at the cirque threshold and Bridal Veil Falls tumbles off the precipice of a hanging valley.



Landforms of an alpine glacier.

13.0 / (5.3) **STOP 8 (STOP 2):** You are located at the threshold of the glacier that once filled Savage Basin and flowed down the canyon below you. Above you to the south and east is the cirque where the glacier formed; below you is the U-shaped valley where the glacier flowed. To the north are the old mine workings of the Tomboy Mine. To the northwest is Marshall Basin, site of the Smuggler-Union vein and tapped by the series of mine adits extending up the steep mountain side. The region is literally criss-crossed with ore-bearing veins intruded around 10 to 15 million years ago into the faults and fissures that resulted from the collapse of the vast volcanic field.



Air photo and map of Savage Basin and Tomboy

14.0 / (4.3) **STOP 9 (STOP 1):** Tomboy mine and settlement site. Note the remains of the settlement and mine workings which tapped into the network of rich ore veins in the region. Harriet Fish Backus came to Tomboy as a bride and wrote of life in the mining camp in the 1880's. Her book, "Tomboy Bride" provides wonderful insight into life at the mining camps, winters spent at an elevation of 11,500 feet, and travel down the road to Telluride and up over Imogene Pass to the Camp Bird mine. The ruins of Tomboy are protected as a historic site. Abandoned mine and mill sites are dangerous; use caution if you explore the area.

15.6 / (2.7) View across the San Miguel Canyon to the hanging valley of Bridal Veil Falls. The shear drop below the U-shaped valley was formed when a tributary glacier joined a larger, trunk glacier moving down the San Miguel River canyon.

15.9 / (2.4) Tunnel

18.3 / (0) Jud Weibe Trailhead. End (begin) road log.



Hanging valley at Bridal Veil Falls