A Buried Forest!

The amphitheater walkway at North Falls is in relatively soft sandstone and mudstone, sediments that were deposited by a stream in between the basalt flows. A forest was able to grow on this sediment and was, in turn, buried by the next lava flow. In the North Falls amphitheater you are walking in the root zone of this ancient forest. If you look up at the ceiling you may notice round holes with blackened material inside them (a flashlight helps). That blackened material is the charred remains of the trees buried by that lava flow. This charred wood now forms a weak form of petrified wood that may rarely be found in the park. You may look for this petrified wood, but remember the park has a strict no collecting policy regarding all of our rocks. We want to make sure our rocks are there to share with future visitors as well!

A buried tree in the ceiling of the North Falls Amphitheater

Good Building Stone

The Civilian Conservation Corps preferred to use local rock in the construction of many of their buildings, including those at Silver Falls. The sandstone from Episode 1 was quarried to build the Stone Shelter in the South Falls day use area. Most of the rest of the structures in the park were built using the black basalt from Episode 2. Its durability makes it good for forming waterfall cliffs and for making buildings that can stand up to the Oregon rains.

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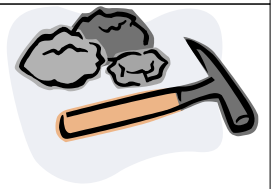
Brochure made by Grant D. Smith - 9/2007

Geology of Silver Falls State Park

A History of Ocean Beaches, Lava Floods, Buried Forests, and Volcanic Ash Falls

A Brief Geological History



Situated at the western fringe of the Cascade Foothills, Silver Falls State Park offers a glimpse into the geology of this heavily vegetated area. Exposed rock in waterfalls and creek banks reveals three major episodes of Oregon's geologic history: **Episode 1**) Sandy Beaches, **Episode 2**) Massive volcanic lava floods, and **Episode 3**) Cascade-style volcanic ash deposits. Stream erosion along Silver Creek has slowly chewed its way upstream, creating the waterfalls and exposing rocks from these three different periods.

Episode 1: A Sandy Beach!

Below the rest of the rock in the park is sandstone from when the Silver Falls area was part of the Oregon coast. This rock only outcrops along Silver Creek in the very northwest portion of the park, an area that can not currently be accessed by trails. This sandstone was, however, quarried by the Civilian Conservation Corps to build the Stone Shelter in the South Falls day use area. Feel free to visit the Stone Shelter and look at all of the seashells exposed in this rock!

Episode 2: Basalt Lava Floods

The black rock forming the cliffs at the waterfalls includes the Wanapum and Grande Ronde Basalts, part of a series of massive lava eruptions that are collectively known as the Columbia River Flood Basalts. During the period from

16.5 to 15.3 million years ago, the ancestral Cascade mountains had very few eruptions. Instead the volcanic activity happened further east in Washington and Oregon, resulting in extremely thick basalt lava flows, the same kind of rock that forms at Hawaiian volcanoes today! Some of these lava flows followed the ancestral Columbia River Valley into the Silver Falls area. At least 8 separate flows are exposed at Silver Falls.

Episode 3: Volcanic Ashfall

Capping the basalt are deposits of volcanic ash similar to what we see in a Mt. St. Helens eruption today. The rock formed from this ash is called Volcanic

Tuff and tends to be easily eroded. The hills in the eastern portion of the park are made of this tuff. It was deposited sometime between 15.3 and 7.5 Million years ago.

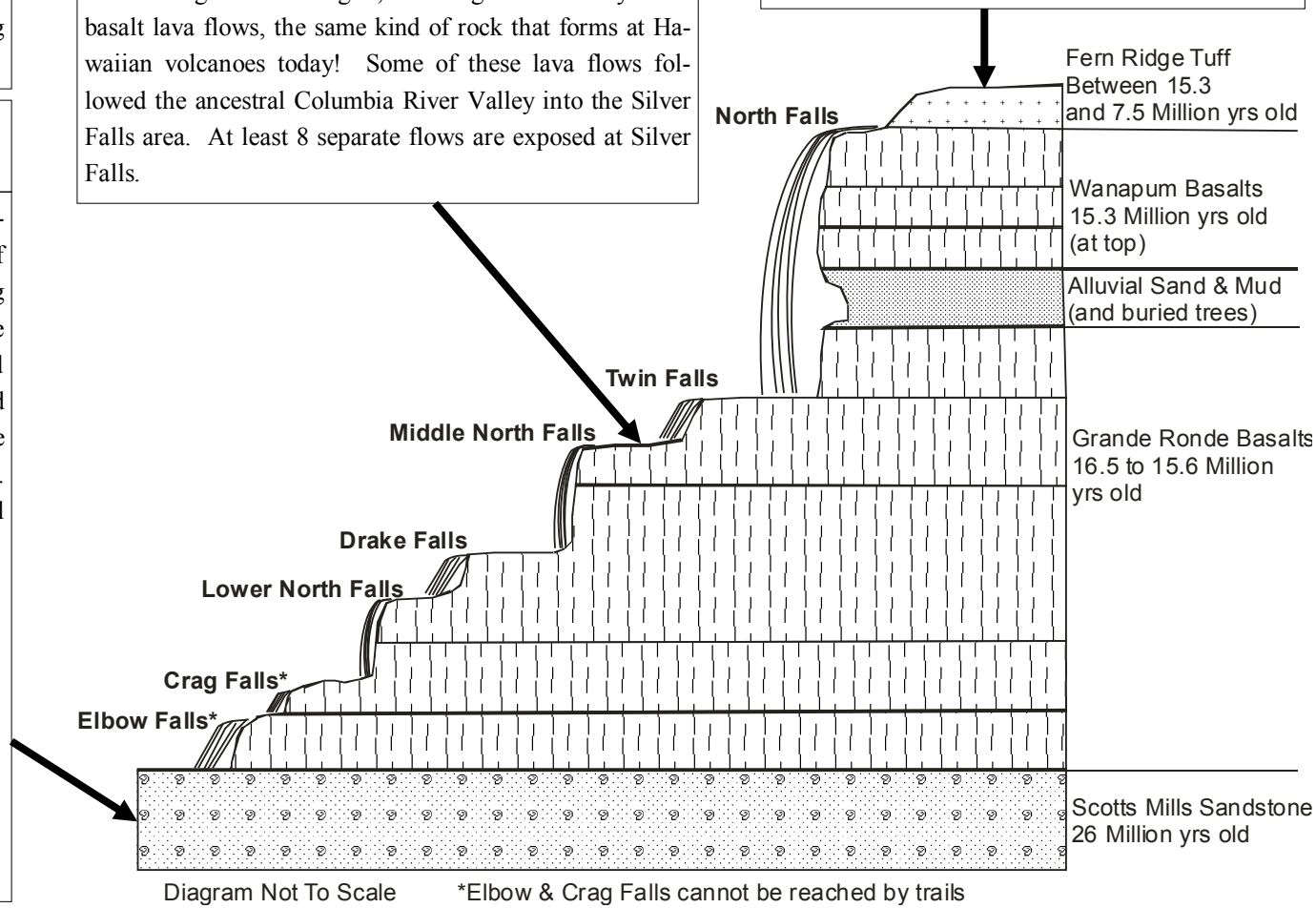


Diagram Not To Scale *Elbow & Crag Falls cannot be reached by trails