Storm Data and Unusual Weather Phenomena - August 2021

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
OKLAHOMA, Panhandle				
TEXAS COUNTY 10.5 WNW HOUGH [36.92, -	101.75] 08/07/21 03:35 CST		0	Thunderstorm Wind (MG 52 kt)
	08/07/21 03:35 CST		0	Source: Mesonet
CIMARRON COUNTY 2.1 NNE STURGIS [36.3				
	08/07/21 16:35 CST		0	Hail (0.88 in)
	08/07/21 16:35 CST		0	Source: Emergency Manager

The county Emergency Manager ran into accumulating hail that was a couple inches deep and completely covering the ground. The largest hail stone was estimated to be around the size of nickels. However, this was from inside the car.

A strong upper level disturbance moved over the Oklahoma and Texas Panhandles causing thunderstorms to form. These thunderstorms moved from west to east with the greatest coverage occurring across the northern combined Panhandles. Moderate instability and weak wind shear were sufficient to support hail upwards of an inch and few severe wind gusts up to 60-70 mph in a few storms.

BEAVER COUNTY 0.7 S ELM	WOOD [36.61, -100.52]			
	08/21/21 16:10 CST	0	Hail (1.00 in)	
	08/21/21 16:10 CST	0	Source: Emergency Manager	
BEAVER COUNTY 2.8 N ELM	WOOD [36.66, -100.52]			
	08/21/21 16:25 CST	0	Hail (1.50 in)	
	08/21/21 16:25 CST	0	Source: Emergency Manager	
BEAVER COUNTY 1.5 NNW E	OYD [36.72, -100.83]			
	08/21/21 16:55 CST	0	Hail (1.75 in)	
	08/21/21 16:55 CST	0	Source: Emergency Manager	

A stationary front extended from a low near Amarillo east northeast to just south of Canadian, TX in the afternoon. The lower levels of the atmosphere were moistening from southeast surface winds into the stationary front and the edge of the southwest United States monsoon moisture plume was also present across the area. Weak to moderate instability was found along and behind the front along with weak wind shear which was greatest in the far northern Panhandles and into Kansas. Thunderstorms initially developed near Amarillo around 2 pm as a weak upper level disturbance passed through the area. These storms were slow-moving and they were interacting with outflow boundaries. Some severe storms trained along and outflow boundary collision across the western side of Amarillo causing flooding. In addition, a couple of storms with large hail (up to 2 inches in diameter) moved northward across Lipscomb and Beaver Counties during the late afternoon/early evening where the better dynamics and wind shear were located.

TEXAS, North Panhandle

HARTLEY COUNTY 8.1 ESE	DALHART [36.04, -102.38]		
	08/07/21 17:52 CST	0	Hail (0.88 in)
	08/07/21 17:52 CST	0	Source: Trained Spotter
Wind driven hail chipped the win	dshield of the vehicle the storm chaser was driving wh	nile heading west on FM	281.
POTTER COUNTY (AMA)AM	ARILLO INTL A [35.22101.72]		
POTTER COUNTY (AMA)AM/	ARILLO INTL A [35.22, -101.72] 08/07/21 18:27 CST	0	Thunderstorm Wind (MG 50 kt)
POTTER COUNTY (AMA)AM/		0 0	Thunderstorm Wind (MG 50 kt) Source: ASOS
POTTER COUNTY (AMA)AM/ OCHILTREE COUNTY WAKA	08/07/21 18:27 CST 08/07/21 18:27 CST		
	08/07/21 18:27 CST 08/07/21 18:27 CST		

HUTCHINSON COUNTY --- 5.6 E BORGER [35.67, -101.28]

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Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
	08/07/21 21:39 CST		0	Thunderstorm Wind (MG 61 kt)
	08/07/21 21:39 CST		0	Source: Mesonet
so had a 66 mph wind gust measured at th	nis mesonet at 2136 lst as well.			
OBERTS COUNTY 11.3 W CODMAN [3	5.63, -100.95]			
	08/07/21 22:30 CST		0	Hail (1.00 in)
	08/07/21 22:30 CST		0	Source: Public
his report was received over social media.	The hail lasted about 20 seconds.			
A strong upper level disturbance moved or hunderstorms moved from west to east w nstability and weak wind shear were suffic storms.	ith the greatest coverage occurri	ng across the nor	thern combined Pa	anhandles. Moderate
RMSTRONG COUNTY 15.2 SSE GOOD	•			
	08/12/21 16:38 CST		0	Thunderstorm Wind (MG 54 kt)
	08/12/21 16:38 CST		0	Source: Mesonet
OBERTS COUNTY 16.3 W CODMAN [3	08/16/21 12:08 CST		0	Thunderstorm Wind (EG 52 kt)
	08/16/21 12:08 CST		0	Source: Trained Spotter
Spotter estimates a 60 mph gust with trees			0	Source: Trained Spotter
	bending nearly 90 degrees.		0	Thunderstorm Wind (MG 50 kt)
· · · ·	bending nearly 90 degrees. 35.62, -101.00]			
RAY COUNTY PAMPA LEFORS ARPT [bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST		0	Thunderstorm Wind (MG 50 kt)
RAY COUNTY PAMPA LEFORS ARPT [bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST		0	Thunderstorm Wind (MG 50 kt)
RAY COUNTY PAMPA LEFORS ARPT [bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04]		0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS
GRAY COUNTY PAMPA LEFORS ARPT [GRAY COUNTY 2.2 NE KINGS MILL [35.4	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST	ill area.	0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in)
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, al	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17]	ill area.	0 0 0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, al	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST	ill area.	0 0 0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt)
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, al	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17]	ill area.	0 0 0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, ale ARSON COUNTY 0.6 E WHITE DEER [3	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST		0 0 0 0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, alc ARSON COUNTY 0.6 E WHITE DEER [3 potter reported a large air conditioning unit	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme		0 0 0 0 0 AC unit was moun	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof.
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, ale ARSON COUNTY 0.6 E WHITE DEER [3 potter reported a large air conditioning unit	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme 7, -101.06] 08/16/21 14:03 CST		0 0 0 0 0 AC unit was moun	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof. Thunderstorm Wind (EG 61 kt)
RAY COUNTY PAMPA LEFORS ARPT [RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, alc ARSON COUNTY 0.6 E WHITE DEER [3 potter reported a large air conditioning unit	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme		0 0 0 0 0 AC unit was moun	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof.
GRAY COUNTY PAMPA LEFORS ARPT [GRAY COUNTY 2.2 NE KINGS MILL [35.4 The local Sheriff's office reported the hail, all CARSON COUNTY 0.6 E WHITE DEER [3 Spotter reported a large air conditioning unit GRAY COUNTY 7.6 S KINGS MILL [35.37	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme 7, -101.06] 08/16/21 14:03 CST 08/16/21 14:03 CST	entary School. The	0 0 0 0 0 AC unit was moun	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof. Thunderstorm Wind (EG 61 kt)
GRAY COUNTY PAMPA LEFORS ARPT [GRAY COUNTY 2.2 NE KINGS MILL [35.4 The local Sheriff's office reported the hail, all CARSON COUNTY 0.6 E WHITE DEER [Spotter reported a large air conditioning unit GRAY COUNTY 7.6 S KINGS MILL [35.37 Spotter reported large trees limbs blown dov	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme 7, -101.06] 08/16/21 14:03 CST 08/16/21 14:03 CST wn that were 1 to 3 inches in diame	entary School. The	0 0 0 0 0 0 AC unit was moun 0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof. Thunderstorm Wind (EG 61 kt) Source: Trained Spotter
Spotter estimates a 60 mph gust with trees GRAY COUNTY PAMPA LEFORS ARPT [GRAY COUNTY 2.2 NE KINGS MILL [35.4 The local Sheriff's office reported the hail, all CARSON COUNTY 0.6 E WHITE DEER [3 Spotter reported a large air conditioning unit GRAY COUNTY 7.6 S KINGS MILL [35.37 Spotter reported large trees limbs blown dov GRAY COUNTY 1.2 NW KINGS MILL [35.47, -101.09]	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme 7, -101.06] 08/16/21 14:03 CST 08/16/21 14:03 CST wn that were 1 to 3 inches in diame 49, -101.09], 2.6 ENE KINGS MILL	entary School. The	0 0 0 0 0 0 AC unit was moun 0 0 2.5 E KINGS MILL	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof. Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof. [35.47, -101.03], 1.0 WSW KINGS
RAY COUNTY 2.2 NE KINGS MILL [35.4 he local Sheriff's office reported the hail, ale carson COUNTY 0.6 E WHITE DEER [3 potter reported a large air conditioning unit RAY COUNTY 7.6 S KINGS MILL [35.37 potter reported large trees limbs blown dov	bending nearly 90 degrees. 35.62, -101.00] 08/16/21 12:57 CST 08/16/21 12:57 CST 50, -101.04] 08/16/21 13:37 CST 08/16/21 13:37 CST ong with heavy rain in the Kingsmi 35.43, -101.17] 08/16/21 13:58 CST 08/16/21 13:58 CST blown off of the White Deer Eleme 7, -101.06] 08/16/21 14:03 CST 08/16/21 14:03 CST wn that were 1 to 3 inches in diame	entary School. The	0 0 0 0 0 0 AC unit was moun 0 0	Thunderstorm Wind (MG 50 kt) Source: AWOS Hail (1.00 in) Source: Law Enforcement Thunderstorm Wind (EG 61 kt) Source: Trained Spotter ted on the roof. Thunderstorm Wind (EG 61 kt) Source: Trained Spotter

An upper level low was centered in central Oklahoma within a trough that extended from the Great Lakes to West Texas. The trough combined with abundant monsoonal moisture, modest instability, and wind shear led to scattered strong to severe thunderstorms that developed in the Texas Panhandle during the afternoon hours. Some of these storms produced hail up to 1 inch in diameter and some minor nuisance flooding. However, strong to at times damaging damaging winds were the main impact from these storms which

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details
damaged trees and tops of a few buildings.				
POTTER COUNTY 6.5 NNW AMARILLO [: AMARILLO [35.25, -101.87]	35.28, -101.87], 6.0 NNE AMARILI	-O [35.28, -101.80], 3.6 NNE AMARIL	LO [35.25, -101.80], 4.4 NW
	08/21/21 14:34 CST		20K	Flood (due to Heavy Rain)
	08/21/21 14:34 CST		0	Source: Trained Spotter
Trained spotter had reported street/road floo	oding, along with road closures and	l vehicles strande	d.	
RANDALL COUNTY 8.9 WNW TIMBERCF	REEK CANYON [35.11, -101.96]			
	08/21/21 14:44 CST		0	Hail (1.25 in)
	08/21/21 14:44 CST		0	Source: Trained Spotter
HUTCHINSON COUNTY 5.5 WSW BORGI				
	08/21/21 14:50 CST		0	Hail (0.88 in)
	08/21/21 14:50 CST		0	Source: Trained Spotter
RANDALL COUNTY 6.3 WSW AMARILLO			0	Hail (1.00 in)
	08/21/21 14:50 CST		0	Hail (1.00 in)
	08/21/21 14:50 CST		0	Source: Trained Spotter
RANDALL COUNTY 7.7 NW TIMBERCRE			001/	
	08/21/21 14:54 CST 08/22/21 14:56 CST		60K 0	Hail (1.25 in) Source: NWS Employee
POTTER COUNTY 4.0 W AMARILLO [35.2	20, -101.89] 08/21/21 14:55 CST		0	Thunderstorm Wind (EG 65 kt)
	08/21/21 14:55 CST		0	Source: Public
Received report of widespread tree damage				
[35.19, -101.91]				33.13, -101.00, 3.2 W AMARIELO
	08/21/21 15:09 CST		0	Flood (due to Heavy Rain)
	08/21/21 15:09 CST		0	Source: Storm Chaser
	e at I-40 and Bell, with traffic at a	standstill in the w	est bound lane.	
Heavy flooding was reported under the bridge				
RANDALL COUNTY 7.8 WSW AMARILLO) [35.17, -101.95], 4.9 WSW AMAR	ILLO [35.17, -101	.89], 6.6 SW AMAR	RILLO [35.13, -101.89], 9.0 SW
RANDALL COUNTY 7.8 WSW AMARILLO) [35.17, -101.95], 4.9 WSW AMAR 08/21/21 15:36 CST	ILLO [35.17, -101	.89], 6.6 SW AMAR 50K	RILLO [35.13, -101.89], 9.0 SW Flash Flood (due to Heavy Rain)
RANDALL COUNTY 7.8 WSW AMARILLO		ILLO [35.17, -101	-	
RANDALL COUNTY 7.8 WSW AMARILLO AMARILLO [35.13, -101.95] Road closed from 45th to Hillside on Coulter	08/21/21 15:36 CST 08/21/21 16:20 CST with 3 to 4 feet of water. Firefighte	ers were helping n	50K 0 notorist escape fror	Flash Flood (due to Heavy Rain) Source: Trained Spotter n flooding and stalled vehicles. An
RANDALL COUNTY 7.8 WSW AMARILLO AMARILLO [35.13, -101.95] Road closed from 45th to Hillside on Coulter additional report was submitted by the public	08/21/21 15:36 CST 08/21/21 16:20 CST with 3 to 4 feet of water. Firefighte for water filling up West Hill Park v .45, -100.54], 1.0 NNW BOOKER [ers were helping n with some roads a	50K 0 notorist escape fror around the park im	Flash Flood (due to Heavy Rain) Source: Trained Spotter n flooding and stalled vehicles. An passable .
RANDALL COUNTY 7.8 WSW AMARILLO AMARILLO [35.13, -101.95] Road closed from 45th to Hillside on Coulter additional report was submitted by the public	08/21/21 15:36 CST 08/21/21 16:20 CST with 3 to 4 feet of water. Firefighte for water filling up West Hill Park v .45, -100.54], 1.0 NNW BOOKER [08/21/21 15:44 CST	ers were helping n with some roads a	50K 0 notorist escape fror around the park im	Flash Flood (due to Heavy Rain) Source: Trained Spotter n flooding and stalled vehicles. An passable . Hail (2.00 in)
Heavy flooding was reported under the bridge RANDALL COUNTY 7.8 WSW AMARILLO AMARILLO [35.13, -101.95] Road closed from 45th to Hillside on Coulter additional report was submitted by the public LIPSCOMB COUNTY 0.6 W BOOKER [36	08/21/21 15:36 CST 08/21/21 16:20 CST with 3 to 4 feet of water. Firefighte for water filling up West Hill Park v .45, -100.54], 1.0 NNW BOOKER [ers were helping n with some roads a	50K 0 notorist escape fror around the park im	Flash Flood (due to Heavy Rain) Source: Trained Spotter n flooding and stalled vehicles. An passable .

the atmosphere were moistening from southeast surface winds into the stationary front and the edge of the southwest United States monsoon moisture plume was also present across the area. Weak to moderate instability was found along and behind the front along with weak wind shear which was greatest in the far northern Panhandles and into Kansas. Thunderstorms initially developed near Amarillo around 2 pm as a weak upper level disturbance passed through the area. These storms were slow-moving and they were interacting with outflow boundaries. Some severe storms trained along and outflow boundary collision across the western side of Amarillo causing flooding. In addition, a couple of storms with large hail (up to 2 inches in diameter) moved northward across Lipscomb

Storm Data and Unusual Weather Phenomena - August 2021						
Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details		
and Beaver Counties during the	ate afternoon/early evening where the bet	ter dynamics and	wind shear were I	ocated.		
HUTCHINSON COUNTY 0.6 W	FRITCH [35.63, -101.61]					
	08/29/21 14:22 CST		0.10M	Thunderstorm Wind (EG 65 kt)		
	08/29/21 14:22 CST		0	Source: Public		
southwest side of Fritch. Time of e	ocial media showed considerable damage to event was estimated based on radar and loc MARILLO [35.17, -101.93], 3.9 SW AMARI	al mesonet.	-			
AMARILLO [35.14, -101.93]	08/29/21 17:15 CST		0	Flood (due to Heavy Rain)		
	08/29/21 17:15 CST		0	Source: Trained Spotter		
Considerable street flooding along	Bell St., between 45th and Hillside. Severa	al inches of flowing	water on sides of	roads, with a few inches in the middle.		

On the morning of the 29th a surface low and trough across eastern Colorado that moved south into the combined Panhandles during the afternoon. Convergence associated with these features led to thunderstorm formation in the afternoon hours. This boundary created at least one severe thunderstorm that produced damaging winds early on while another created some nuisance flooding 3 hours later.