

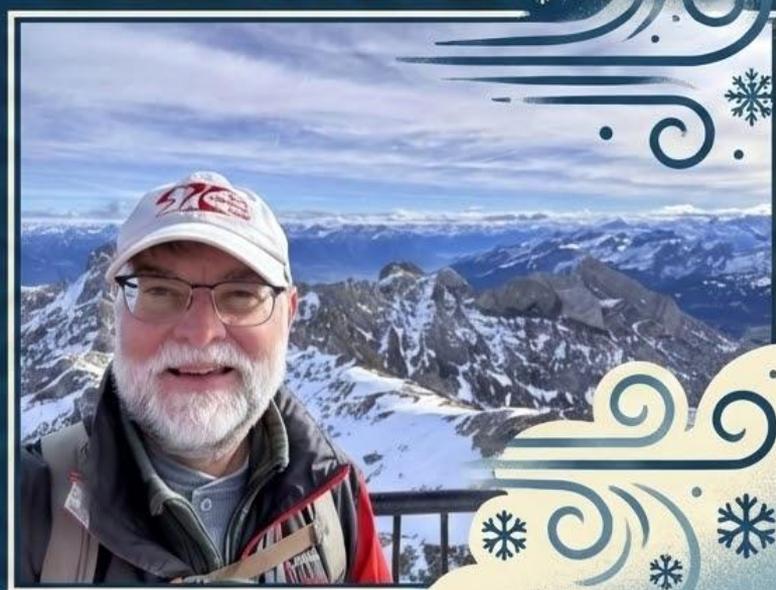
2025

Meteorological Memories

Greg Carbin

CoCoRaHS *WxTalk* Webinar Series

February 12, 2026

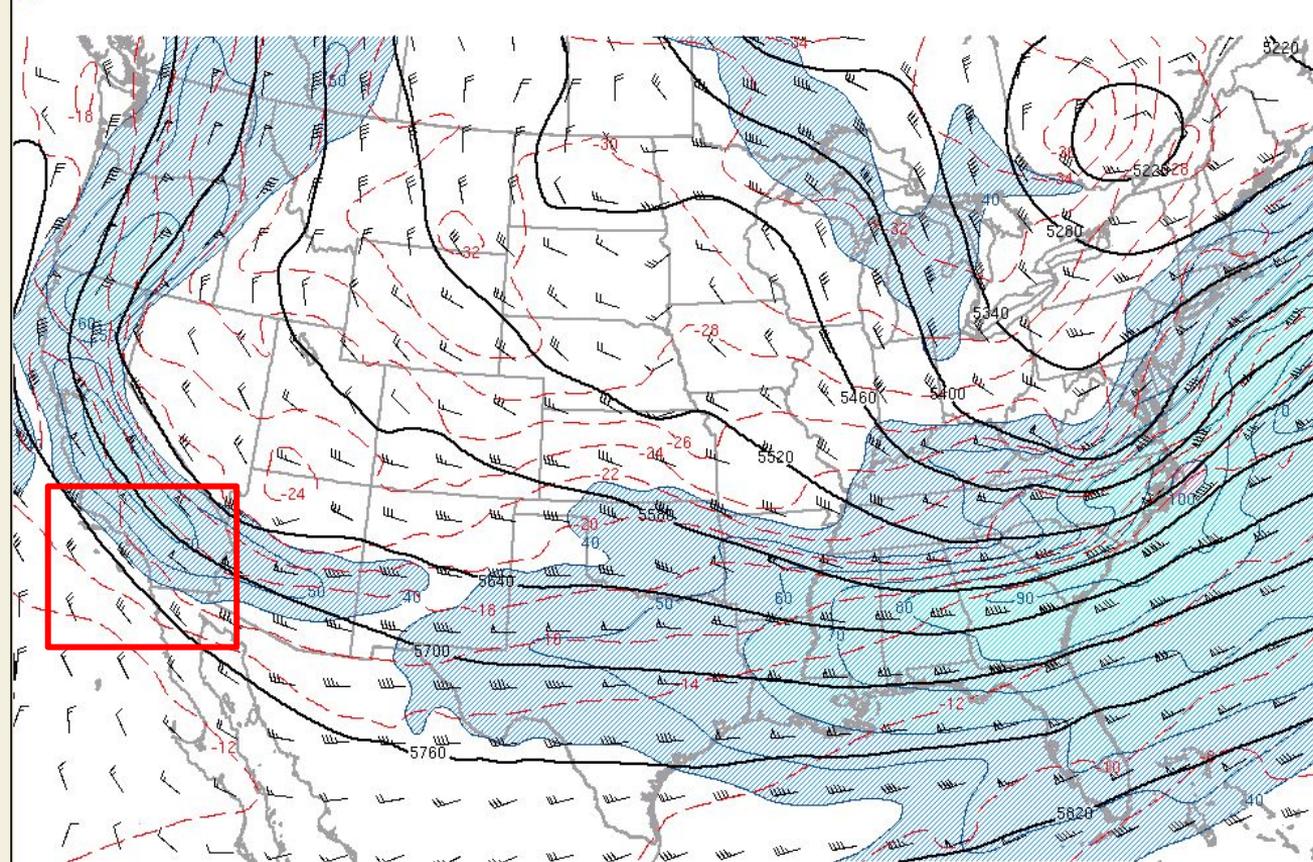


2025 Memory #1... Early January California Conflagration!



2025 Memory #1... Early January California Conflagration!

NOAA/NWS/Storm Prediction Center Mesoscale Analysis Data



250107/0000V001 500mb height (m MSL, black), temp (C, red), and wind (kt, hatched >= 40 kt)

40 60 80 100 120 140

The upper air pattern evolution featured a progressive and anomalously deep trough forming across southern California.

This process contributes to high lower level air pressure across the Great Basin and areas east of the higher terrain of Southern California.

Intense downslope gap winds are hot and dry and fan the flames of any fires that start.

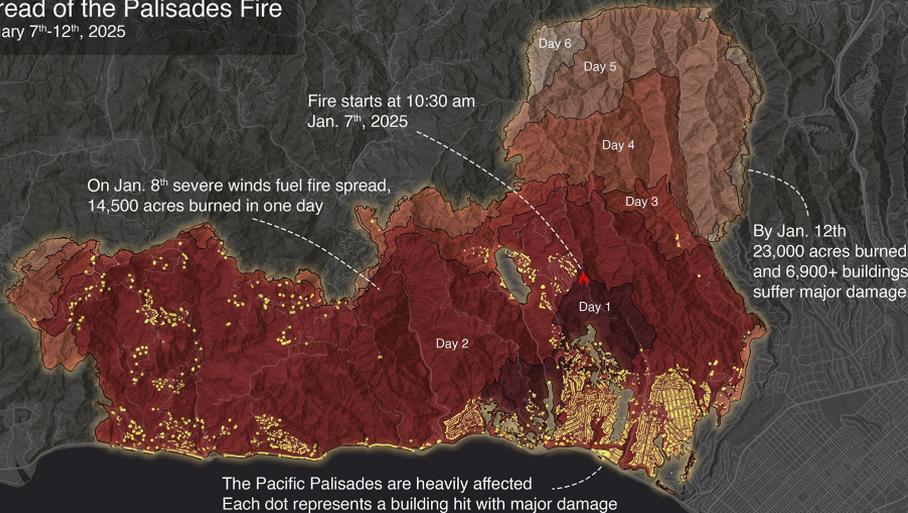
2025 Memory #1... Early January California Conflagration!



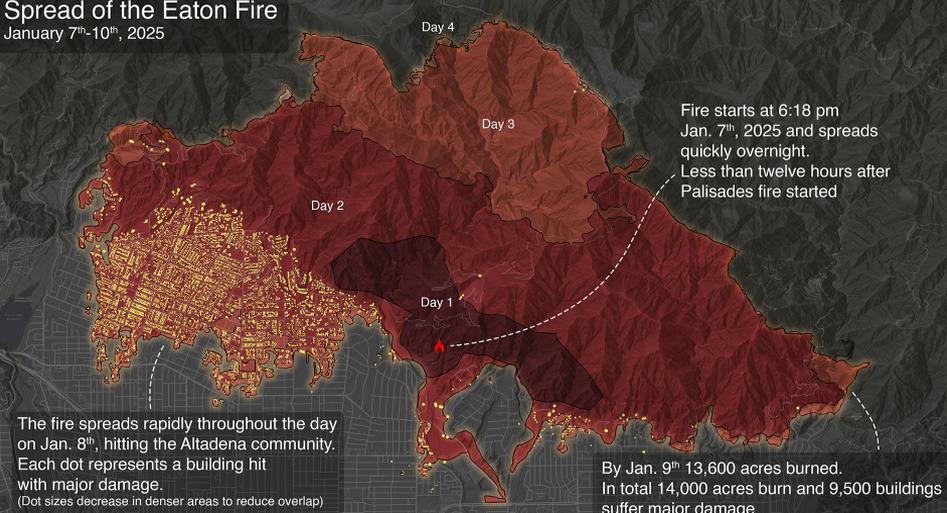
EARTH FROM ORBIT
NOAA SATELLITES TRACK RAGING
WILDFIRES IN CALIFORNIA

2025 Memory #1... Early January California Conflagration!

Spread of the Palisades Fire
January 7th-12th, 2025



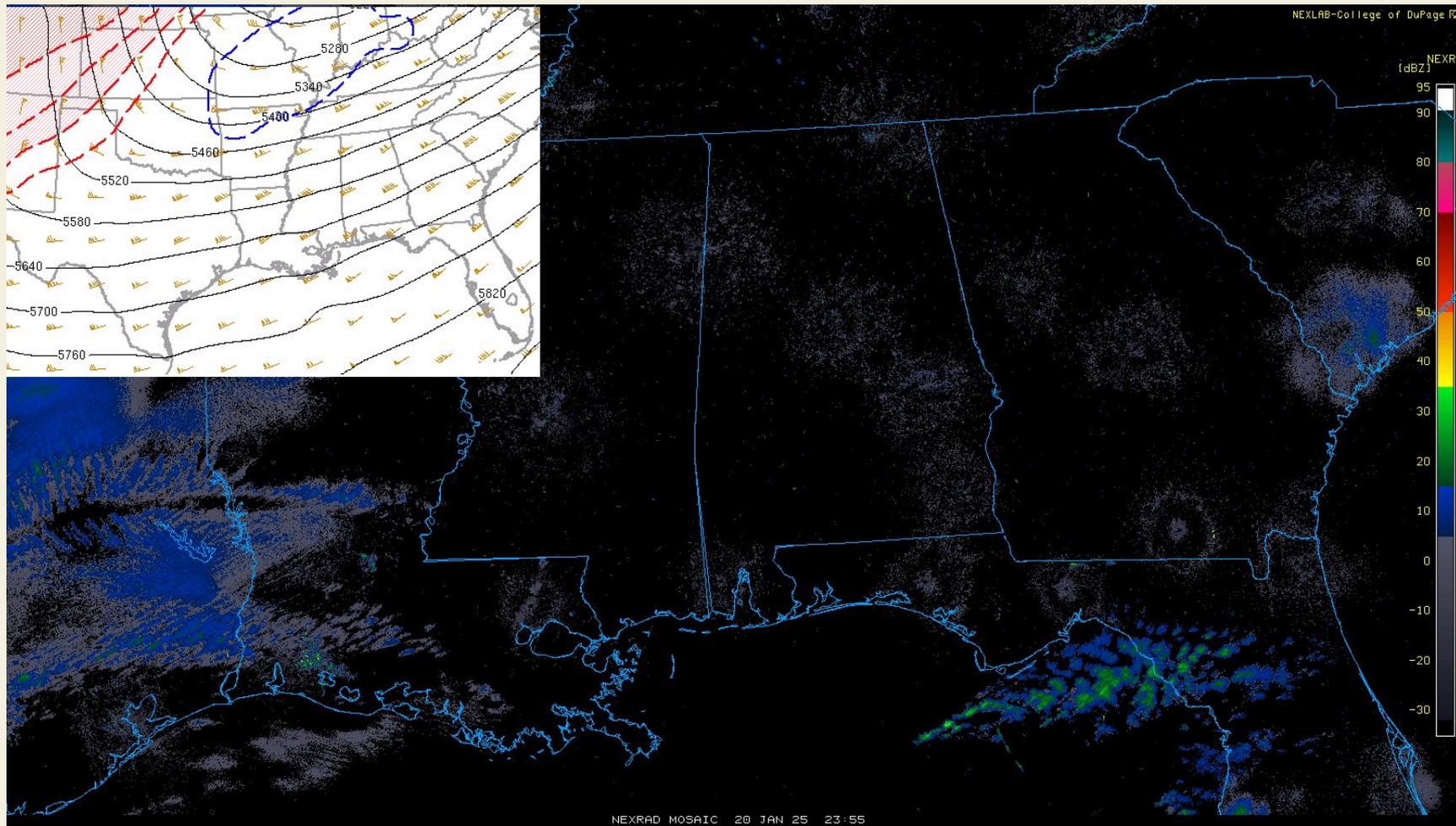
Spread of the Eaton Fire
January 7th-10th, 2025



2025 Memory #2... January 20-22 Gulf Coast Blizzard

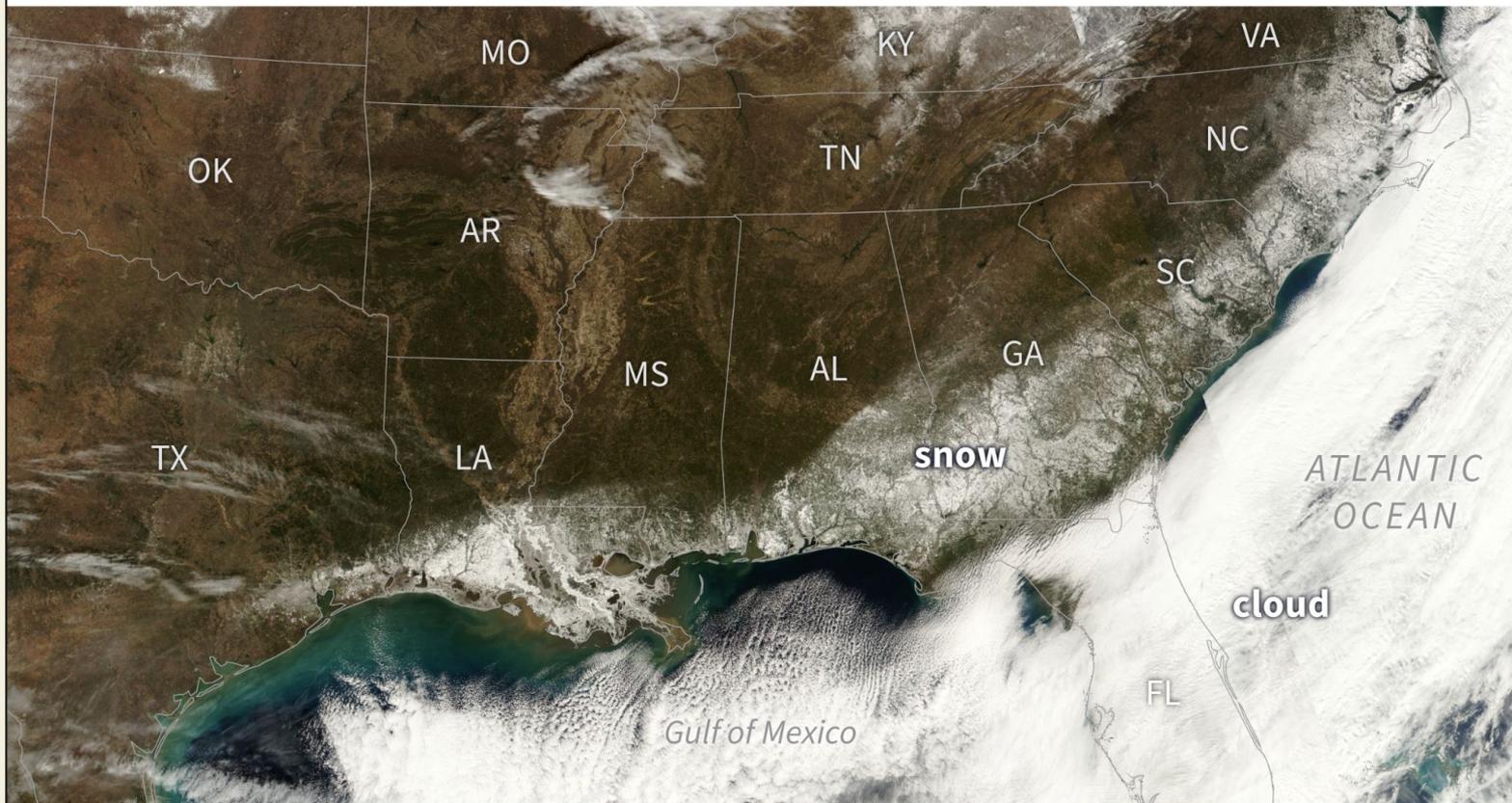


2025 Memory #2... January 20-22 Gulf Coast Blizzard



2025 Memory #2... January 20-22 Gulf Coast Blizzard

Snowfall in the Southeastern U.S.

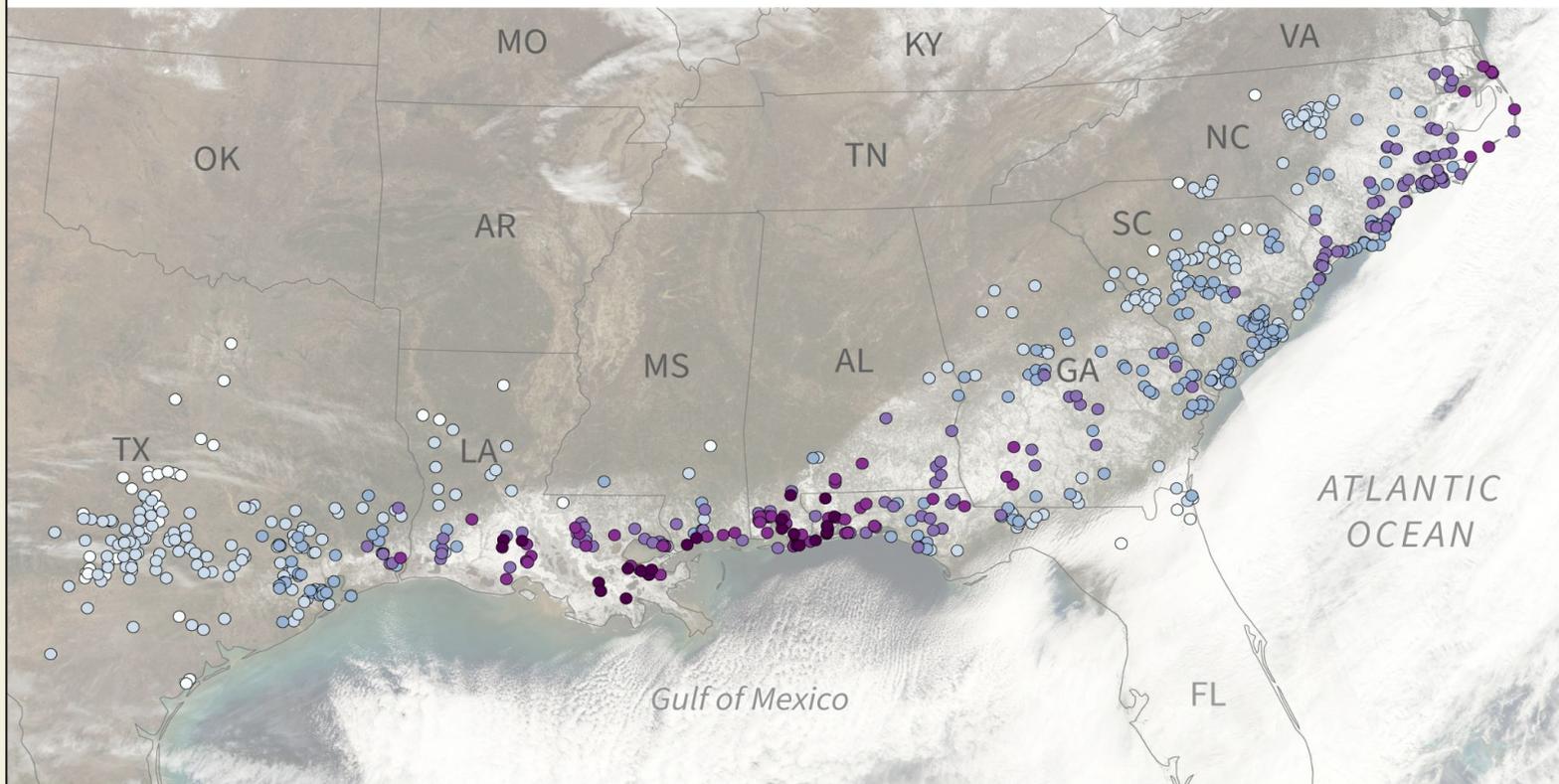


January 22, 2025

NOAA Climate.gov
Data: VIIRS/NOAA-21

2025 Memory #2... January 20-22 Gulf Coast Blizzard

Snowfall records broken at stations in the Southeastern U.S.



January 20-22, 2025

record one-day snowfall (inches)



NOAA Climate.gov
Data: NRCC,
VIIRS/NOAA-21

2025 Memory #2... January 20-22 Gulf Coast Blizzard



Historical Two-Day Total Snowfall Records

Max 2-Day Total Snowfall for Mobile Area			Max 2-Day Total Snowfall for Pensacola FL		
Rank	Value (Inches)	Ending Date	Rank	Value (Inches)	Ending Date
1	7.5	2025-01-22	1	8.9	2025-01-22
2	6.0	1895-02-15	2	3.0	1895-02-15
3	5.0	1881-01-25	3	2.3	1954-03-07
4	4.0	1895-02-14	4	2.1	1899-02-13
5	3.6	1973-02-10	5	2.0	1895-02-14
<i>Period of record: 1881-01-01 to 2025-01-23</i>			<i>Period of record: 1880-01-01 to 2025-01-23</i>		

From NWS Mobile, Alabama website for this event review...

“Over 60 snow depth reports were collected from the *Community Collaborative Rain Hail and Snow* ([CoCoRaHS](#)) Network observers along the north-central Gulf Coast...”

2025 Memory #3... Passing of a Modern Meteorology Giant

Charles A. Doswell III (1945–2025)



2025 Memory #3... Passing of a Modern Meteorology Giant



Refine by Publication ^

Bulletin of the American Meteorological Society (8)

Journal of Applied Meteorology and Climatology (2)

Journal of Atmospheric and Oceanic Technology (3)

Journal of the Atmospheric Sciences (5)

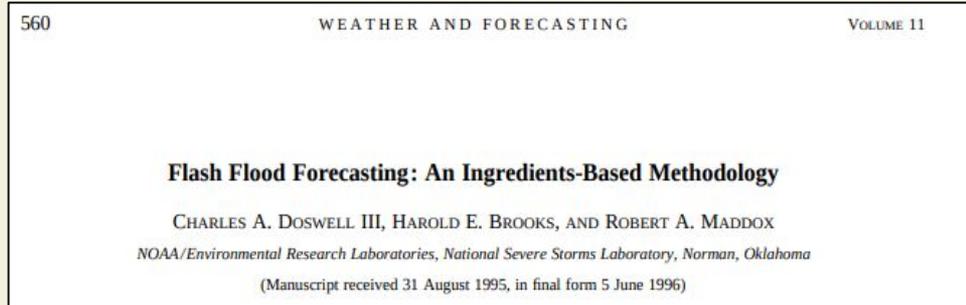
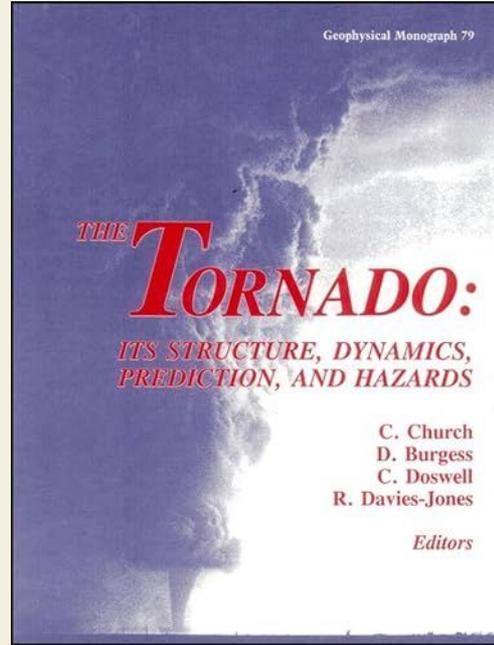
Journal of Hydrometeorology (1)

Meteorological Monographs (3)

Monthly Weather Review (32)

Weather and Forecasting (41)

Weather, Climate, and Society (1)



NOAA TECHNICAL MEMORANDUM NWS NWSFC-5
NWS Accession No. PB93-162321

THE OPERATIONAL METEOROLOGY OF CONVECTIVE WEATHER

VOLUME I: OPERATIONAL MESOANALYSIS

Charles A. Doswell III
National Severe Storms Forecast Center
Kansas City, Missouri

November 1992

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service

Electronic report produced by
Tim Weisand
Weather Graphics Technologies / www.weathergraphics.com
March 2000

2025 Memory #4... A New Age of Science Skepticism?

Attacks on Science! Loss of gov integrity; Jobs, Obs, & RAOBS

NEWS

880 lose jobs at agency

'Horrible across the board'
over 800 employees

Noaa fires hundreds of climate workers after court clears way for dismissals

Workers had spent weeks in limbo amid legal rollercoaster but letters confirm block on terminations no longer in effect

by Rachel Tillapaugh | Fri, February 28, 2025 at 6:23 PM

probationary employees

NOAA fired approximately 800 probationary employees in February. The agency briefly reinstated them, then re-fired them.

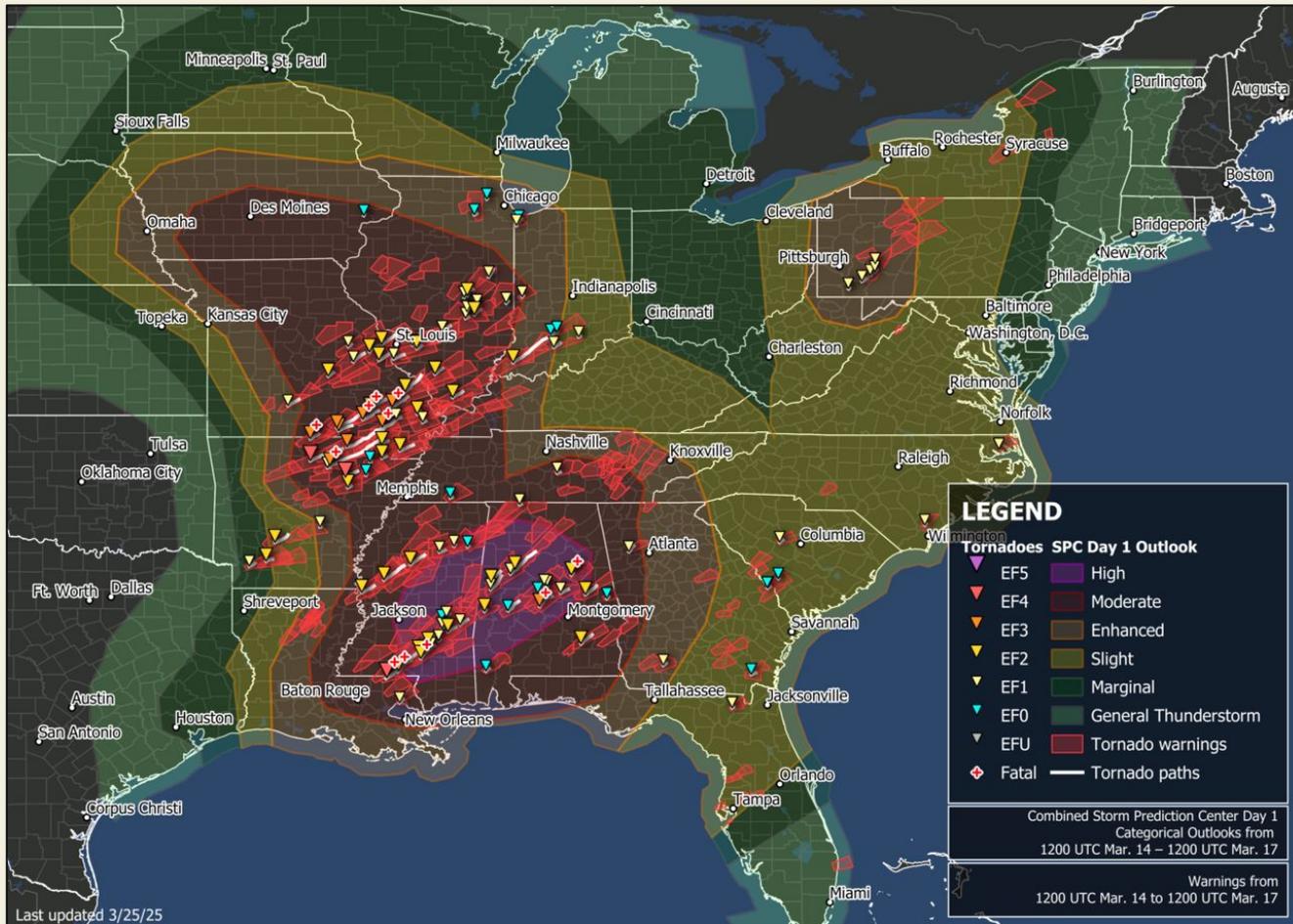


Jory Heckman | @jheckmanWFED

June 30, 2025 6:53 pm ⌚ 3 min read

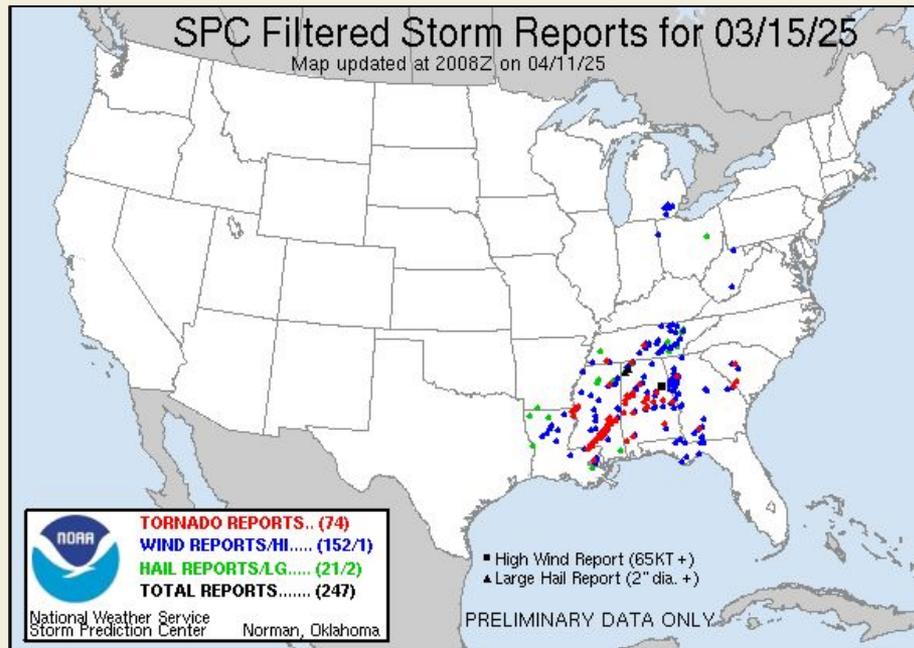
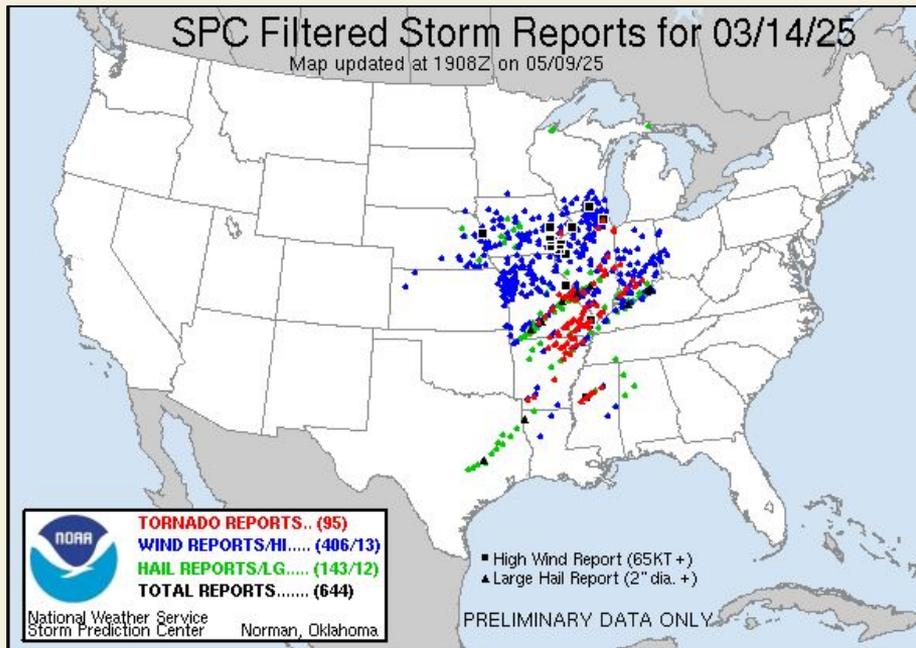


2025 Memory #5... Mid-March Severe Weather Outbreak

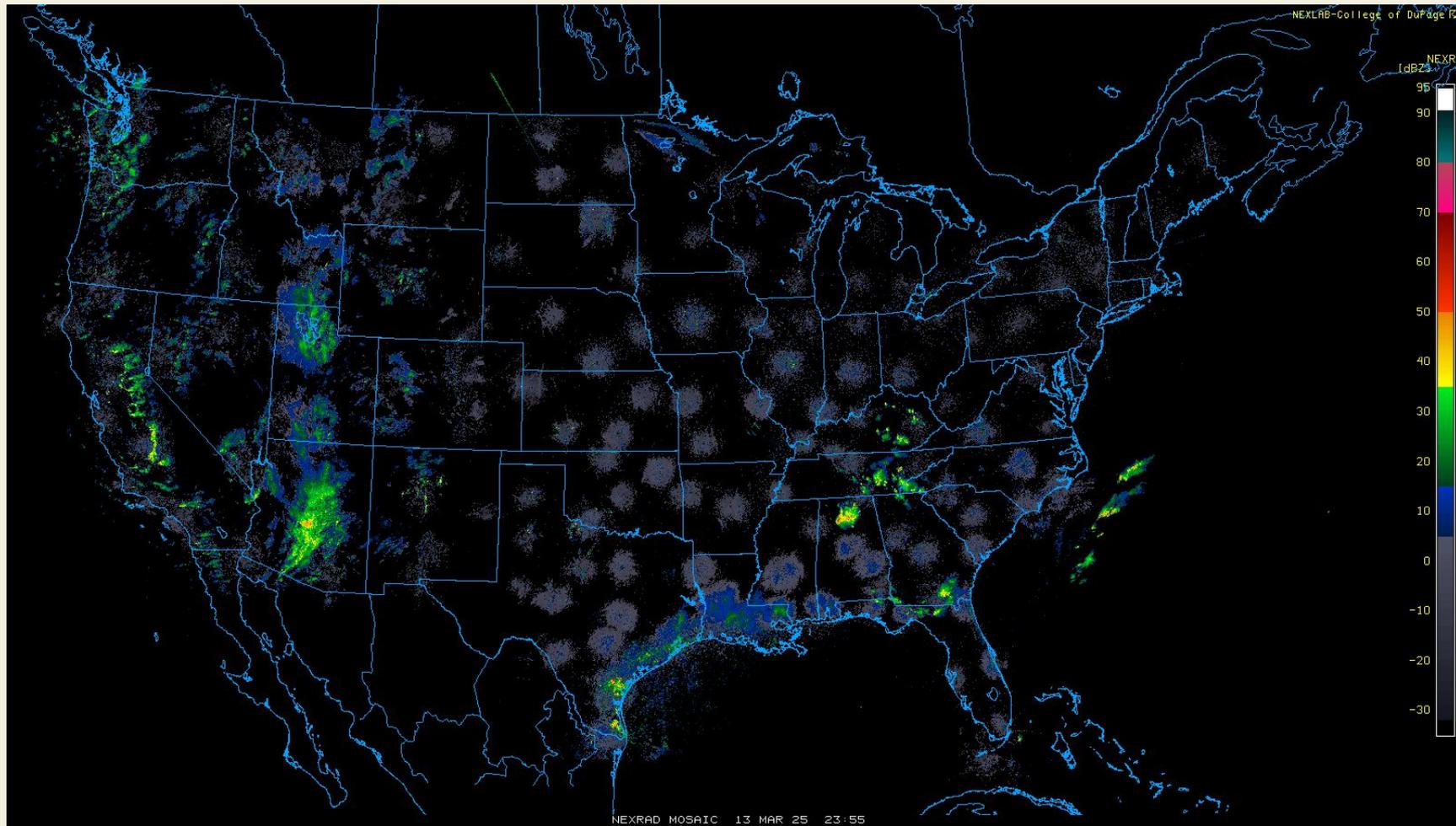


2025 Memory #5... Mid-March Severe Weather Outbreak

118 individual tornadoes over 2-days is a March Record

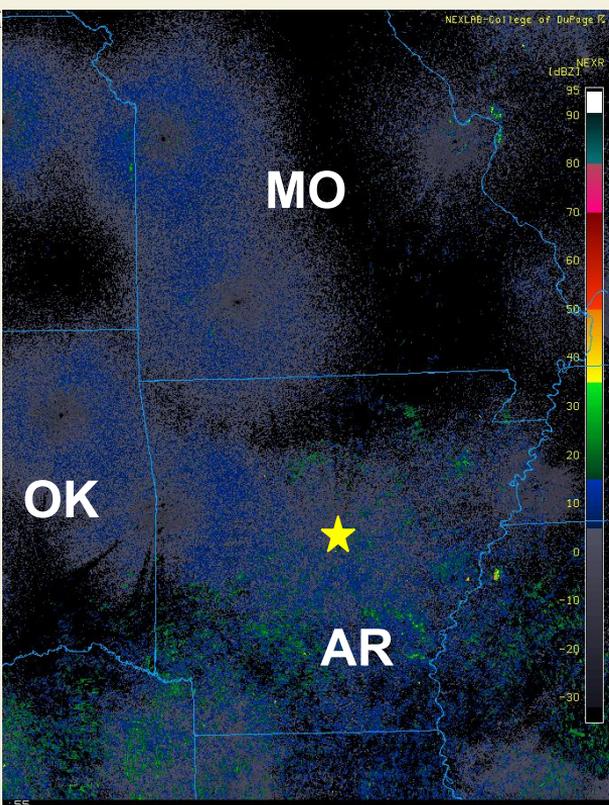
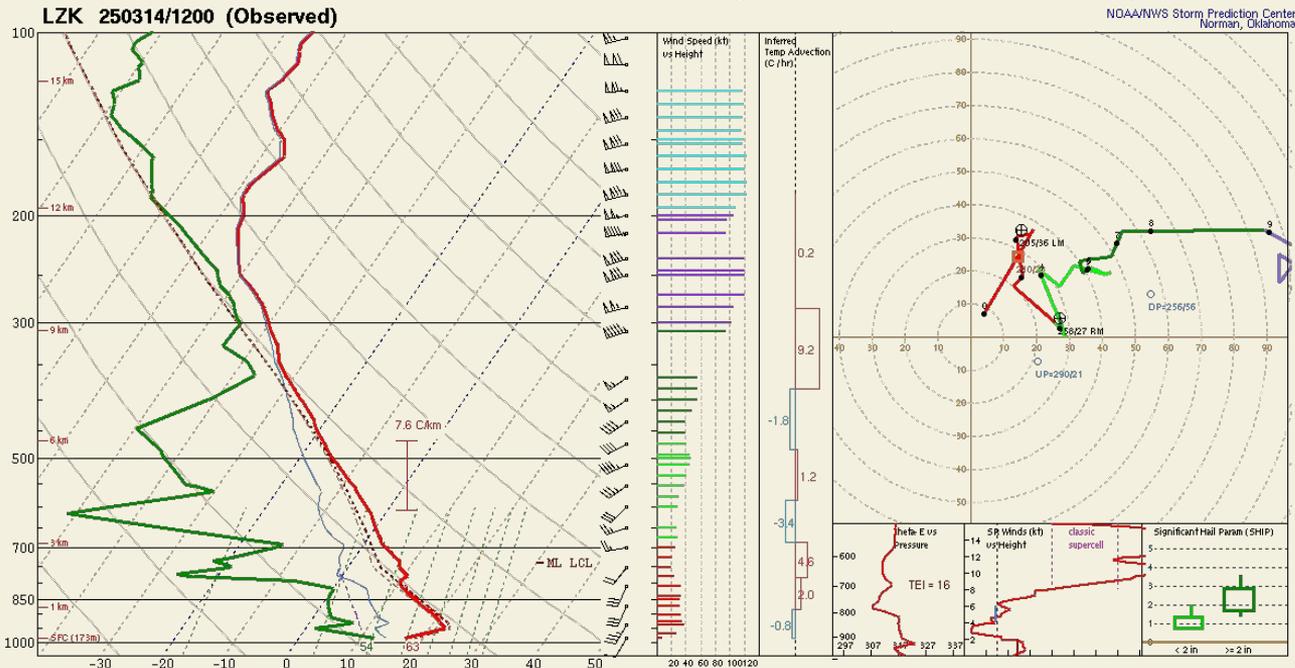


2025 Memory #5... Mid-March Severe Weather Outbreak



2025 Memory #5... Mid-March Severe Weather Outbreak

Little Rock, Arkansas Sounding and Radar Evolution Analysis: 7 AM CDT, March 14, 2025



PARCEL	CAPE	CINH	LCL	LI	LFC	EL	SRH(m2/s2)	Shear(kt)	MnWind	SRW	
SURFACE	0	0	646m	2	M	2120'	SFC - 1 km	116	24	208/31	150/25
MIXED LAYER	0	0	2387m	3	M	7827'	SFC - 3 km	64	23	215/27	146/20
FCST SURFACE	0	0	2819m	0	M	9245'	SFC - 6 km	35	225/28	152/16	
MU (929 mb)	0	0	2253m	0	M	7389'	SFC - 8 km	57	228/30	160/15	

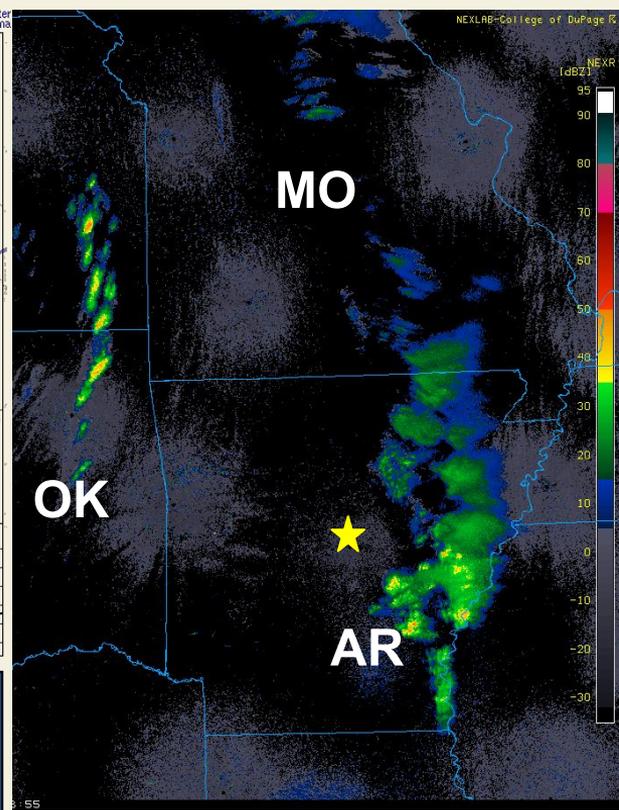
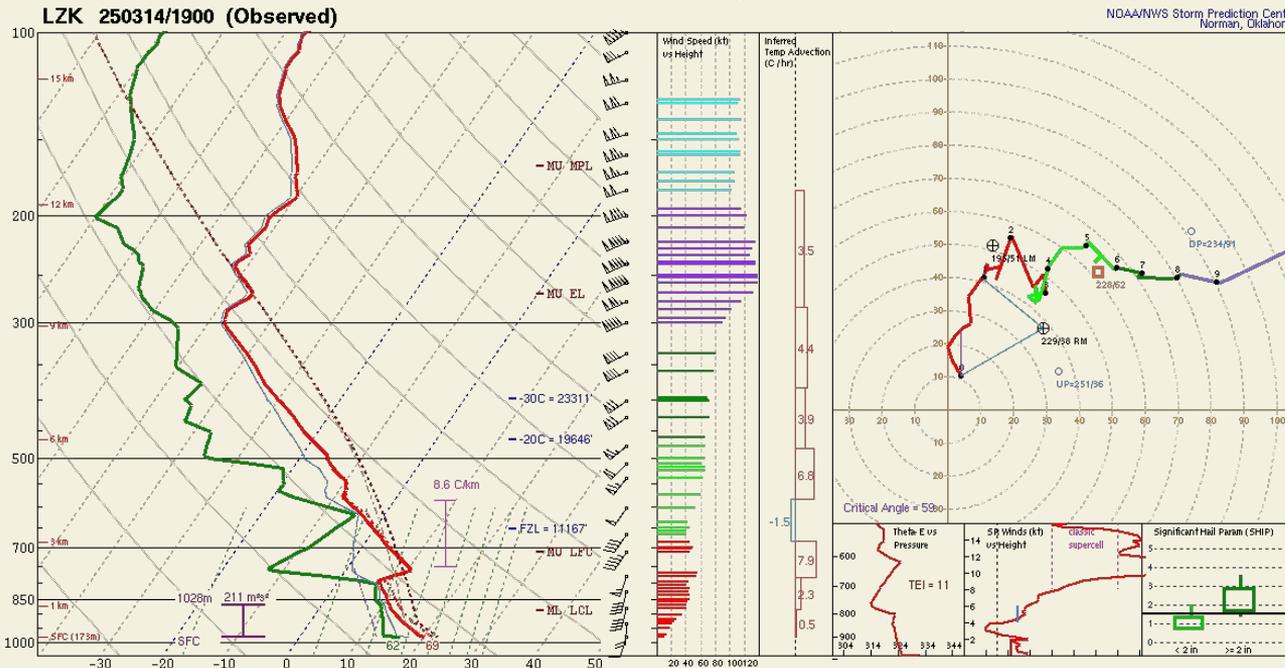
SARS - Sounding Analogs	
SUPERCCELL	SGFNT HAIL
No Quality Matches	No Quality Matches

Effective-Layer STP (with CIN)	
EF4+	EF3
EF2	EF1
EF0	NONTOR

Storm Motion Vectors	
Left Supercell = 0.0	Storm Motion Vectors
STP (eff layer) = 0.0	Bunkers Right = 258/27 kt
STP (fix layer) = 0.0	Bunkers Left = 205/36 kt
Sig Hail = 0.0	Corfidi Downshear = 258/56 kt
	Corfidi Upshear = 290/21 kt

2025 Memory #5... Mid-March Severe Weather Outbreak

Little Rock, Arkansas Sounding and Radar Evolution Analysis: 2 PM CDT, March 14, 2025



PARCEL	CAPE	CINH	LCL	LI	LFC	EL	SRH(m2/s2)	Shear(kt)	MnWind	SRW	
SURFACE	1621	-18	483m	-5	2672m	32114'	SFC - 1 km	212	30	190/26	91/24
MIXED LAYER	519	-154	862m	-1	4028m	31239'	SFC - 3 km	325	36	200/37	122/20
FCST SURFACE	986	-67	1202m	-3	3319m	31871'	Eff Inflow Layer	211	30	190/26	92/24
MU (982 mb)	1621	-18	483m	-5	2672m	32114'	SFC - 6 km	58	208/42	146/15	
							SFC - 8 km	72	213/44	156/14	
							LCL - EL (Cloud Layer)	120	217/51	188/16	
							Eff Shear (EBWD)	54	205/40	133/17	
							BRN Shear = 96 m/s ²				
							4-6km SR Wind = 208/25 kt				
							Storm Motion Vectors				
							Bunkers Right = 229/88 kt				
							Bunkers Left = 195/51 kt				
							Corfidi Downshear = 234/81 kt				
							Corfidi Upshear = 251/36 kt				

PARCEL	CAPE	CINH	LCL	LI	LFC	EL
PW = 1.01 in	3CAPE = 5 J/kg	WB2 = 8130'	WNVDG = 0.0			
K = 21	DCAPE = 407 J/kg	FZL = 11167'	ESP = 0.0			
MidRH = 54%	DownW = 55 F	ConvT = 85F	MMP = 1.00			
LowRH = 83%	MeanW = 9.8 g/kg	MaxT = 73F	NCAPE = 0.23			
SigSevere = 15375 m3/s3						

PARCEL	CAPE	CINH	LCL	LI	LFC	EL
Sfc-3km Agl Lapse Rate = 5.7 C/km						
3-6km Agl Lapse Rate = 7.8 C/km						
850-500mb Lapse Rate = 6.0 C/km						
700-500mb Lapse Rate = 7.6 C/km						

PARCEL	CAPE	CINH	LCL	LI	LFC	EL
Supercell = 6.8						
Left Supercell = 1.5						
STP (eff layer) = 0.2						
STP (fix layer) = 2.2						
Sig Hail = 1.5						

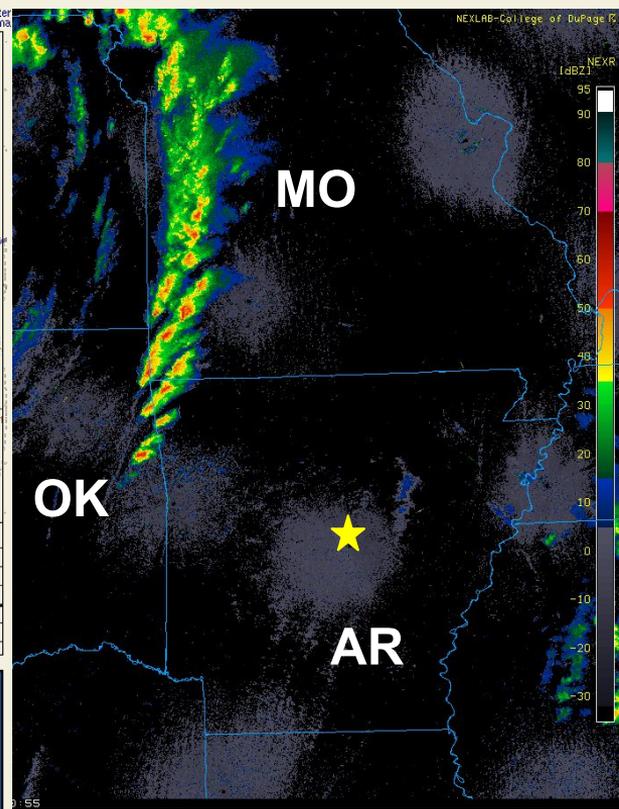
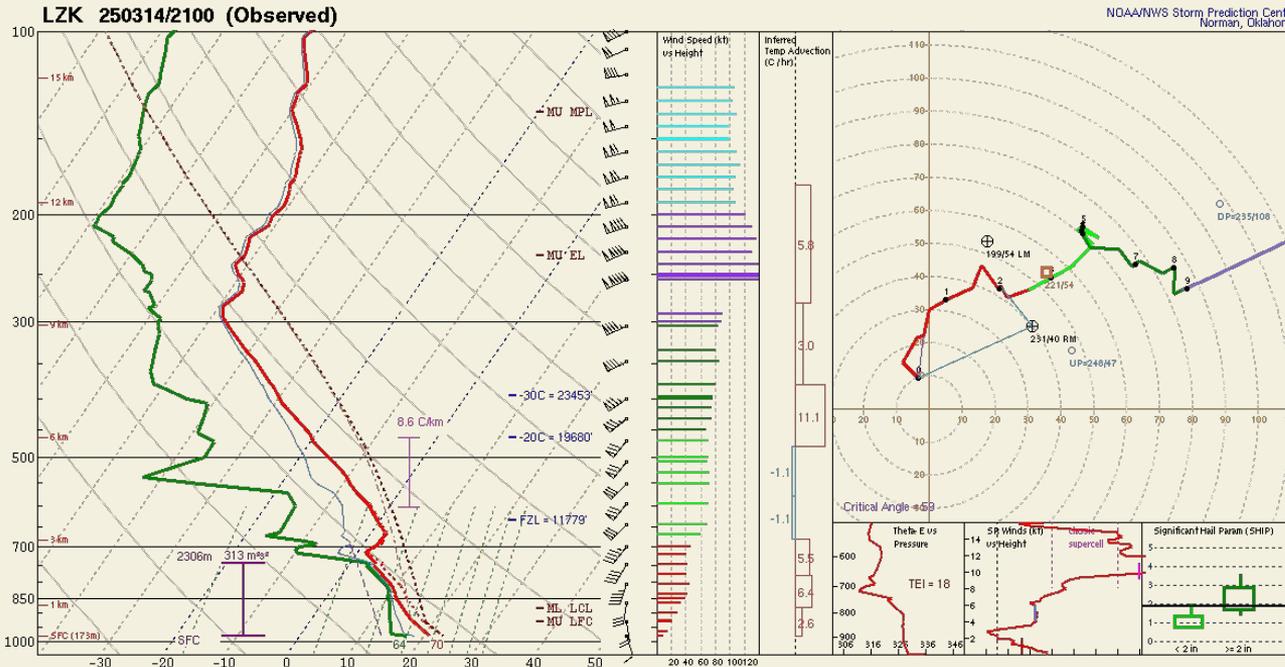
PARCEL	CAPE	CINH	LCL	LI	LFC	EL
1km & 6km AGL Wind Barbs						

PARCEL	CAPE	CINH	LCL	LI	LFC	EL
*** BEST GUESS PRECIP TYPE ***						
Rain.						
Based on sfc temperature of 68.7 F.						
SARS - Sounding Analogs						
SUPERCELL						
SGFNT HAIL						
01041107:ADN1 WEAK						
04042222:UBIN NON						
No Quality Matches						
(19 loose matches)						
SARS: 63% TOR						
(61 loose matches)						
SARS: 48% SIG						

PARCEL	CAPE	CINH	LCL	LI	LFC	EL
Effective-Layer STP (with CIN)						
Prob EF2+ Torn with supercell						
Sounding CLIMO = .15 sigtor						
based on MLCAPE: 0.16						
based on MLCL: 0.13						
based on ESRI: 0.14						
based on EBWD: 0.13						
based on STP_fixd: 0.25						
based on STP_effective: 0.08						

2025 Memory #5... Mid-March Severe Weather Outbreak

Little Rock, Arkansas Sounding and Radar Evolution Analysis: 4 PM CDT, March 14, 2025



PARCEL	CAPE	CINH	LCL	LI	LFC	EL	SRH(m2/s2)	Shear(kt)	MnWind	SRW	
SURFACE	2253	0	459m	-7	459m	35165'	SFC - 1 km	229	25	174/22	86/34
MIXED LAYER	1068	-17	889m	-3	4049m	32174'	SFC - 3 km	352	51	199/33	107/21
FCST SURFACE	1697	0	1270m	-5	1270m	34421'	Eff Inflow Layer	313	37	193/31	102/25
MU (979 mb)	2253	0	459m	-7	459m	35165'	SFC - 6 km	66	211/44	142/15	
							SFC - 8 km	84	215/46	161/14	
							LCL - EL (Cloud Layer)	129	221/54	195/17	
							Eff Shear (EBWD)	66	210/42	136/16	

PW = 1.08 in 3CAPE = 84 J/kg WB2 = 8137' WNDG = 0.0
 K = 25 DCAPE = 429 J/kg FZL = 11779' ESP = 0.0
 MidRH = 52% DownT = 56 F ConvT = 73F MMP = 1.00
 LowRH = 83% MeanW = 10.6 g/kg MaxT = 76F NCAPE = 0.22
 SigSevere = 36410 m3/33

Sfc-3km Agl Lapse Rate = 6.2 C/km
 3-6km Agl Lapse Rate = 7.5 C/km
 650-500mb Lapse Rate = 6.3 C/km
 700-500mb Lapse Rate = 6.5 C/km

Supercell = 14.1
Left Supercell = 1.9
STP (eff layer) = 2.2
STP (fix layer) = 3.4
Sig Hail = 1.9

Storm Motion Vectors:
 Bunkers Right = 231/40 kt
 Bunkers Left = 199/54 kt

Corfidi Downshear = 235/108 kt
 Corfidi Upshear = 248/47 kt

1km & 6km AGL Wind Barbs

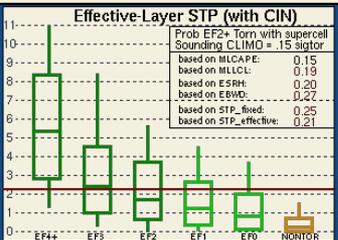
*** BEST GUESS PRECIP TYPE ***
 Based on sfc temperature of 70.2 F.

Rain.

SARS - Sounding Analogs

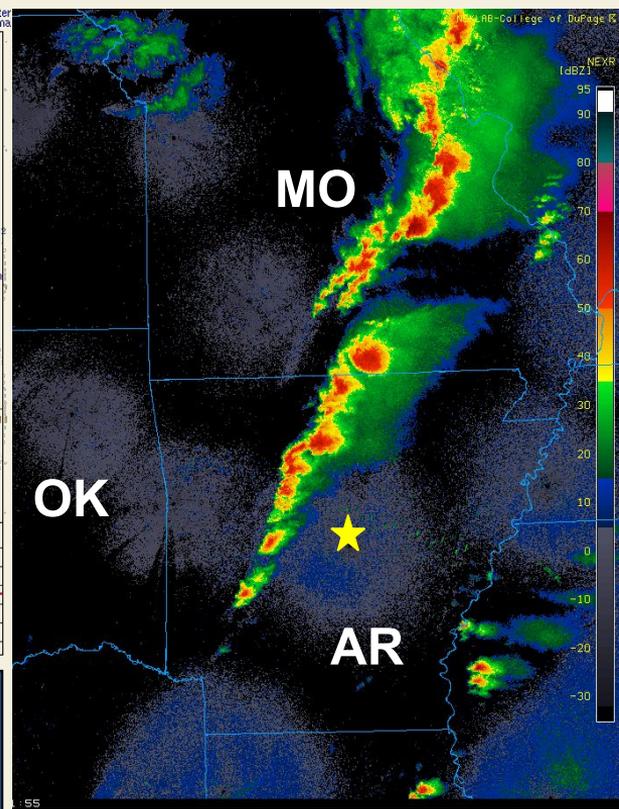
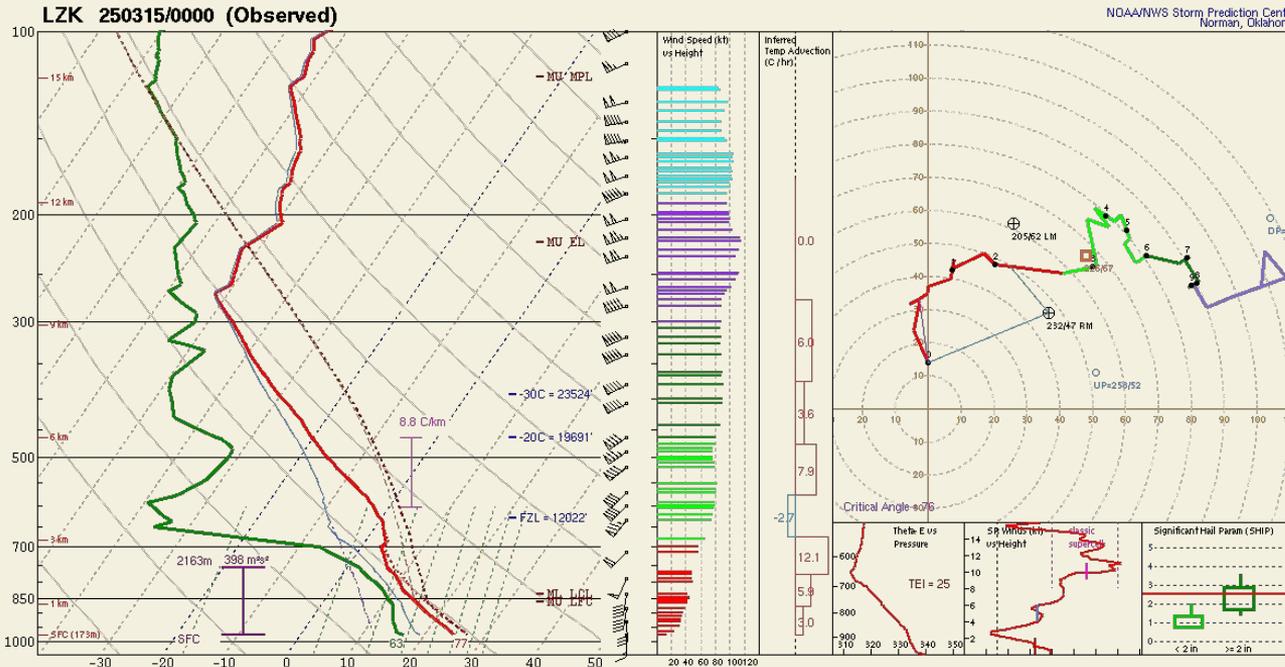
SUPERCCELL	SGFNT HAIL
61011500.PIA 510	920356001.BW 300
00030222.AFW NON	00121618.BMX 273

(11 loose matches) SARS: 64% TOR
 (63 loose matches) SARS: 80% SIG



2025 Memory #5... Mid-March Severe Weather Outbreak

Little Rock, Arkansas Sounding and Radar Evolution Analysis: 7 PM CDT, March 14, 2025



PARCEL	CAPE	CINH	LCL	LI	LFC	EL	SRH(m2/s2)	Shear(kt)	MnWind	SRW	
SURFACE	2816	0	1020m	-8	1069m	36166'	SFC - 1 km	311	29	180/32	95/07
MIXED LAYER	1905	-4	1317m	-6	1426m	35046'	SFC - 3 km	477	58	200/41	112/25
FCST SURFACE	2388	0	1599m	-7	1599m	35597'	Eff Inflow Layer	398	38	190/38	105/32
MU (975 mb)	2816	0	1020m	-8	1069m	36166'	SFC - 6 km	74	213/51	142/17	
							SFC - 8 km	85	218/54	161/14	
							LCL - EL (Cloud Layer)	101	226/66	213/20	
							Eff Shear (EBWD)	70	212/50	138/18	

SARS - Sounding Analogs	
SUPERCELL	SGFNT HAIL
No Quality Matches	No Quality Matches
(5 loose matches) SARS: 40% TOR	(93 loose matches) SARS: 85% SIG

Effective-Layer STP (with CIN)	
Prob EF2+ Torn with supercell Sounding CLIMO = 15 sigtor	
based on MLCAPE: 0.13	
based on MLCLL: 0.10	
based on ESHR: 0.20	
based on EBWD: 0.22	
based on STP_fixd: 0.39	
based on STP_effective: 0.21	

Supercell = 22.4
Left Supercell = 7.6
STP (eff layer) = 3.5
STP (fix layer) = 5.7
Sig Hail = 2.5

Storm Motion Vectors:
 Bunkers Right = 232/47 kt
 Bunkers Left = 205/62 kt

Corfidi Downshear = 241/119 kt
 Corfidi Upshear = 258/52 kt

1km & 6km AGL Wind Barbs

2025 Memory #5... Mid-March Severe Weather Outbreak



2025 Memory #5... Mid-March Severe Weather Outbreak



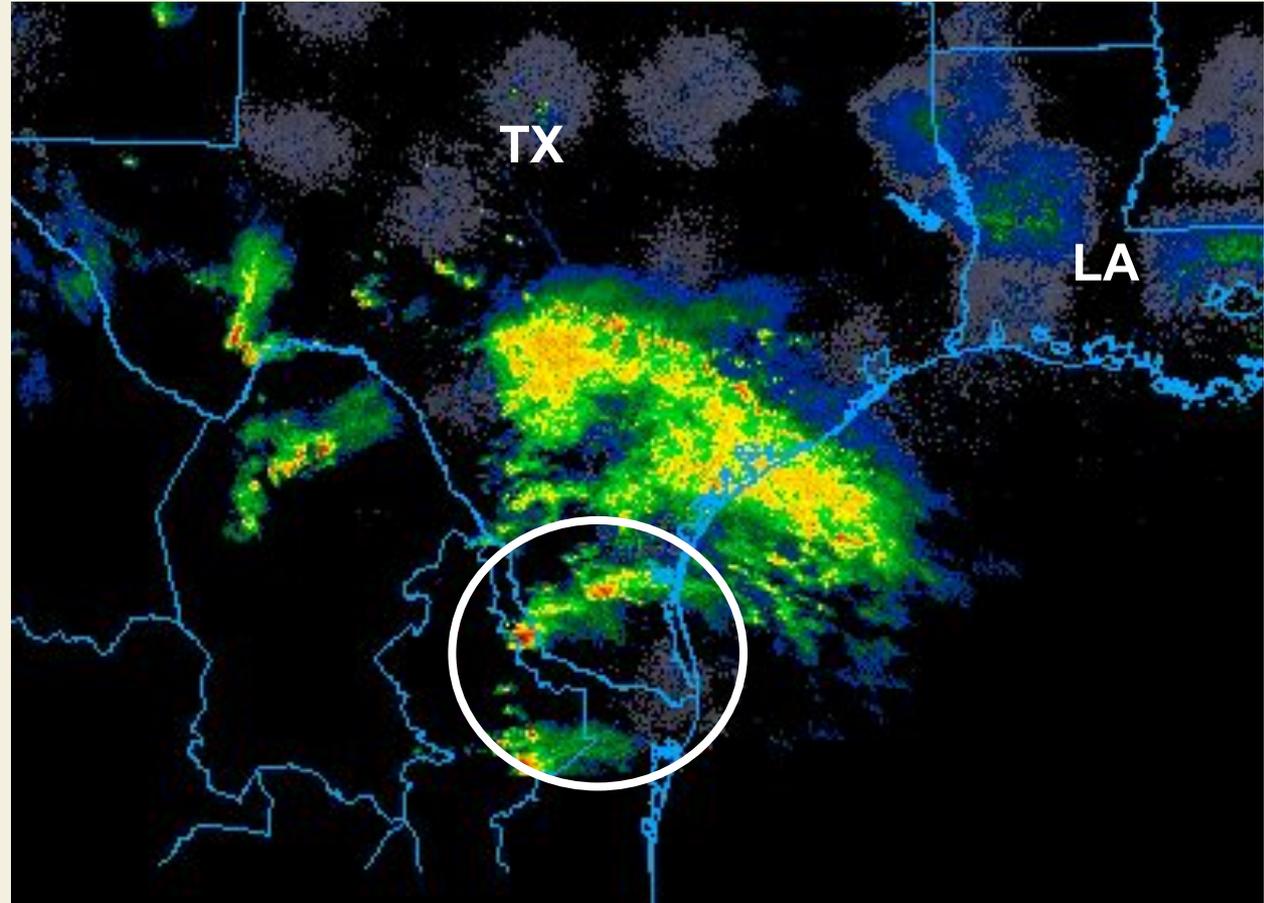
2025 Memory #6... Late-March South Texas Flooding Rains

Extreme Rainfall Totals across Deep South Texas on March 27-28, 2025



2025 Memory #6... Late-March South Texas Flooding Rains

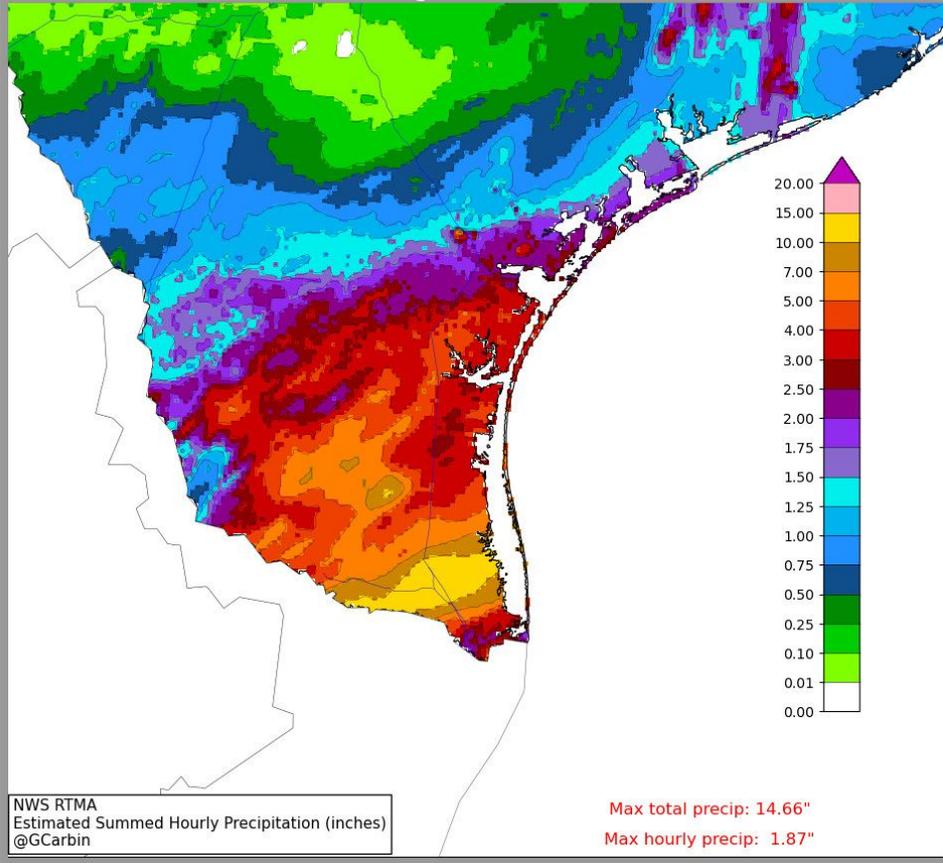
Composite radar loop from March 27 through March 28, 2025 shows several rounds of intense thunderstorm activity moving across deep south Texas in association with a weak southern stream (subtropical jet) disturbance. Each line segment of storms has a tendency to “back-build” contributing to persistent heavy rainfall over the same location.



2025 Memory #6... Late-March South Texas Flooding Rains

Extreme Rainfall Totals across Deep South Texas on March 27-28, 2025

24 hours ending 12 UTC, Mar. 28, 2025



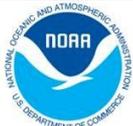
Maximum 1-Day Total Precipitation for HARLINGEN RIO GRANDE VALLEY INTL AP, TX

Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date
1	13.79	2025-03-27
2	10.64	2020-07-26
3	6.73	2007-05-25
4	6.65	1960-08-12
5	6.29	2019-06-24
6	6.25	2018-09-12
7	6.11	2021-10-01
8	5.90	2018-06-20
9	5.57	2008-08-15
10	5.00	1955-09-08

Period of record: 1952-07-15 to 2025-03-27

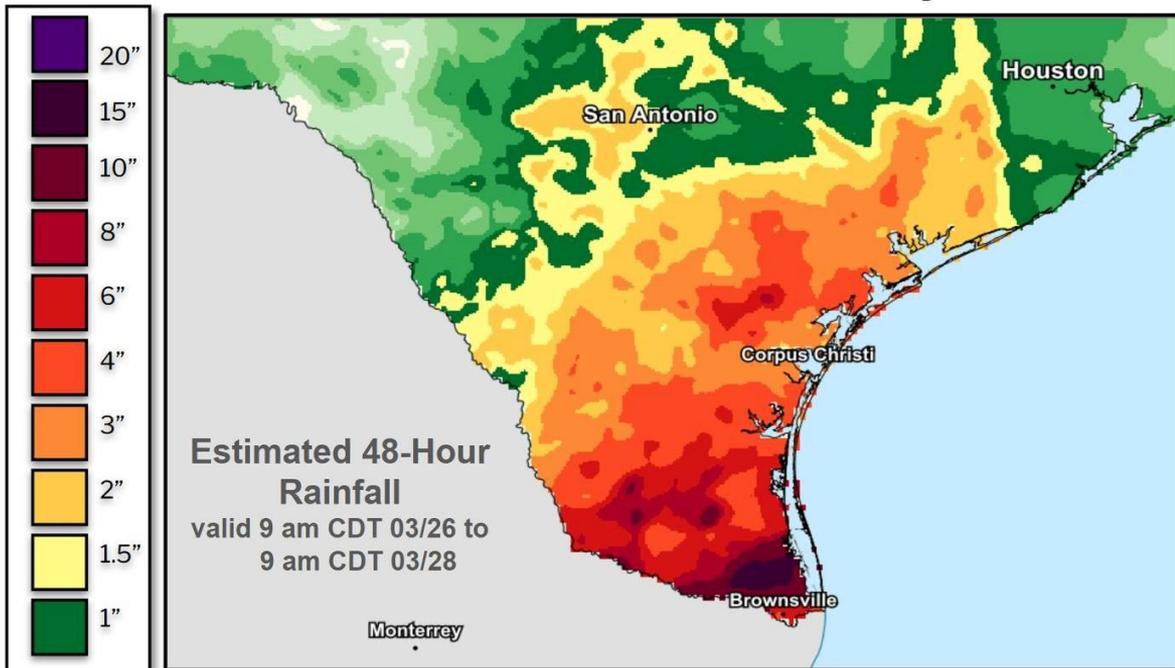
2025 Memory #6... Late-March South Texas Flooding Rains



WEATHER PREDICTION CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



March 26-28 South Texas Heavy Rainfall



Selected 48-Hour Rainfall Reports

Lozano 1.4 S	18.70"
Harlingen 4.4	18.16"
Harlingen 6.2 WSW	14.76"
Mercedes 1.9 SW	13.46"
Port Isabel, TX	13.16"
Laguna Vista 0.7 NW	11.06"
Los Fresnos 0.3 NE	10.64"
Port Mansfield 1.1 SE	9.02"
McAllen 6.3 N	6.78"
Falfurrias 8.9 SSW	6.00"
Kingsville, TX	4.58"
Corpus Christi, TX	2.97"

(valid 9 am CDT 03/26 - 9 am CDT 03/28)



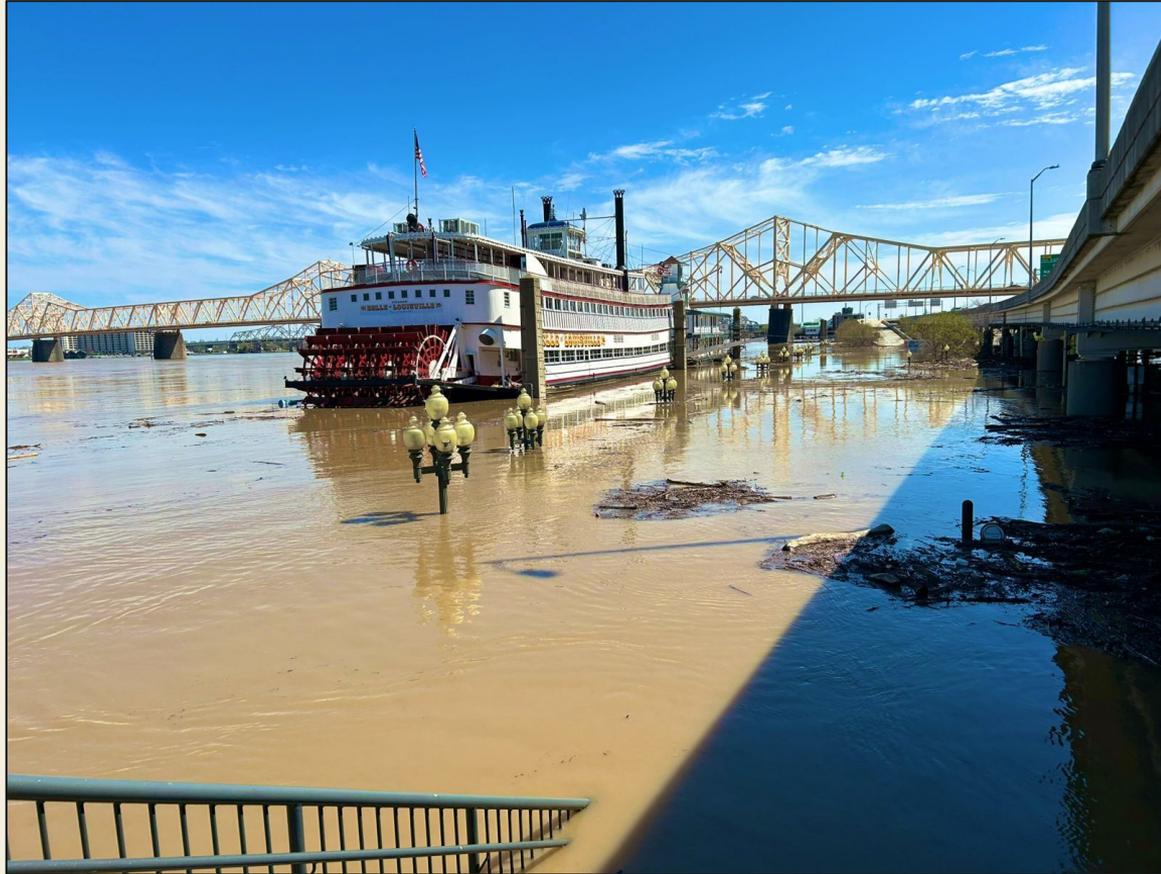
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

For more information go to:
www.wpc.ncep.noaa.gov and www.weather.gov

Issued 11 AM CDT
March 28, 2025

Weather Prediction Center
College Park, MD

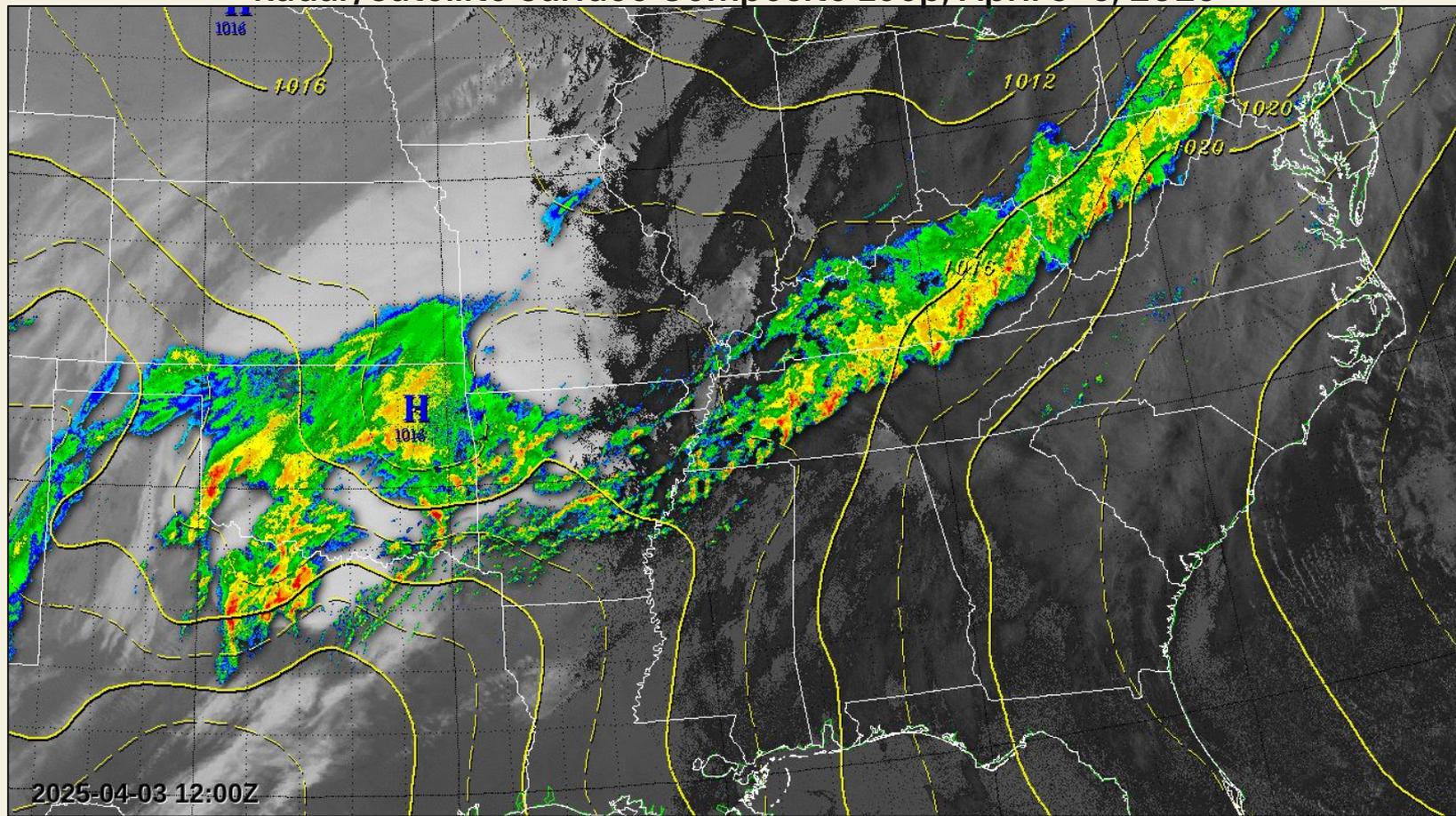
2025 Memory #7... April Rain in the Mid-South



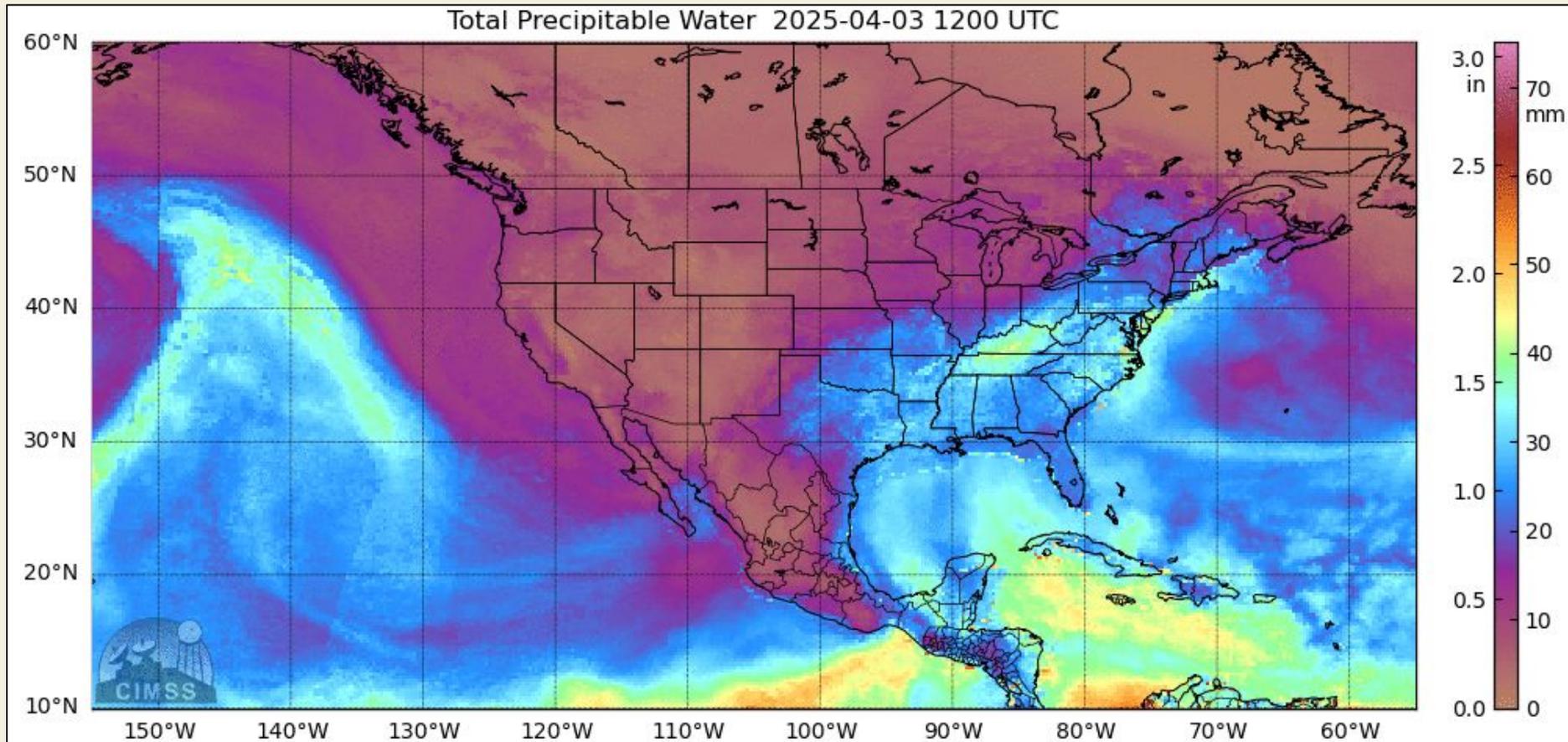
Pictures courtesy NWS Louisville, KY

2025 Memory #7... April Rain in the Mid-South

Radar/Satellite Surface Composite Loop, April 3-5, 2025

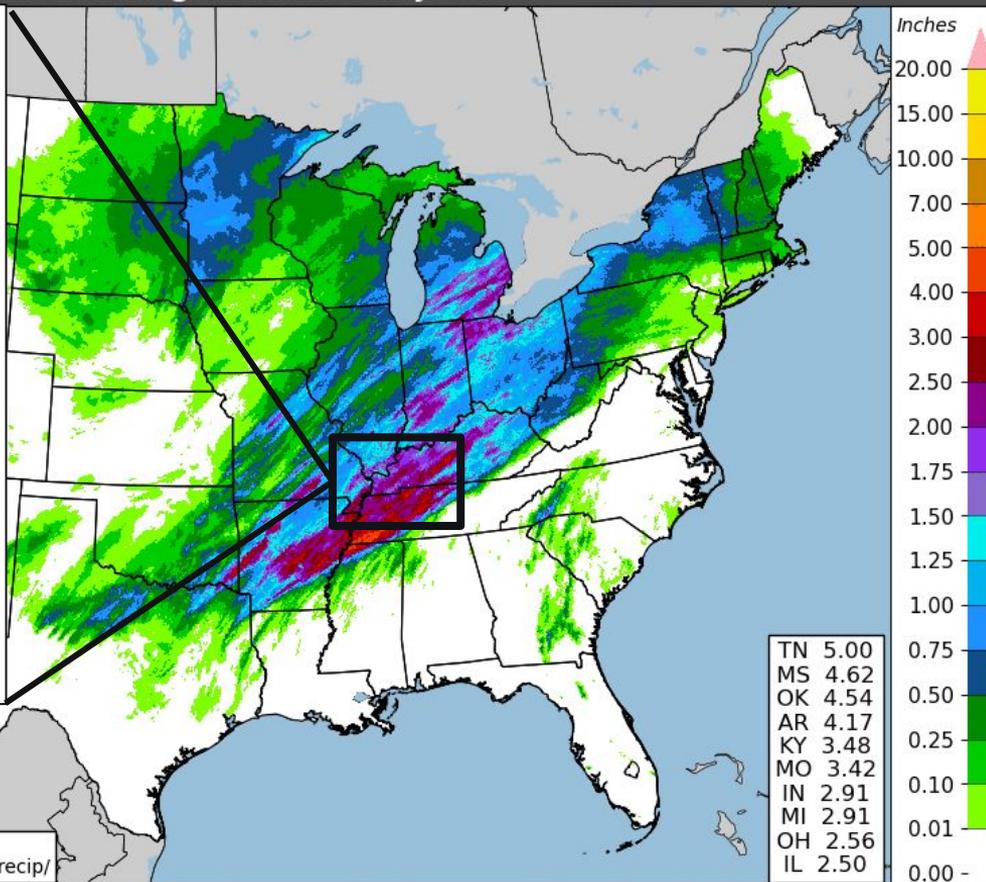
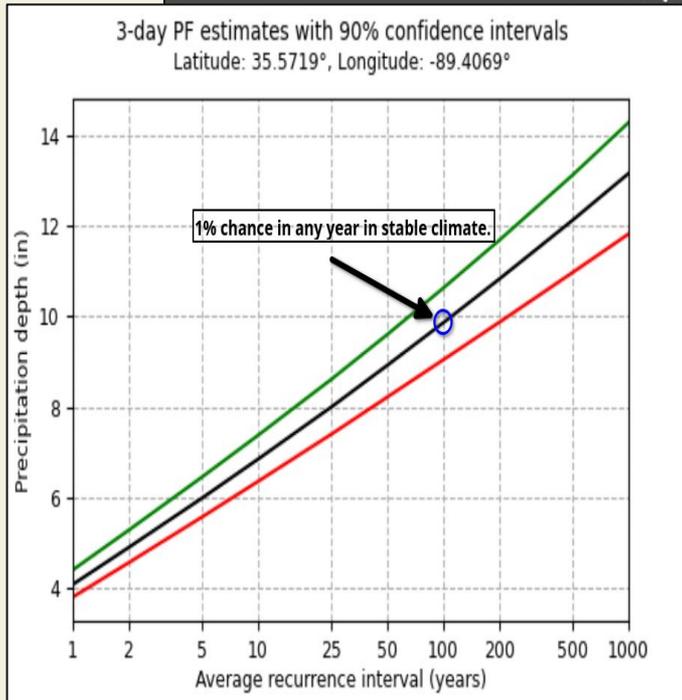


2025 Memory #7... April Rain in the Mid-South



2025 Memory #7... April Rain in the Midsouth

24-Hour Accumulated Precipitation, 12-12 UTC, 20250402_20250403
Top 10 max grid values by state



CONUS max: 5.0 inches
5-inch area(km²): 16.6
10-inch area(km²): 0.0
Total inches: 108727.94

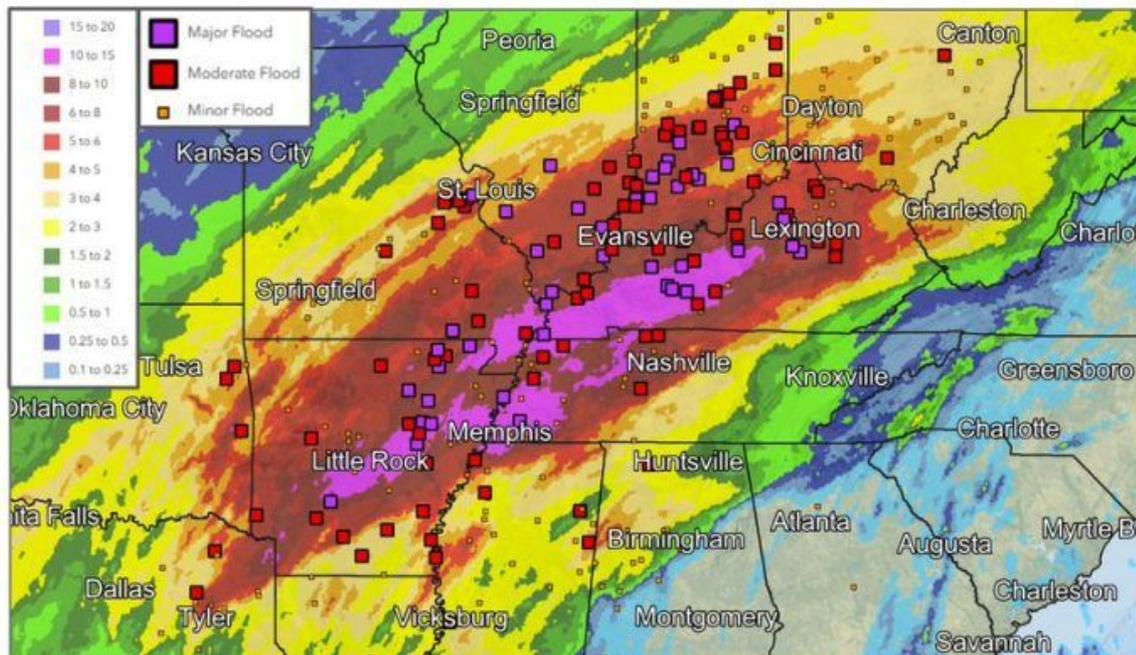
Mapping and analysis by @GCarbin
Data: <https://water.noaa.gov/resources/downloads/precip/>

2025 Memory #7... April Rain in the Mid-South



WEATHER PREDICTION CENTER

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



Selected Rainfall Reports

Benton, KY	15.59"
Hickory, KY	15.55"
Hot Springs Village, AR	14.14"
Beebe, AR	13.40"
Jackson, TN	12.44"
Memphis, TN	12.41"
Little Rock, AR	11.82"
Ullin, IL	10.98"
Scott City, MO	10.70"
Southaven, MS	10.63"
Gelena, IN	9.68"
Texarkana, TX	9.60"
Cincinnati, OH	8.85"
Idabel, OK	7.19"
Nashville, TN	6.29"

Estimated 96-Hour Rainfall Valid 8 am EDT 4/2/2025 to 8 am EDT 4/6/2025
Forecast Moderate and Major River Flooding



National Oceanic and Atmospheric Administration
U.S. Department of Commerce

For more information go to:

www.wpc.ncep.noaa.gov and www.weather.gov

Issued 1 PM EDT

April 6, 2025

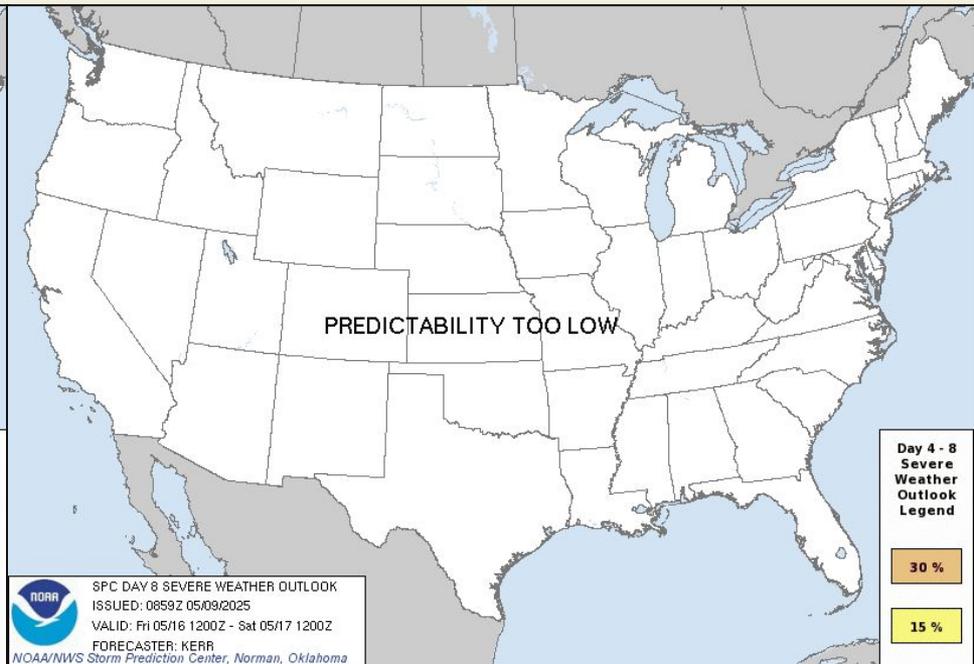
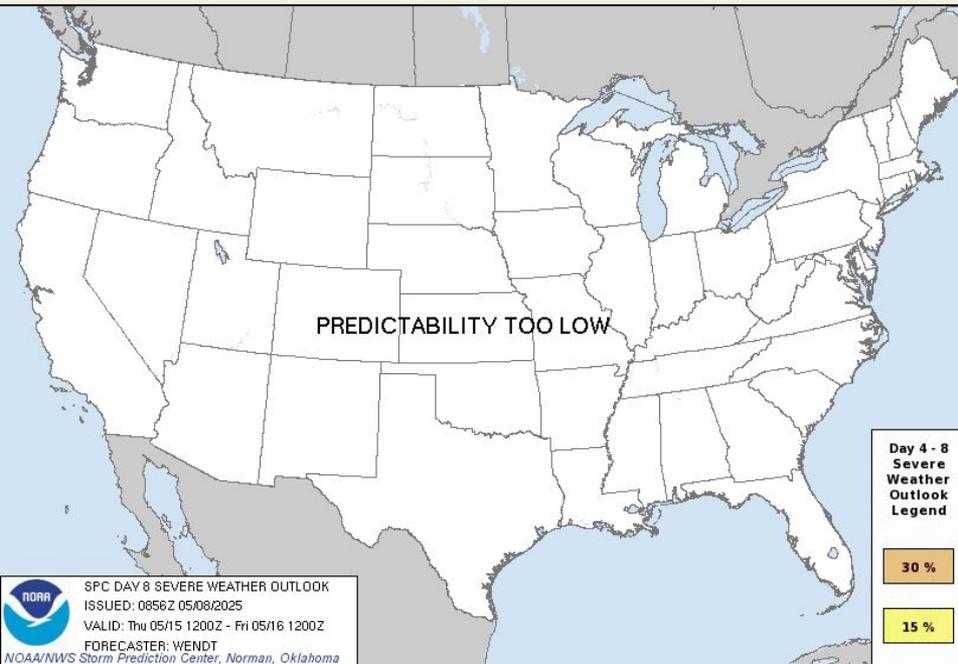
Weather Prediction Center
College Park, MD

2025 Memory #8... Mid-May Severe Storms/Tornadoes



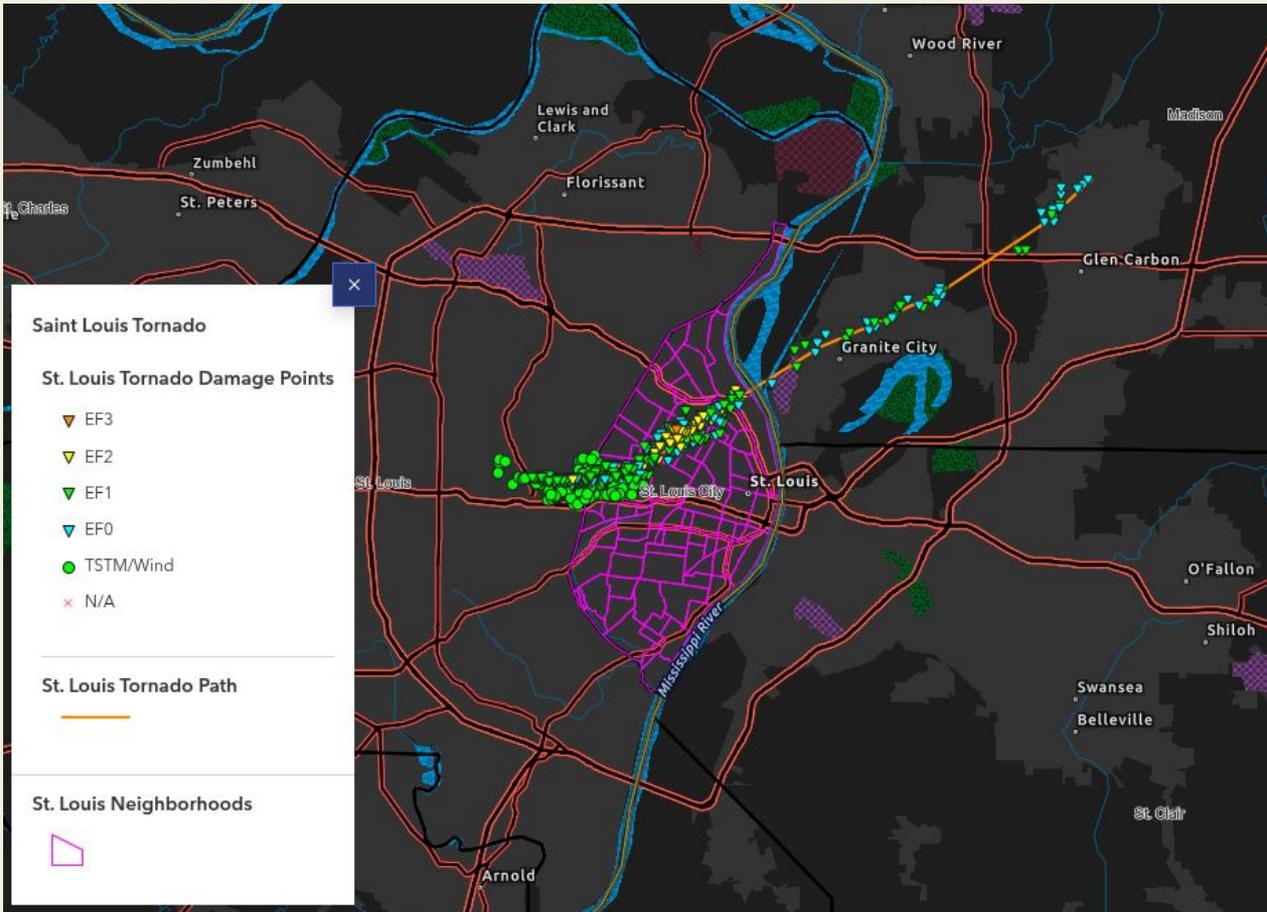
2025 Memory #8... Mid-May Severe Storms/Tornadoes

Evolution of Storm Prediction Center Severe Weather Outlooks from Day 7 to Day 1 (with verifying reports).
Valid on May 15 and May 16, 2025



2025 Memory #8... Mid-May Severe Storms/Tornadoes

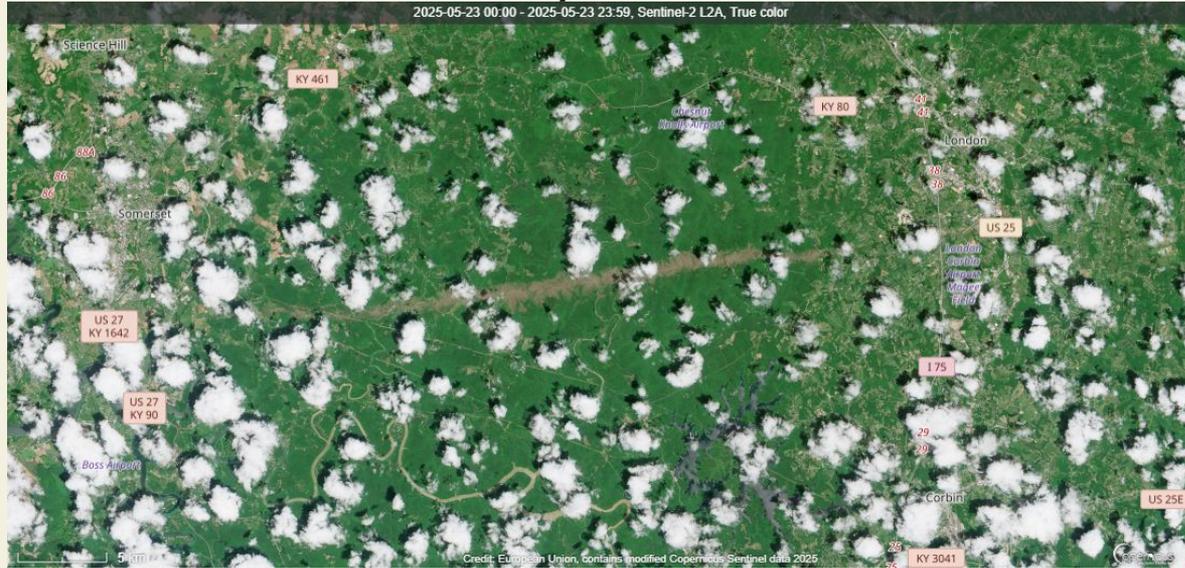
The St. Louis EF3 Tornado



Pictures courtesy NWS St. Louis, MO

2025 Memory #8... Mid-May Severe Storms/Tornadoes

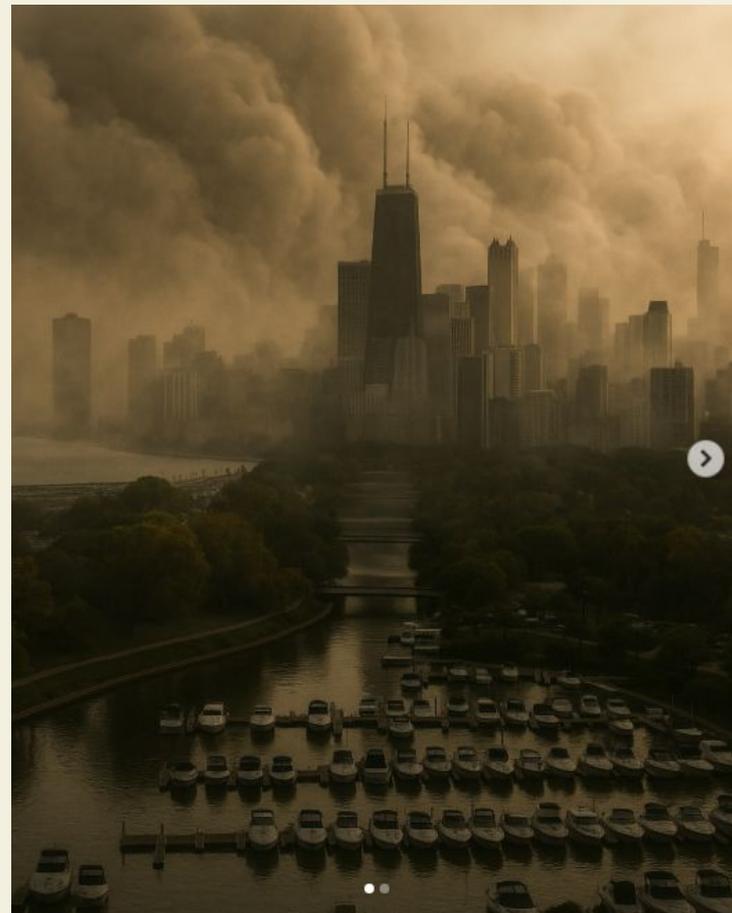
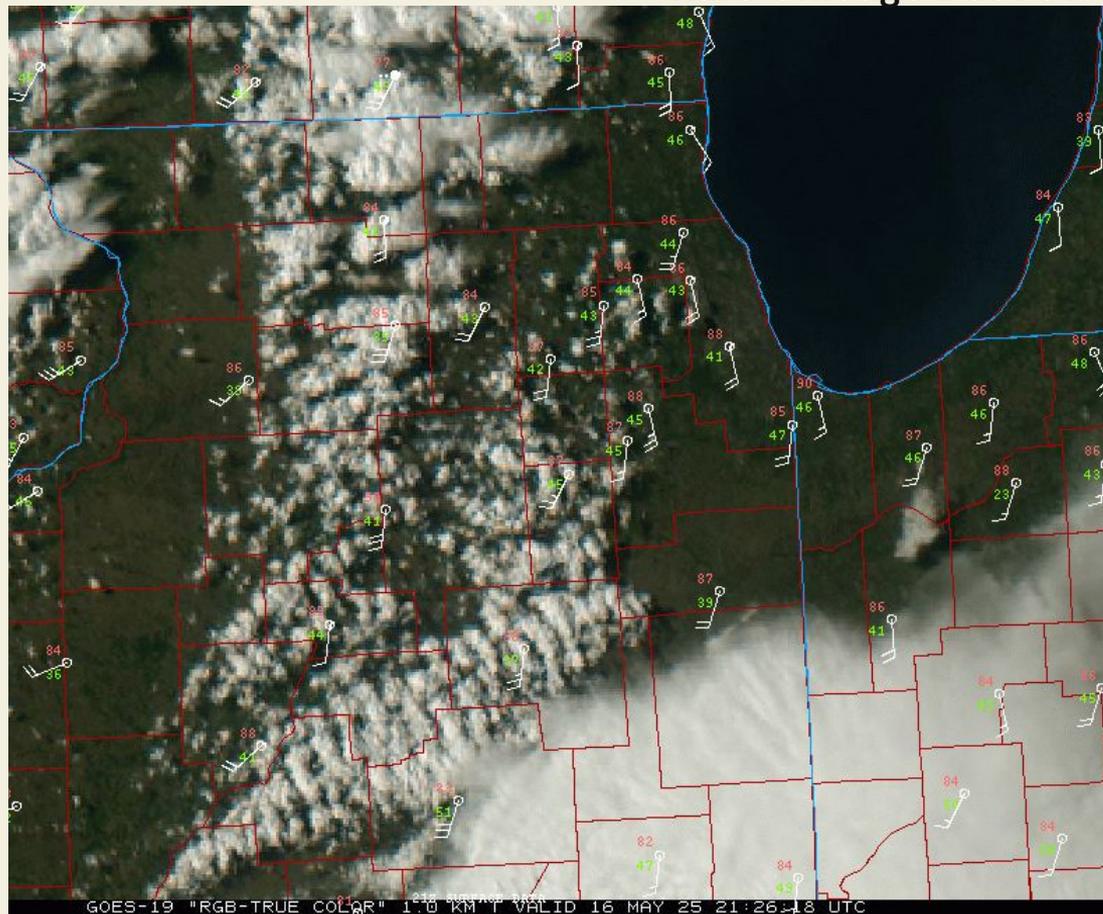
Kentucky EF4 across Russell, Pulaski, and Laurel Counties



Pictures courtesy NWS Jackson, KY

2025 Memory #8... Mid-May Severe Storms/Tornadoes

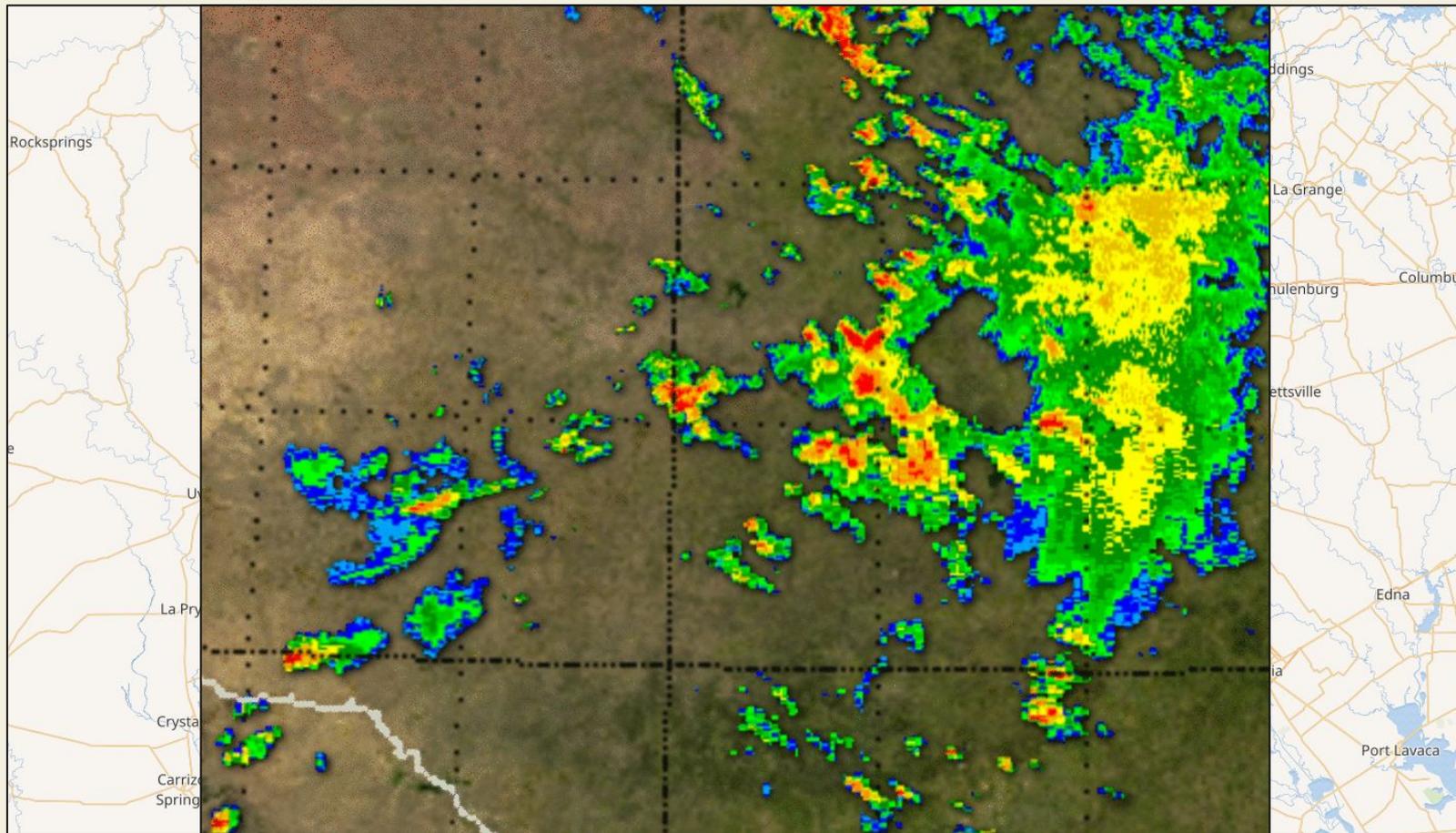
Rare Chicago Dust Storm!



2025 Memory #9... Texas Tragedy on the Guadalupe River



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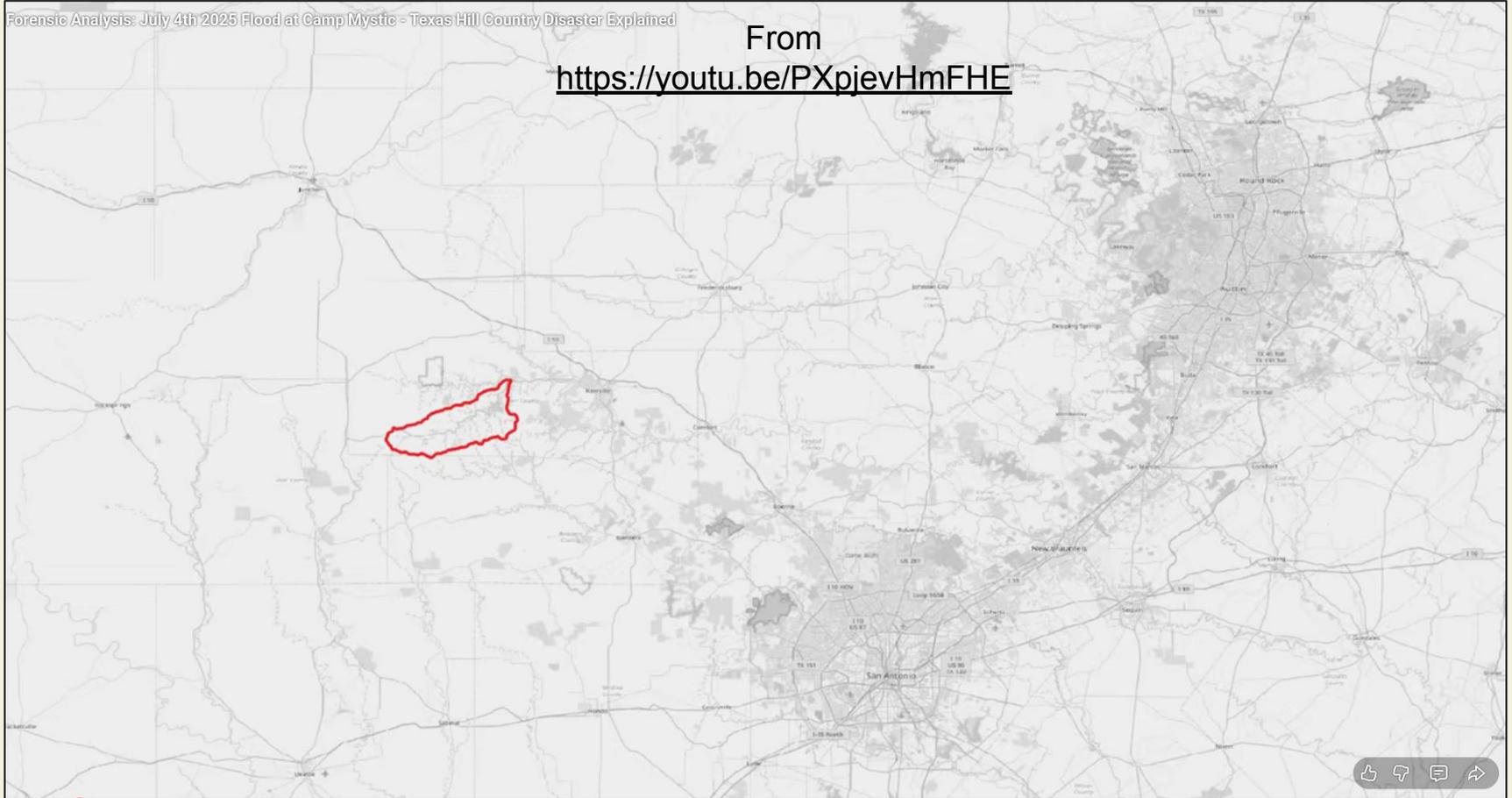


2025 Memory #9... Texas Tragedy on the Guadalupe River

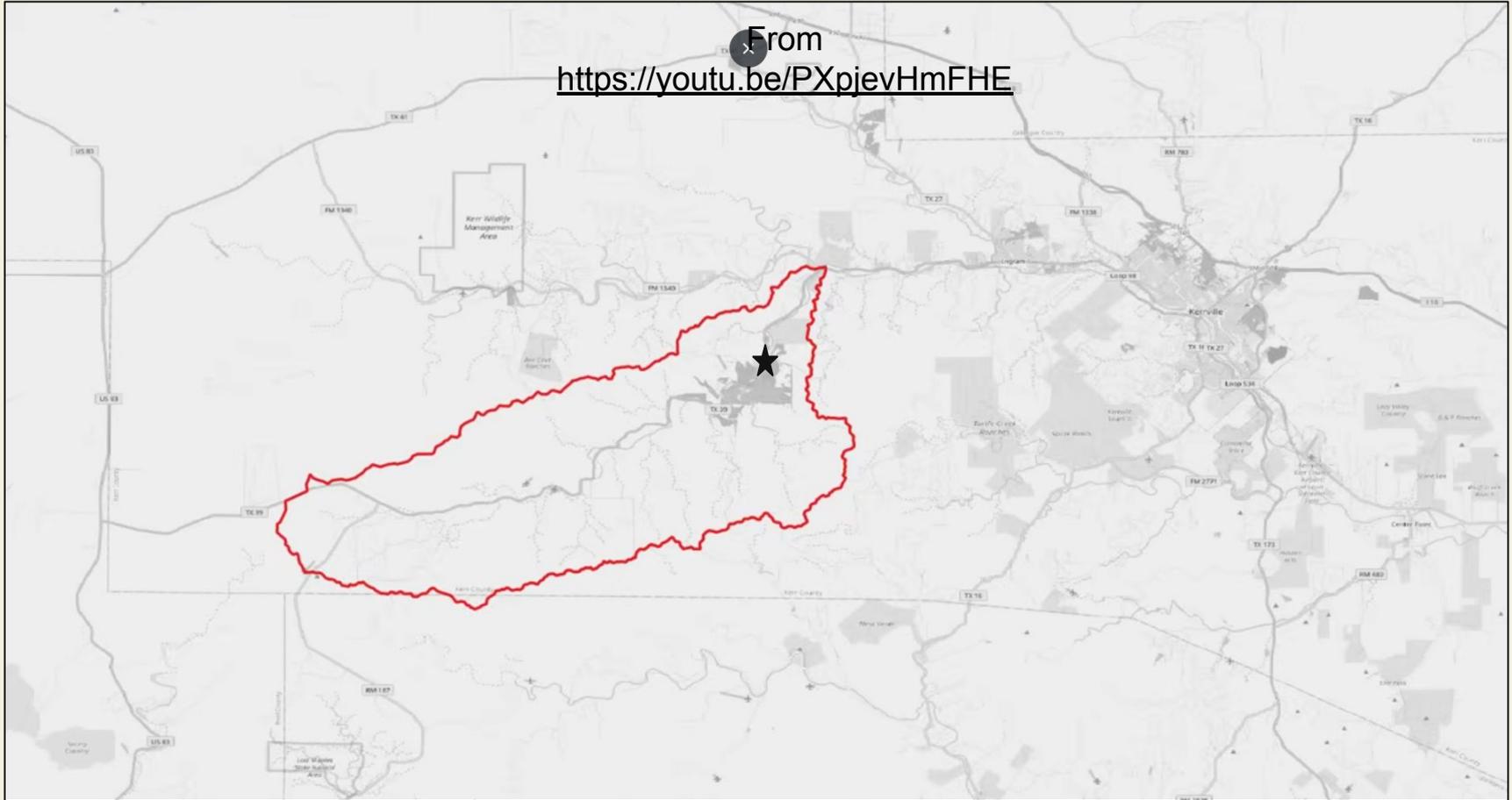
Forensic Analysis: July 4th 2025 Flood at Camp Mystic - Texas Hill Country Disaster Explained

From

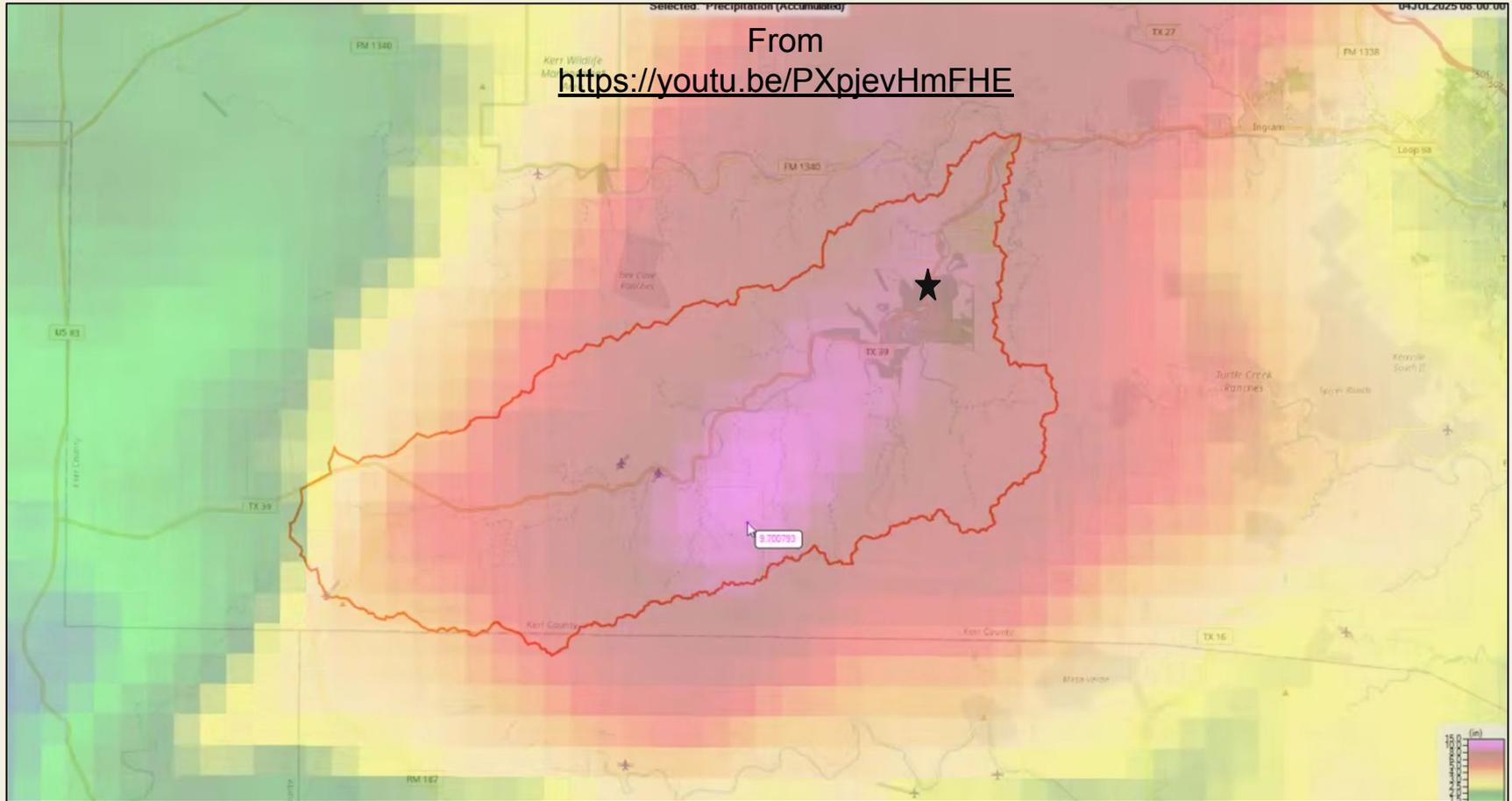
<https://youtu.be/PXpjevHmFHE>



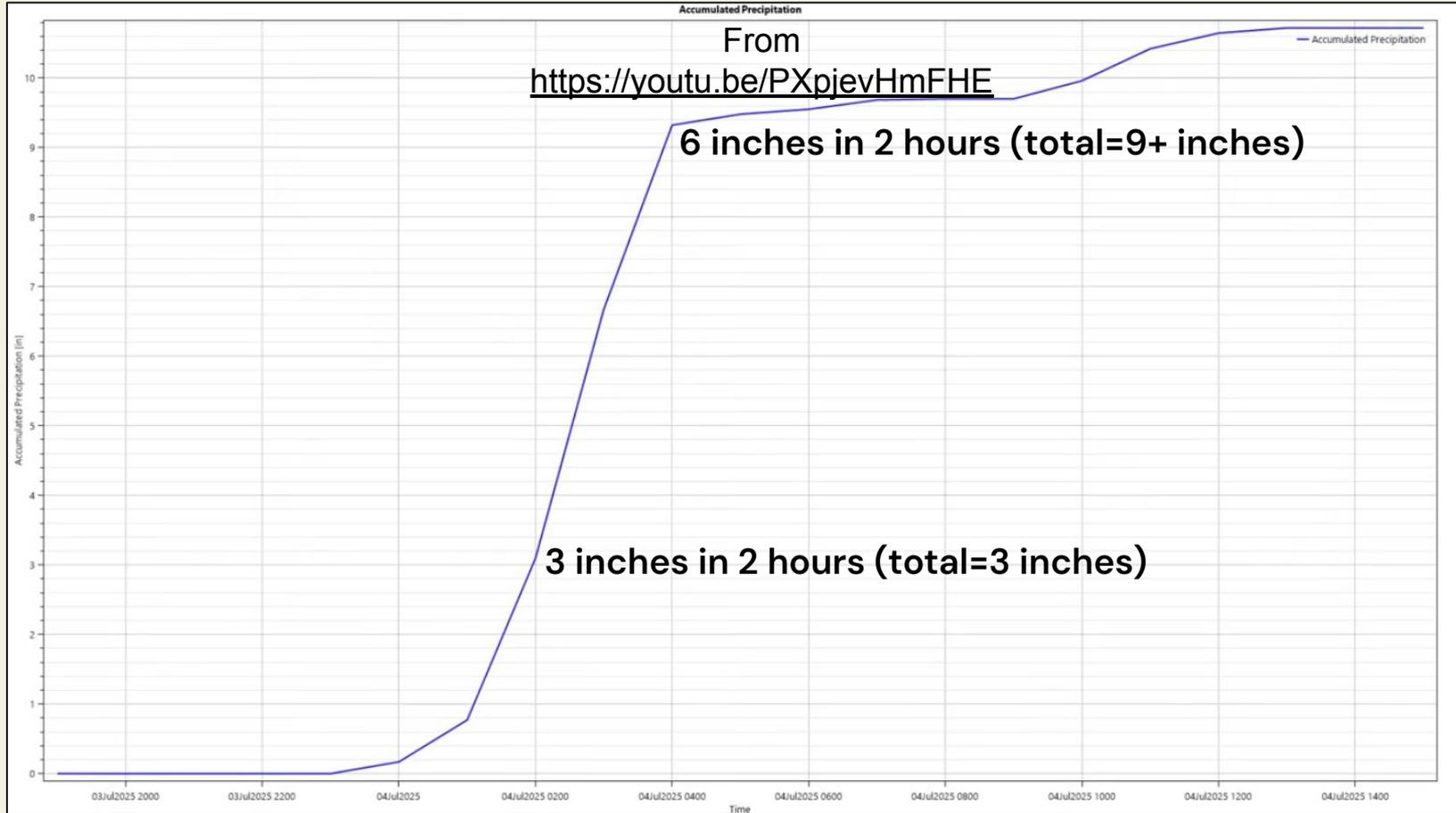
2025 Memory #9... Texas Tragedy on the Guadalupe River



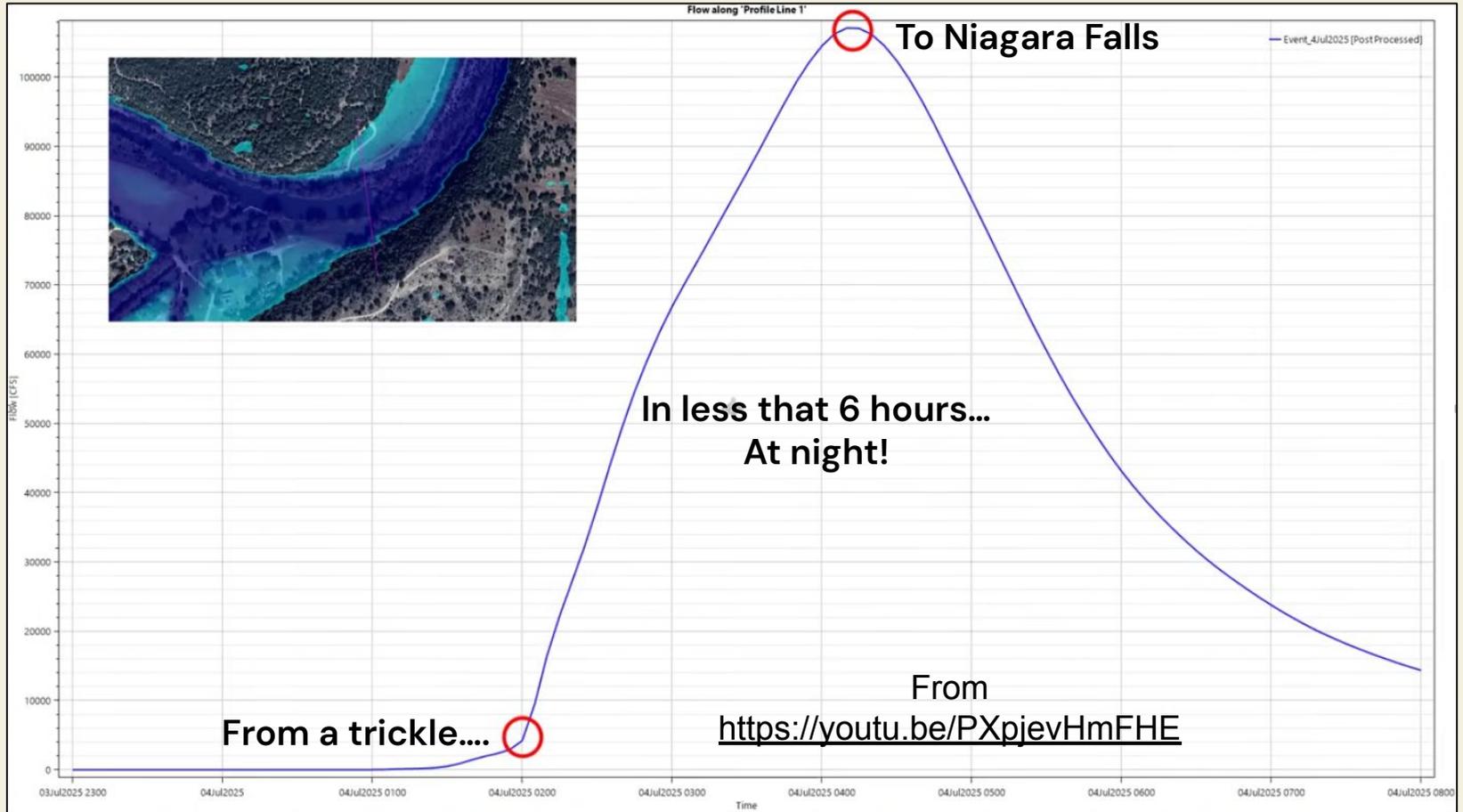
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2025 Memory #9... Texas Tragedy on the Guadalupe River

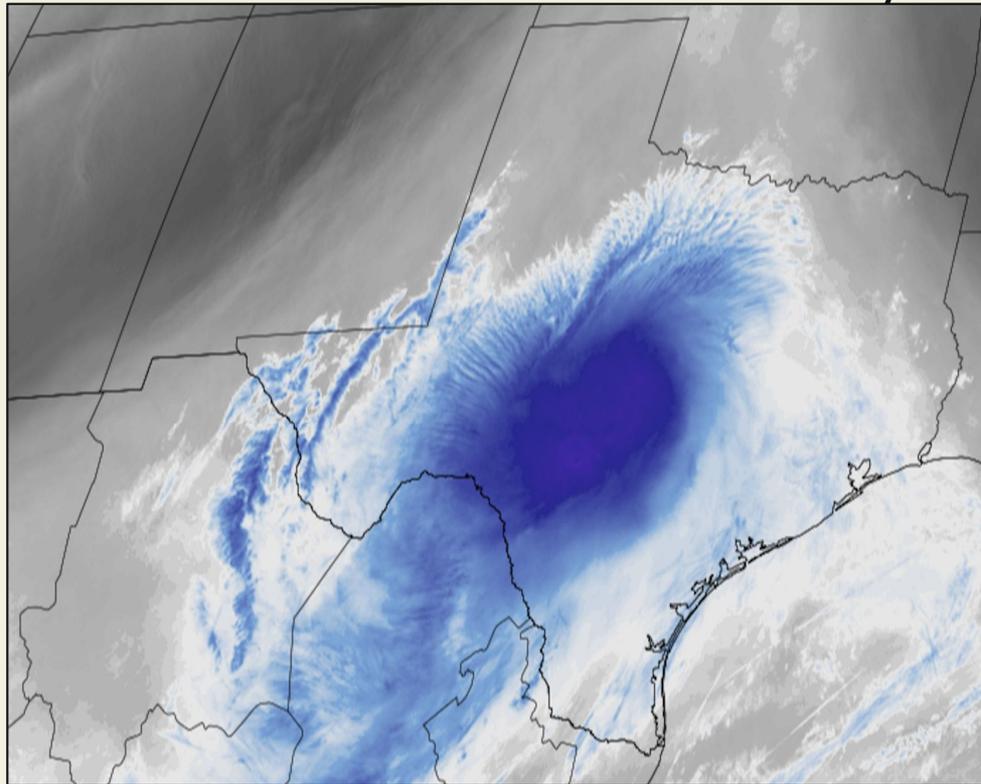


2025 Memory #9... Texas Tragedy on the Guadalupe River

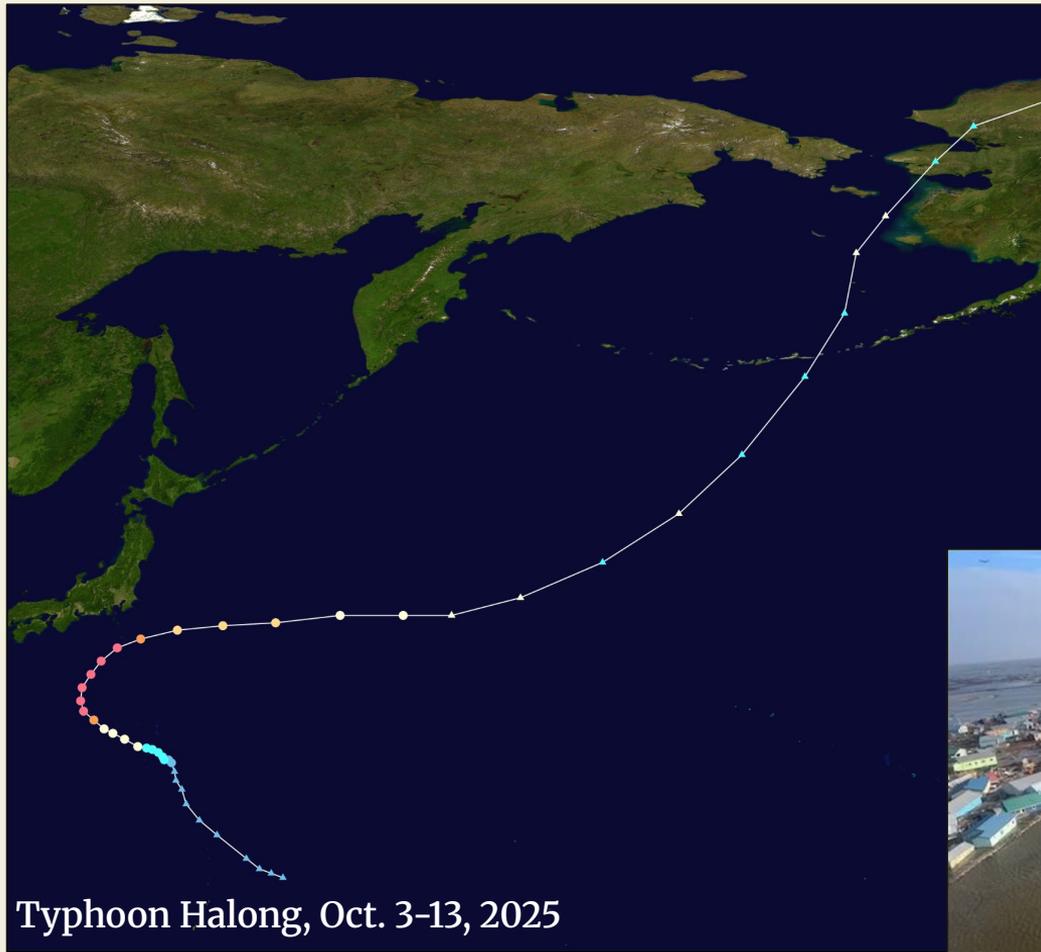


2025 Memory #9... Texas Tragedy on the Guadalupe River

July 4, 2025



2025 Memory #10... October 12 Alaskan Storm Surge



2025 Memory #10... October 12 Alaskan Storm Surge

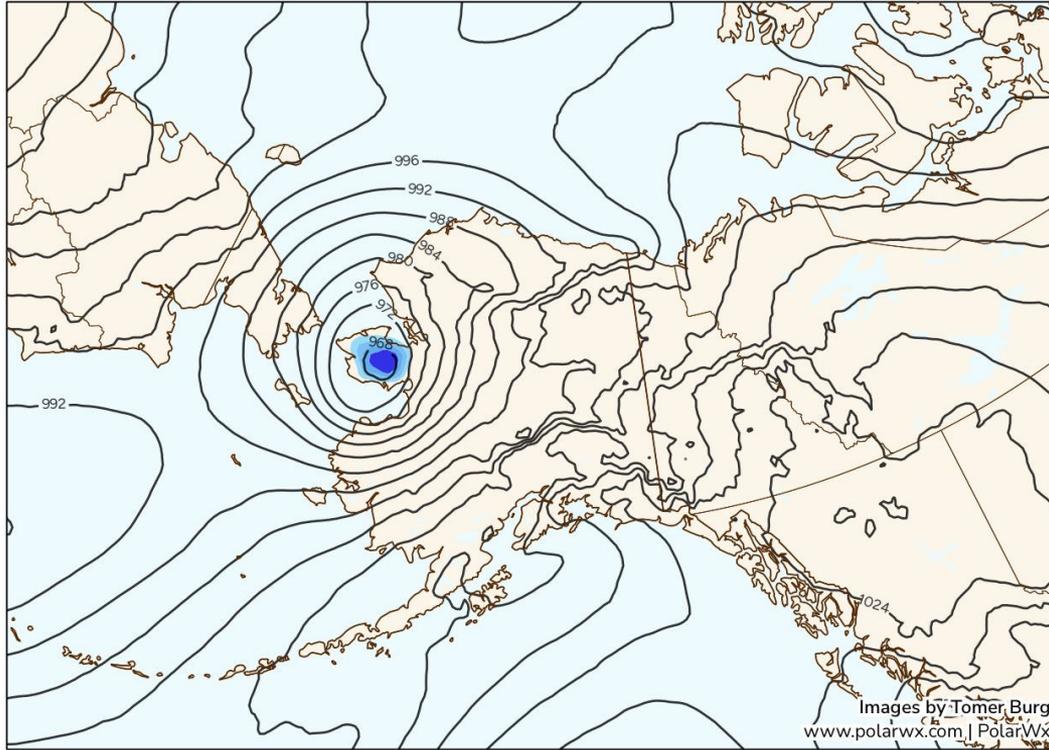


2025 Memory #10... October 12 Alaskan Storm Surge

0.25° ECMWF • MSLP vs. Monthly Record (ERA5, 1950-2024) (hPa)

Init: 1200 UTC Sun 12 Oct 2025 | Hour: [6] | Valid: 1800 UTC Sun 12 Oct 2025

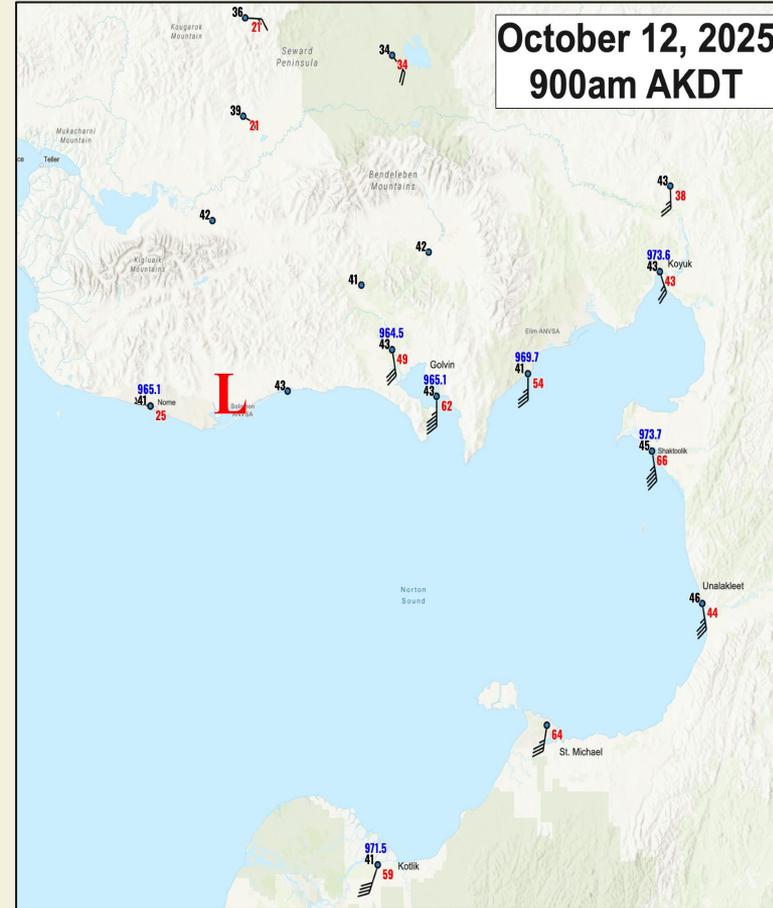
Contour: MSLP



MSLP Record



October 12, 2025
900am AKDT

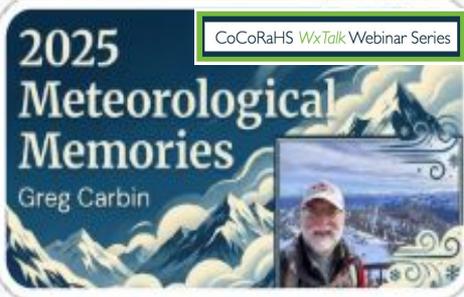


2025 Meteorological Memories

2025 Meteorological Memories

Greg Carbin

CoCoRaHS WxTalk Webinar Series



2025 Memory #1... Early January California Conflagration!



2025 Memory #2... January 20-22 Gulf Coast Blizzard



2025 Memory #3... Passing of a Modern Meteorology Giant

Charles A. Doswell III (1948-2024)



2025 Memory #4... A New Age of Science Skepticism?

Attacks on Science! Loss of gov integrity, Jobs, Obs., & RA0BS



2025 Memory #5... Mid-March Severe Weather Outbreak



2025 Memory #6... Late-March South Texas Flooding Rains

Extreme Rainfall Totals across South Texas in March 27-28, 2025



2025 Memory #7... Mid-April Rain in the Mid-South



2025 Memory #8... Mid-May Severe Storms/Tornadoes



2025 Memory #9... Texas Tragedy on the Guadalupe River



2025 Memory #10... October 12 Alaskan Storm Surge

Typhoon Malina, Oct 1-01, 2025

