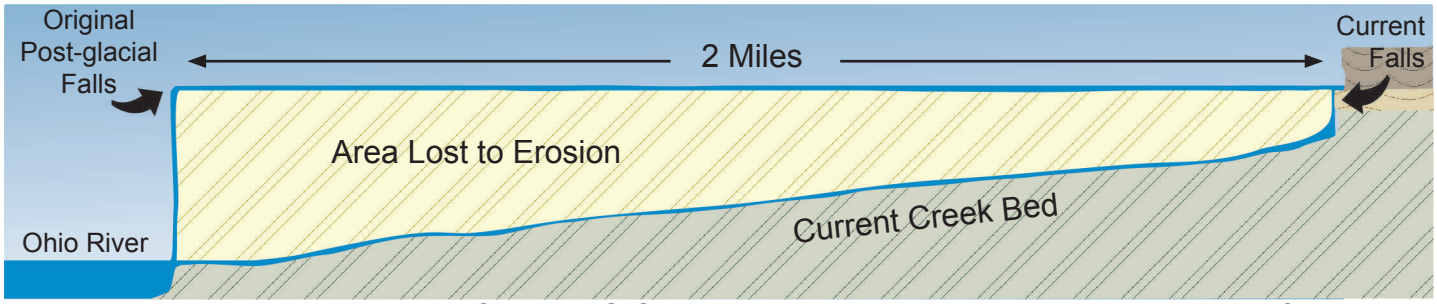
Clifty Falls: Rocks and Water

The falls continue to move upstream, further from their Ohio River origin.

Waterfalls occur when a hard rock layer rests on a softer rock layer. The softer, lower layer erodes more quickly, creating an overhang from the harder layer. Eventually, the unsupported overhang collapses and the waterfall recedes upstream. The process repeats itself.

Early in the Ice Age the young Ohio River eroded its path 500 feet down into the solid shale and limestone bedrock. Clifty Creek, a small stream, poured over the new Ohio River bluffs and fell to the Ohio River, hundreds of feet below. Clifty Falls was born.



In its estimated one million year life span, Clifty Falls has eroded over two miles upstream from the Ohio River. The fall's erosion continues today, receding one foot every fifty years.

What the Rocks Reveal

As Big Clifty Falls cut through the rock, layers of stone were revealed, telling a story about what the park looked like a million years ago. All rock formations at Clifty Falls formed when seas spread over the land. We know this from the types of rocks and their fossils.

Deeper seas carrying clay and limy mud formed this limy shale. The rock layer is soft and erodes easily.

Ripple marks formed from waves and flowing water show that this rock layer formed when seas were very shallow. This hard layer forms the lip of the falls, and so erodes more slowly than the Dillsboro layer below it.

Sea currents spread mud across the ocean floor. The mud was compressed to form shale. Between shale layers are limestone layers that formed when no mud was present and the ocean floor was rich with animal life. Fossils are most common in this layer.

Because of its unique geologic nature, the upper gorge and falls of Clifty Creek have been dedicated as a State Nature Preserve.