

Turning off Niagara Falls could yield insight on how waterfalls carve canyons, expert says

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The American Falls. Credit: U.S. Geological Survey/photo by Alex Demas

It's not every day that you get to turn off a major waterfall.

But if New York State carries through with plans to temporarily shut down part of Niagara Falls for the purpose of replacing bridges, it could create a rare opportunity for geologists to study how [waterfalls](#) erode the land beneath them, says Marcus Bursik, chair of geology in the University at Buffalo College of Arts and Sciences.

Niagara Falls is actually a collection of three waterfalls, and two could

go dry under current proposals: the American Falls and the smaller Bridal Veil Falls.

"You could make a very detailed map of what the topography of the rock face looks like beneath the [falls](#) using drones equipped with laser-mapping technology," Bursik says. "You could then compare it to what the rock face looked like in 1969, the last time this part of the falls was dry."

A study of this kind could help scientists better understand the mechanisms by which Niagara Falls and other waterfalls carve away the land beneath them, causing the waterfalls to recede.

This erosive process has caused Niagara Falls to retreat about 7 miles since its formation some 12,000 years ago, moving from the Niagara Escarpment at Lewiston, New York to the falls' current location, Bursik says.

The opportunity to map the rock face beneath a powerful waterfall is rare: The American and Bridal Veil Falls last went dry in 1969, when engineers diverted water from them to study erosion. At that time, Bursik says, sections of the rock beneath the falls were bolted to slow further deterioration. Turning off the falls again would enable scientists to assess how those reinforcements held up.

Still, that doesn't mean Bursik is advocating for a shut down.

He has studied the falls as well as the plume of mist that rises from Niagara Falls' famous Horseshoe Falls, and he has great appreciation for the falls as a natural wonder.

So despite the tantalizing research possibilities, he is not keen on the idea of switching the falls on and off at will.

"It's supposed to be the wonder of the world," Bursik says. "It seems strange to me to shut it off, to treat it like a spigot that they can just turn on or off. But if their intention is to do that, there are definitely studies that we could do."

Provided by University at Buffalo

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