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*Structural Geology of the Fountain Formation in Lory State Park*

Lory State Park is located in the foothills of the Rocky Mountains and is where the Paleozoic sedimentary rocks come into contact with Precambrian igneous and metamorphic rocks. The main valley of the park has igneous and metamorphic rocks on the west side and hogbacks of sandstone on the east side. The valley is underlain by the Fountain Formation which consists of siltstone, sandstone, and conglomerate. There is a hill at the parking area for the Arthur's Rock Trailhead that has some of the only rock outcrops of Fountain Formation in the valley. The geologic map does not show the geologic cause for this hill. Three simple possibilities may explain the presence of this hill. It could either be 1) a fold, 2) a fault, or 3) a difference in the resistance to erosion. The purpose of this project is to test the hypothesis that the high point in Lory State Park is caused by one or more of the three possibilities. In order to test this, I took strike and dip measurements and estimated grain size at 60 locations in the park. Out of my three initial possibilities, my data show that a combination of a fold and a fault formed the hill. This conclusion is important because knowing about the faults around Horsetooth Reservoir is crucial for safety reasons. Since Arthur's Rock is such a popular hiking destination, an improved understanding of its formation could help visitors to the park better appreciate the landscape around them.