

Comments and Questions About the Texas Floods - Updated 2:45pm Friday

By [Mike Smith](#) - [July 08, 2025](#)

As of Friday, 2:40pm, the number of confirmed dead is 121 with 170 missing. A horrible tragedy.

--- original text, 8:45pm Tuesday ---

Texas Gov. Greg Abbott, in the past half-hour, has released the actual number of missing: "At least 160!" Terrifying.

[original text below]

I've received a deluge of comments from multiple sources, so I wish to answer those comments here. My report on the meteorology behind the flood is [here](#).

National Disaster Review Board

You will find more information about the proposed National Disaster Review Board (NDRB) and how it will function [here](#) and [here](#).

The State of Texas has suffered nearly 1,200 flood deaths – most in the Hill Country – during the past 55 years. That number is staggering. This past autumn, we lost 249 souls because of Hurricane Helene. In 2011, 161 were killed because of a single tornado in Joplin, MO. National Weather Service tornado warnings are much *less* accurate than 15 years ago. These, and much more, need understanding of the issues and then repair of the same as mega-disasters may be increasing.

With regard to the Texas floods and riverside camps, here is a partial list of questions that need to be answered:

- What procedures did the camps have in place for floods (and, while we are at it, tornadoes)?
- Were those procedures practiced? By whom: staff, staff and campers?
- How were weather warnings received?
- Did the staff understand the types of warnings (flood, flash flood, flash flood emergency)?
- Was a dam in the area that made the flood worse?
- Did the WEA smartphone warnings trigger on a immediately or was there a lag?

- Is it possible to satellite-to-smartphone communications to send out weather warnings in the way they are sent using the cell network now?

Again, these are just examples of the questions that require answers. Once the NDRB investigators have done their work, a preliminary report will be drafted. Then, a public hearing will be held so that the parties (victims, first responders, camp owners, National Weather Service, etc.) will have input. Then, the final report **along with recommendations for fixing the issues** will be published. This is very similar to the method used by the highly successful National Transportation Safety Board.

The Unsung Heroes

Can you imagine slogging through this mess?
Photo: Austin American-Statesman

Not nearly enough attention is being paid to the first responders who are wading through fetid water, mud, and muck in the heat and humidity in the desperate hope of finding survivors and in the process finding bodies instead. *These brave peoples' lives will never be the same after participating in this horror.* They need our thanks, remuneration, and prayers.

Warning Systems (satellite phones, satellite cell)

I've never been a fan of the FCC/NWS's Wireless Emergency Alerts (WEA). They are often delayed many minutes and the promised geographic specificity has not materialized in most areas. I'm told this is a issue with cell tower spacing.

The NWS couldn't leave well enough alone and added hail – which is not life-threatening – to the types of warnings that awaken you in the middle of the night. Plus, there are areas with no smartphone reception.

Emerging technology that allows the delivery of warnings to smartphones via satellite can change this. Satellites have 100% coverage so remote areas will receive warnings. With the right technology, the desired geographic specificity can be received. This needs to be urgently investigated.

In the meantime, sirens instantly sound when a warning is issued and there are models of sirens that "speak" the type of warning (tornado or flash flood, for example). There is a news story which indicates the State of Texas is going to pay for sirens in the area.

Unfair Criticism of the National Weather Service?

Many in the meteorological community are upset over what they believe is unfair criticism of the National Weather Service. My response is that I wrote a [book](#) so full of praise for the NWS the senior management and the NWS employees' union had a reception for me at their headquarters in Washington. My blog to this day often cites examples of outstanding work. But, when the poorly warned Joplin Tornado occurred, I wrote a [second book](#) detailing what went wrong and how it should be fixed. Some of the same people were furious.

Within the weather science profession there is a general feeling the NWS should be immune from criticism. As a commenter to my piece about the tragic Kerr County flood wrote,

Maybe some grace and understanding is owed to the 5 people at the WFO who were doing their best to serve the mission with the information that they had.

I find the use of the word, “owed” to be interesting. Having made less-than-optimal storm warnings that had negative consequences during my career (and the many sleepless night that followed), I completely get where the commenter is coming from. But, the NWS -- a taxpayer supported agency -- institutionally has a long history of sweeping problems under the rug. In the case of Joplin, the NWS gave itself an award for its poor performance in what appeared to be an effort to stave off criticism. Its post-storm report was nothing but a coverup.

A healthy, mature science should be able to do candid post-storm evaluations. Instead, meteorology usually circles the wagons and gets defensive.

So, I take the position of the taxpayers and others who are in the path of the storm and ask whether they were served well given the state-of-the-art and given the NWS's procedures and regulations. If anyone is "owed," it is the victims and loved ones of this horrific tragedy.

In the case of the Kerr County flash flood, there was a timely and accurate flash flood warning issued nearly three hours in advance. Had the NWS management left things alone, that would have sufficed. But they made a fateful change in 2003. Below are *their* words describing warnings of flash floods after introducing the “flash flood emergency warning.”

In other words, they defined *down* the original “flash flood warnings.” If it is “life-threatening,” a flash flood *emergency* warning (FFE) is supposed to be issued. The FFE was issued Friday morning and it appeared to be helpful helpful downstream of

Hunt (Ingram, Kerrville, etc.). But by 4:03am, when the FFE was issued, Mystic and other camps were flooded or experiencing rapidly rising water. Whether this mattered, is unknown and is a question for a post-storm investigation. But it may be behind the several statements from officials, “we didn’t know a flood this bad was coming.”

The senior management of the NWS (to whom most of my criticism is directed) keeps adding flavors of warnings (i.e., “tornado emergency warnings”) for which our science does not have the *consistent* skill to achieve (the tornado emergency warnings are correct a miserable 17% of the time). *It is management to which most of my criticism is directed, not so much the staff of the San Antonio Forecast Office which was given a needlessly difficult staff.*

The NWS does not readily share its accuracy figures for flash flood and flash flood emergency warnings. If I can find them, I will share them in a separate blog post.

Addition (12:45p Tuesday): The hydrograph.

There is a (vocal) commenter (offline) who says the NWS "couldn't possibly have known" about the flood prior to 4am. Below is the real-time hydrograph to which the NWS had access that morning.

The river gauge is east (downstream) of Hunt, TX. Camp Mystic and others are located *upstream* -- meaning the flood wave would have reached the camps before the gauge. By 2am the river was rising at the Hunt gauge. By 3 - 3:15, the river was rising rapidly with the implication conditions would have been worse at the camps' location because they were in the area of heaviest rain. Given 10+" of rain measured by radar, recent wet conditions (meaning fast runoff of the rain) and the rising river, a flash flood emergency was called for via my analysis and experience.

Additional information, 2:45pm Friday. The San Antonio Express News reports the following:

If, at 3:06am, the NWS is reporting "a very dangerous flash flood event is occurring..." then there is no reason for failing to issue a "flash flood emergency warning" around 3am.

This interview demonstrates the river at a camp near to Camp Mystic was dangerously rising by 3am:

By around 3 a.m., her husband noticed the river had begun to creep beyond its banks. “Every time he came back in, I’d be half asleep waiting for him to say, ‘Let’s go,’” she recalled. When that moment finally came, the family sprang into action, waking the kids, gathering gear, and preparing to evacuate.

It confirms what is on the hydrograph and that an "emergency" should have been issued around this time.

Inaccurate Media Comments and Criticisms

To my knowledge, the **cloud seeding** operations were not active on July 3 or 4. They, for safety reasons, never operate in the middle of the night. So, weather modification is not an issue. Yes, there is a report there were seeding operations on the 2nd but the silver iodide crystals (the chemical used) would have washed out of the atmosphere well before the pre-dawn of the 4th.

“**Contrails.**” Oy! The topic that will not go away. They are never an issue.

Activist and meteorologist John Morales on
CNN blaming global warming for the Texas flood

Climate change. If climate change affects floods in the Hill County, it is to make them *less* frequent as even the U.S. Environmental Protection Agency has found. Below is a graph from Dr. Roger Pielke, Jr. using a different dataset that gives us the same result.

DOGE. I have criticized DOGE’s approach to the NWS several times on this blog. But it played no effect on the Camp Mystic/Kerr County flood. The San Antonio office had 5 on duty rather than the normal two.

Addition: 8:45pm Tuesday. You are "loser" if you want to know what went wrong.