

Southeastern heat carried on for several days before shifting westward. For

Eventually, extreme heat returned across the southern Plains, with Wichita Falls, Texas, and Lawton,

With a ridge of high pressure dominating the central and southern Plains in early July, heavy showers were mostly

JULY HIGHLIGHT

Flash Flood Sweeps Away a Virginia Community

by Jeffrey Halverson

Nestled in the bucolic mountains of southwest Virginia, in the heart of coal country, lies Buchanan County. In the vicinity of Whitewood, a tragic and highly localized flash flood unfolded overnight on Tuesday, July 12 into the morning of the 13th. In Pilgrim's Knob, Virginia, located 80 miles west of Blacksburg, a rain gauge tipped 4.6 inches of rain falling mostly between 8 and 10 pm. In adjoining Tazewell County, another rain gauge measured nearly 5.5 inches in just a few hours prior to midnight, with three of those inches falling in an hour.

Lightning strike data, shared by Chris Vagasky of Vaisala, Inc. on Twitter,

revealed a swath of exceptionally dense lightning coverage cutting through central Buchanan County—accruing more than 70% of the county's annual average lightning in just a few hours.

The first figure illustrates the accumulated rainfall from the NWS radar network. The eye immediately goes to the tiny blue smudge, hyperlocalized over east-central Buchanan County, where rain totals exceeded 5–6 inches. An enormous volume of rainwater was delivered into the narrow, twisting stream gorges in the county in a very brief window of time. This completely overwhelmed natural drainage. It not only submerged low-lying spots, but also swept away homes and structures from

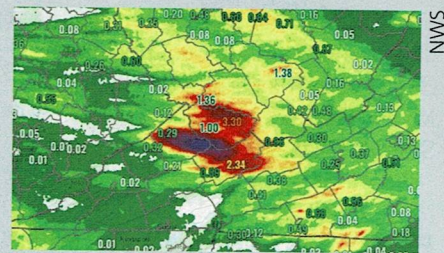


Figure 1. Rain accumulation map showing flash flooding in Buchanan County, Virginia, on July 12–13.

foundations, vehicles, and unleashed mudflows. Mercifully, there were no reported fatalities. The disaster was truly a conspiracy of meteorology and geography.

The meteorological setup, shown in the second figure, illustrates a frontal