

Welcome Thousand Springs State Park Earl M. Hardy Box Canyon Unit

Hike a trail that leads to a viewing platform where you see the nation's eleventh largest spring. From the platform, look downstream where the 50-degree water cascades over a 20-foot waterfall.

Concentrate and you will detect movement in the pristine canyon and on its 200-foot walls. It is home to several species of birds and animals. Explore the canyon rim as the trail continues another mile.



For more information contact:
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Thousand Springs State Park

Units which comprise the Thousand Springs State Park

CAUTION:
You are entering snake country. There are sheer drop-offs at the canyon rim. Use extreme care with children.

Geology of Box Canyon

Megafloods carved the land.

Suppose you were standing here 45,000 years ago. You would have witnessed a *mega*flood—a catastrophic outbreak of enormous quantities of water in a short period. Megafloods occurred several times in the western United States, tens of thousands of years ago. They played a significant role in shaping the landscape about you. The discharges are thought to have resulted when rocks or glaciers that held prehistoric lakes eroded or melted, releasing the lakes' water in a sudden torrent. Here, the lake water is believed to have come from the Big Lost River, Little Wood River, or Big Wood River drainages.

How big is the spring compared to the flood?

The pools you see near the headwall of the canyon comprise the eleventh largest spring in the United States.

Comparison of Water Discharge

Today's Spring	Past Mega
2,640 gallons per second	58,124 gallons per second
Would fill a 2,220 sq. ft. house in 45 seconds	Would fill a 2,220 sq. ft. house in 2 seconds

Evidence for megafloods

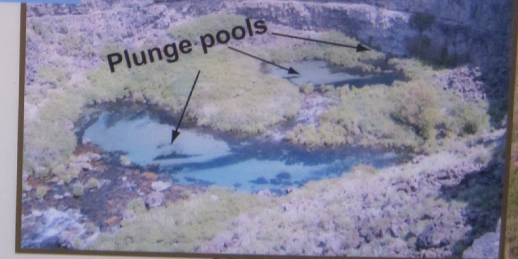
The rock beneath your feet is basalt. Basalt is hard and makes up most of the Snake River Plain. It was formed over the course of 15 million to two thousand years ago through numerous lava flows from central Idaho. As the lava cooled it often formed the characteristic columns you see making up the Box Canyon wall.



Columnar Basalt Walls of the Snake Canyon

Scoured notch

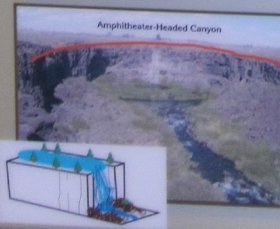
Abrasive marks on rocks along canyon rim



Plunge pools

It was long believed that Box Canyon formed as the result of seepage erosion from the canyon wall or from water surfacing in the spring. Studies revealed that similar looking canyons are built in loose, sandy deposits but not with basalt. Scientists also determined that the spring is not strong enough to have eroded such a steep 115 feet high headwall. Measurements of present day and historic water flow shows that it is not sufficient to move the canyon's boulders or transport great volumes of sediment. They also recognized "plunge pools" at the base of the headwall giving evidence of ancient waterfalls. Abrasion marks on rocks above the canyon point to large volumes of water forced over the headwall.

What do Box Canyon and Mars have in common?



Scientists wanting to understand the geology of Mars looked for comparable features on earth. Box Canyon exhibits similar structural patterns with many Martian canyons. Idaho's Box Canyon is an "amphitheater-headed" canyon, because its valley abruptly stops at its headwall. Amphitheater-headed canyons are found on Mars. Similar canyons on Mars may have an analogous violent history. The formation of Box Canyon has given scientists evidence of how torrential floods sculpted the surface of Mars. Geologic change is considered to be slow. But the truth is that some processes like ancient catastrophic floods are capable of creating whole landscapes in a geological instant, whether on earth or on Mars.

