

The great Bear Creek flood

By Don Ellis

We are often reminded of the prominent role of geology in shaping our local history. Sand dunes from 280 million years ago became the sandstone which was the basis for an industry and the material for many buildings. Veins of the gold ore sylvanite around a caldera west of Pikes Peak brought great wealth to our region and patrons to Colorado City's more infamous establishments.

No less important in shaping our history than the minerals which have been mined and the stone which has been quarried is our landscape itself. Our mountains, our canyons, our waterfalls, our plains are all the product of virtually countless geologic events.

In this little essay, I am exploring one of those events. In geologic history, as in human history, one often does not know what actually happened, but one pieces together bits of information to construct a likely description.

A geologist friend, the late Hal Prostka, commented to me once about the dogleg in Bear Creek near the Bear Creek Nature Center, "Streams just don't do that by themselves." He suggested that the creek might have been diverted by a landslide. However, I've found little plausible evidence of a major landslide which would have diverted the creek. The area above and south of the Nature Center, as well as some areas to the south, are capped by Rocky Flats alluvium, material which washed down from the mountains about a million years ago. There are alluvial fans about this same age near the mouths of numerous canyons along the Front Range. Generally, these have an abundance of larger stones, cobbles, if you will. To transport these cobbles, the floods which carried them must have been rushing torrents.

Besides the cobbles, the Rocky Flats alluvium near the Nature Center is also composed of gravel and boulders(!). The grains of gravel are generally less than an inch across and are mostly angular bits of disintegrating granite. This gravel is almost indistinguishable from the gravel on the slopes a mile further up Bear Creek, or in North Cheyenne Canyon. Its angular character suggests that it was swept directly from the mountainsides and carried to



Cobbles in Rocky Flats alluvium

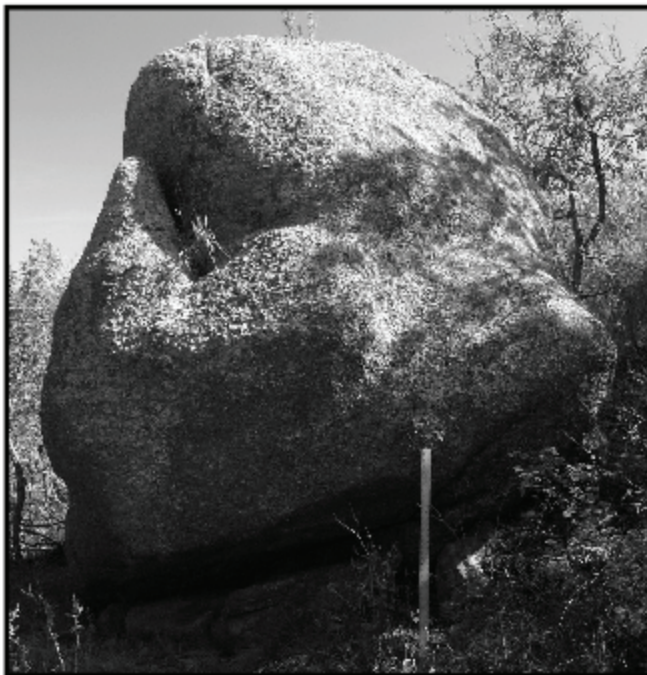
Continued on page 4

Flood continued from page 1

its present resting place. Like the gravel slopes in North Cheyenne Canyon, the gravel in the Rocky Flats alluvium here has the rather orange color of its feldspar.

In contrast to the gravel, many of the cobbles are rounded "river rocks" which probably spent a long time being tumbled in the stream bed before being carried down to the flats. They also have widely varying characters, granites of various textures, material from dikes, even a little Lyons sandstone. To see this variety of rocks, one would need to travel 4 miles or more up Bear Creek.

The boulders, from something over 2 feet across to more than 10 feet across, are much less varied than the cobbles. Like the gravel, the boulders are predominantly granite. But, unlike the gravel the granite tends to be a rather muted gray owing to the gray or cream colored feldspar. This granite is very similar to the granite of Sentinel Rock; and, like Sentinel Rock, some of it exfoliates in large flakes. The boulders are almost exclusively in the areas west and south of the Nature Center. Proceeding either east or north from the area where boulders occur, the cobbles in the gravel are progressively smaller suggesting spreading and deceleration of the flow. The eastward extent of the alluvial fan is evident from the extent of the gravel deposit on the flat above Bear Creek, east to beyond 21st Street. There is



***Granite boulder on private property
near the Bear Creek Nature Center
(Notice the size of the yardstick)***

little remaining to show the northern extent of the fan. But, the hill in Fairview Cemetery is capped with Rocky Flats alluvium.

So, what might I infer from all of this? There may have been numerous energetic floods which deposited the Rocky Flats alluvium. Likewise, numerous landslides or debris flows might well have moved boulders down into the Bear Creek drainage further upstream. But, there does not appear to be a plausible path for a landslide to have carried the boulders to their present location.

However, one massively destructive flood could have done the job. Perhaps a glacial dam broke. I can guess that such a flood scoured the river rocks from the stream bed, picked up boulders that had come down the slope from the Sentinel Rock area, and swept up gravel from the foot of various gravel slopes. Today, boulders still occasionally roll down the slope around Sentinel Rock cutting swaths through the trees. Some of them make it all the way to the creek.

Could a massive flood a million years ago



***Path of a boulder down the slope near
Sentinel Rock***

have altered our human history? Definitely. If Bear Creek flowed down 25th Street, the Westside would have been different. The Colorado Springs & Cripple Creek District Railway and the Portland Mill would not have been built where they were. The 19th century farm homesteads along the course of today's Bear Creek might have had no irrigation. So, no County Farm along Bear Creek; hence, no Bear Creek Regional Park; no Bear Creek Nature Center.