With flash flood events on the rise, weary Appalachians in Eastern Kentucky are still recovering from one flood after another

Flash flood events are increasing. One Appalachian community is struggling to recover from two major floods over three years

Torn in two: What the struggles of one Appalachian community signal about the future of flash flood risk

By Nidhi Sharma

Record-breaking flash flooding inundated Hazard, K.Y. in February, devastating homes and infrastructure in the small Appalachian town. The North Fork Kentucky River, which runs alongside Hazard's Main Street, crested at over 30 feet and swamped the small downtown area, destroying several local businesses.

February's disaster was the second major flash flood event to hit Hazard in three years. Many residents in Hazard are still reeling from catastrophic flooding in July 2022, ~~which was driven by five days of record-breaking July rain that overflowed creeks and rivers across Kentucky~~.

Holly-Ann Eastmon, who was in Hazard at the time, received a flash flood warning when floodwaters from the nearby Troublesome Creek surrounded her double-wide trailer. High waters ripped the neighbor's house from its foundations, ramming the structure into Eastmon's home and tearing it in two. Eastmon was swept away by debris-filled water and clung onto a tree for almost 12 hours before search and rescue helicopters found her.

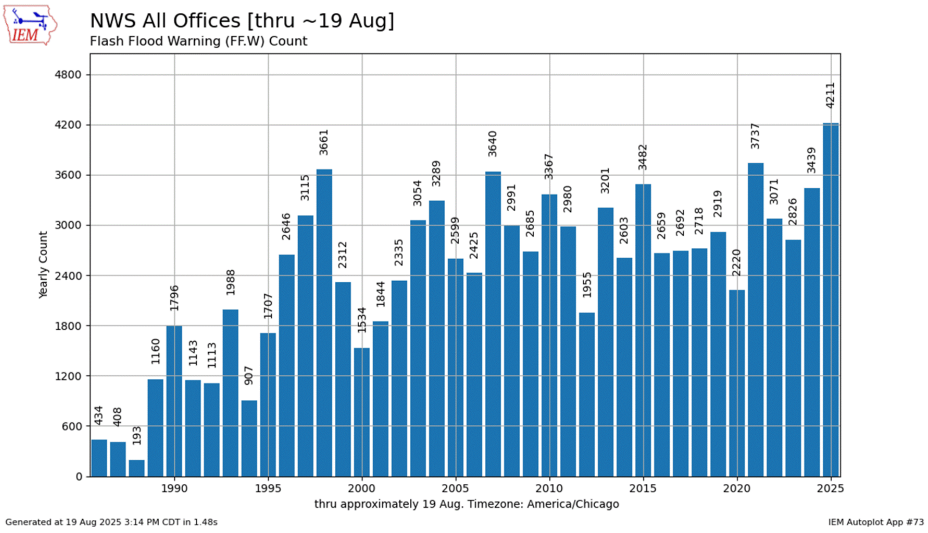
These days, Eastmon leaves town when the forecast calls for more than two inches of rain.

"We pack up our stuff, put it in a U-Haul and we go to a hotel until we can go home," Eastmon said. "I couldn't even tell you how many times it's happened since 2022. It's just the fear we have."

The recurring flooding in Hazard highlights the growing human and financial toll of flash floods, which experts say are becoming more common, unpredictable and extreme as the planet warms. Eastmon and the rest of her community are still facing a long road to recovery, complicated by mounting rebuilding costs and limited job opportunities.

This summer, flash flooding, which occurs during sudden, extreme rainfall over short periods of time, has swamped U.S. communities stretching from Kerr County, TX to Petersburg, VA and devastated populations in Beijing and the mountainous regions of India and Pakistan.

As of mid-August, the National Weather Service has issued over 4,000 flash flood warnings, breaking records dating back to 1986, according to data from Iowa State University. Kentucky has already issued over 200 flash flood warnings – in 2024, that number was 76 for the whole year.




Shel Winkley, a meteorologist with the research group Climate Central, says that human-caused climate change, which makes the atmosphere both hotter and wetter, is contributing majorly to extreme flooding and flash flood events. Every degree Celsius that Earth's atmospheric temperature rises allows the atmosphere to hold about 7% more water vapor.

"A warmer atmosphere is a greedier one — it holds onto more moisture, so when it lets go, the rain falls harder and faster," Winkley said. "This is why we're seeing more flash flood warnings and record-breaking rainfall this summer. Climate change is turning natural summer storms into something unnatural."

Eastern Kentucky is historically prone to flooding. As wet air rises against the Appalachian mountains, it naturally releases moisture into the valleys below. But when extreme rainfall encounters the mountainous topography, water is rapidly channeled into low-lying areas and can overflow the region's many creeks and streams. One study found that during the 2022 floods, a disproportionate number of deaths occurred along or near areas of Troublesome Creek, a fork of the 168-mile long North Fork Kentucky River that has been disrupted by historic mountaintop coal mining.

For many Hazard residents, life has totally changed with more frequent flooding. Like many towns in Appalachia, the community was once a hub for coal production, but economic prospects have declined sharply over the last few decades, straining many long-time residents who are grappling with the economic downturn and flood damages at the same time.

Eastmon, who has lived in Hazard since 2007, says the floods have left her with severe trauma.

“I don't care whether you hung from a tree or you just saw somebody in the water,” Eastmon said. “You were affected whether you saw it or whether you lived it. Everybody here was affected by it in one way or another.”

Local volunteer firefighter Ronnie Dillion helped rescue Eastmon’s husband, Craig, from floodwaters near Troublesome Creek in 2022. His family has lived in the Hazard area for generations, but Dillion is making plans to leave town in pursuit of work in London, a bigger city about 60 miles west of Hazard. The latest floods were the breaking point for many residents struggling to stay afloat, Dillion said.

The floodwaters caused unlivable damage to Dillion’s home, caving in parts of the ceiling. And rebuilding is difficult with few paying jobs available locally, he says.

“It’s home to me, but there’s not a lot for young folks to do here,” Dillion said. “There’s not a lot of opportunity here. You can’t chase your dreams and guarantee that you get a job doing what you love here.”

As of the latest U.S. census survey, over 25% of Perry County residents, where Hazard is located, are living under the federal poverty line. The coal industry provided more than 29,000 jobs at its height in 1990 — since then, roughly 85% of coal jobs in Kentucky have been lost, according to the Kentucky Center for Statistics. In Perry County alone, mining employment dropped by 23% in 2023.

Jason Naylor, a researcher at the University of Louisville, is studying climate change in Kentucky. He says that Eastern Kentucky is uniquely vulnerable to climate impacts and increased flooding.

“There’s a lot of social vulnerability,” Naylor said. “And potentially more distrust for weather forecasts and any type of public officials.”

Eastmon says some of her neighbors believe the government played a role in causing the 2022 floods and that the community has largely lost faith in their public officials in the aftermath of the recurring floods. Eastmon herself has applied for a home buyout program with Perry County, and hopes to move closer to her children.

“I’ve told the story over and over and over in hopes that maybe somebody, somewhere will hear the story and come to our rescue, and get us off my piece of property,” she said.

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