



SPECIAL REPORT: The Impact of Hurricane Helene on Lake Glenville

Between the August 2024 and December 2024 samplings of water quality for Lake Glenville, Western North Carolina was heavily impacted by Hurricane Helene. Here is a brief discussion of some of the impacts.

Heavy Rainfall and Flooding: Hurricane Helene brought significant rainfall to the Western North Carolina, causing widespread flooding and damage. The excessive rain led to concerns about the structural integrity of dams in the area. Thorpe Dam, like others in the region, experienced increased water levels due to the heavy rainfall, however, there have been no reports of significant damage to the dam. Similarly, Lake Glenville saw a surge in water levels due to the heavy rainfall.

An eyewitness posted the following description of those rising waters on the Friends of Lake Glenville Facebook page:

“Between 10 pm on Thursday 9/26 and 6 am Friday 9/27, the lake rose an astonishing 7 feet and continued to rise another 3 feet throughout the day on Friday. The water turned the color of the muddy Mississippi and took about 5 days for somewhat normal clarity to return.”

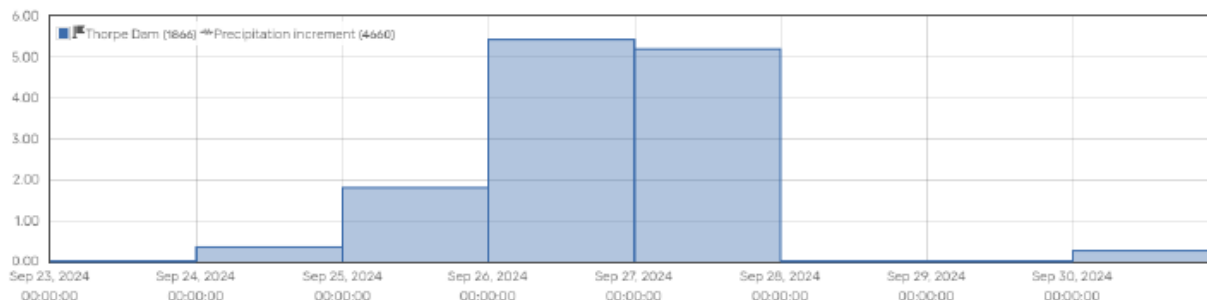
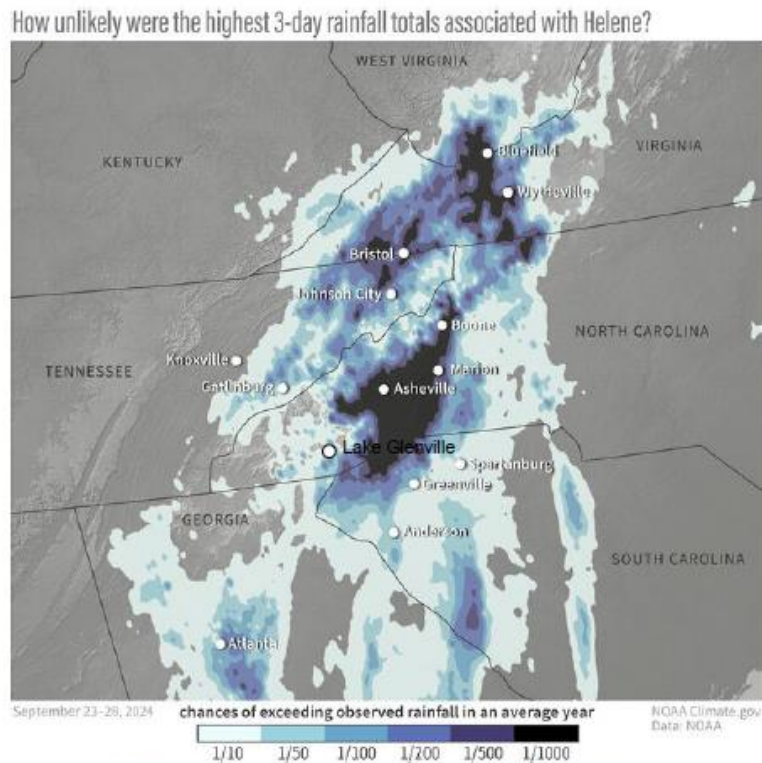


Figure 2. Precipitation for the week of Hurricane Helene.

Despite the enormous amount of rain and increased discharge, Lake Glenville was spared the heaviest amounts and impacts from the event. Below is a map of the rainfall amounts from Hurricane Helene in terms of statistical probability for exceedance.



Between September 23 and 28, the highest 3-day rainfall totals across the higher elevations of the southern Appalachian Mountains were so extreme that the statistical chances of them being exceeded in any given year were 1 in 1,000 (black areas). Statistically, this is the same as saying that averaged over long periods of time, a 3-day rainfall event so extreme would only occur on average (not literally!) once every 1,000 years. NOAA Climate.gov graphic, adapted from original by NOAA's [National Weather Service](#).

Conclusion: Overall, the quality of the water in the tributaries to Lake Glenville seems to have returned to the baseline, pre-storm conditions and is best described as high-quality waters. There is a lot of large woody debris that accumulated within the channels during the storm, but it's important to remember that woody debris is a normal, natural component of streams in our area, and is in fact, important to their health.