An unusual set of weather conditions flooded the Illinois River basin Sunday and Monday, but records show â€œunusualâ€• isnâ€™t quite so rare as it used to be. A storm that developed over western Osage County built up and dropped nearly 8 inches of rain on Jay in a 12-hour period. To the east in Arkansas, extreme amounts of rainfall fell in the Upper Illinois River basin, with nearly 12 inches in areas south of Bentonville. â€œIf you look at the 12-hour period from 2:20 a.m. to 2:20 p.m. (Sunday) the Mesonet site at Jay had 7.49 inches,â€• said state climatologist Gary McManus. â€œThatâ€™s right at a 500-year rainfall event, so itâ€™s quite a bit of rain.â€• Resulting floods closed highways near Jay, Hulbert, near Spavinaw State Park and spots on Oklahoma 10 along the Illinois River near Hanging Rock. It also caught some people by surprise. â€œWe did our best to get the word out, texting and emailing everybody,â€• said Ed Fite, vice president of water quality for the Grand River Dam Authority. No injuries were reported, but a float vendor did lose some boats; some livestock were briefly stranded; and at least one motorist drove into floodwaters on Oklahoma 10 and required help, he said. River gauges showed the intensity of the rain upstream, with the farthest gauge in the drainage at Savoy Creek in Arkansas and the gauge at the Arkansas 16 bridge showing crests at nearly the same level and staying that way for nearly three hours early Sunday, Fite said. â€œIt was pretty well a flat river right up there,â€• he said.

The concern in Oklahoma was spreading the word that water was coming, he said. â€œIt was a perfect storm in that it occurred upstream out of the Tahlequah area, so most of the people here that got a quarter- to a half-inch of rain didnâ€™t realize how much fell on the landscape up in Arkansas,â€• Fite said. While the rainfall set a 500-year event mark in the books, McManus qualified that by saying â€œthe official bookâ€• is about 20 years old. â€œWeâ€™ve had a lot of heavy rainfall events that have occurred more and more since then, but

thatâ€™s the best we have right now,â€• he said. â€œAnecdotally, weâ€™ve had a lot of heavy rains in a shorter period of time the last decade or so.â€•

An already soaked landscape exacerbated the flooding because most all of the rain ran off the landscape instead of soaking in. â€œEver since May thatâ€™s about all theyâ€™ve done, is get rain,â€• he said. Fite said the Illinois faces challenges because of a growing population and infrastructure at its headwaters. â€œItâ€™s an inverse river, if you think about it,â€• he said. â€œMost rivers, the cities are at the confluence. Communities became cities because they used the ports ... In this case all the growth is at the headwaters.â€• Since the mid-1980s, the population of the Illinois basin has grown from just under 200,000 residents to well over 600,000, and projections look toward 1.2 to 1.4 million by 2050, Fite said. â€œWhen you get this much precipitation and you add to it all the impervious surfaces and land use in rural areas, we naturally get these floods,â€• he said. Late Monday the river crest at Tahlequah was creeping up over 20 feet to a mark that would likely put it among the 20 highest floods in the area dating back to 1916, Fite said. Of those top 20, eight have occurred during Fiteâ€™s tenure working along the river since 1983. Five of those happened in the last eight years. Two of those floods came a month apart in April and May of 2011. The others came in December 2015 and April 2017, and it appears the fifth will be October 2019. Fite said new developments in Arkansas are using low impact building practices to slow the release of runoff, but the builders face the challenges of doing so when older neighborhoods have not. â€œItâ€™s complicated,â€• he said. Along the river the GRDA is about to announce another set of contracts with landowners for preserving riparian areas that help reduce erosion and contamination from livestock operations. â€œWe have expended the money to obtain over 1,000 acres of riparian acres adjacent to the Illinois River and Barren Fork (Creek),â€• Fite said. â€œIf you back the cattle away and allow

the riparian area to reestablish, the grass is resilient, and it will slow the

floodwaters down and abate some of the erosion that has been occurring by dissipating

that energy. â€¦ Itâ€™s also like a giant sponge to hold that water and

slowly release it back into the environment.â€• Kelly Bostian 918-581-8357 kelly.bostian @tulsaworld.com Twitter: @