## Storm Data and Unusual Weather Phenomena - October 2013

Location	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details	
OKLAHOMA, Panhandle					
(OR-2001) CIMARRON, (OR-2002) 127	10/01/13 00:00 CST		0	Drought	
	10/31/13 23:59 CST		8M	Diotgin	
The month of October saw few precip near steady state of drought condition normal) for the month of October. The portions of Texas County remain in the Severe Drought (D2) rating.	itation events and the precipitation co ns across the Oklahoma Panhandle. G e U.S. Drought Monitor showed near si ne Extreme (D3) Drought rating, while t	verage was much uymon recorded teady state condit the remainder of t	n more isolated tha 1.00 inch of precip tions for the month he Oklahoma Pani	an September. This led to bitation (0.57 inch below n of October. Only handle falls into the	
October brought to an end the growin decent summer crop yields from acro isolated precipitation events has led t from 50 to 150 percent of normal. The rated at Near Normal. Water watches water restrictions have been enacted.	g and wet season across the Oklahon ss the Panhandle from both irrigated a o upper soil zones degrading to 10 to Palmer Drought Severity Index showe remain in effect for several public wat	na Panhandle. So and some dryland 40 percent of nor ed slight improver er systems throu	me reports have b l fields. However, a mal. Deeper soil z nent with the Okla gh October while v	een received stating a drier October and more ones continue to range homa Panhandle now voluntary to mandatory	
Economic losses due to the drought t were predominately the result of delay and supplemental feed for cattle in pa	hrough October were estimated near yed growth of corn and cotton, margin istures and rangeland.	\$2 million (D2)/\$5 al supplemental v	million (D3)/\$10 m watering, reduction	illion (D4) a county, and n of cattle herd sizes,	
(OK-Z001) CIMARRON					
	10/06/13 04:00 CST		0	Cold/Wind Chill	
	10/06/13 06:00 CST		0		
Cimarron County experienced a freeze sensitive vegetation during the growin 5 miles southeast of Kenton (Cimarron (Cimarron County). After sunrise on the	e during the early morning hours of th ng season. Overnight low temperature n County) to 30 degrees at the Oklaho he 6th, temperatures quickly warmed a	e 6th. These subf es ranged from 27 ma Mesonet site 3 above freezing by	reezing temperatu degrees at the Ok 3 miles south-sout 6:00 AM CST.	res threatened Iahoma Mesonet site at Iheast of Boise City	
(OK-Z001) CIMARRON	10/10/12 16·20 CST		0	High Wind (MAX 59 kt)	
	10/10/13 16:20 CST		0	High Wind (MAX 58 Kt)	
A combination of factors led to a brief low level jet set up across the Oklaho southeastern Colorado which tighten Mexico and into Cimarron County, the surface pressure gradient to produce (Cimarron County) reported non-thun The high wind gust potential ended as	f window of high wind gusts in Cimarr ma Panhandle during the evening hou ed the surface pressure gradient acros e additional downward motion below th high wind gusts at the surface. The O derstorm wind gusts of 65 mph at 5:20 s the line of virga showers moved into	on County during urs as a surface lo ss the county. As hese storms comi klahoma Mesonei ) PM CST, 67 mph the central Oklah	the evening hours w pressure syster virga showers mo bined with the low t site 5 miles south a at 5:25 PM CST, a noma Panhandle.	s of the 10th. A 60 mph n moved into ved out of eastern New level jet and tight neast of Kenton and 58 mph at 5:30 PM CST.	
TEXAS COUNTY 1.7 E GOODWELL	[36.60, -101.60]				
	10/10/13 19:00 CST		0	Thunderstorm Wind (MG 62 kt)	
	10/10/13 19:01 CST		0	Source: Mesonet	
An embedded thunderstorm within an e produced a 71 mph downburst 2 miles downburst. After producing this downbu of the 10th.	eastward moving line of thunderstorms b east of Goodwell (Texas County). The C urst, the nocturnal inversion strengthene	priefly intensified w Dklahoma mesone d sufficiently to pro	hile moving across t site 2 miles east c event any further d	the Oklahoma Panhandle. This storm of Goodwell was able to measure this ownbursts during the evening hours	
A line of thunderstorms developed ov of the 10th. The additional low level for access to elevated instability allowed able to produce a 71 mph downburst i	er the central Oklahoma Panhandle al orcing provided by the cold front allow embedded storms within the line to b in Texas County. After producing this	ong an eastward red the line to tap riefly reach seven downburst the no	moving cold front into marginal elev e levels. One such octurnal inversion	during the evening hours ated instability. The embedded storm was strengthened which	

prevented any further downburst during the evening hours of the 10th.

(OK-Z003) BEAVER

10/17/13 03:00 CST 10/17/13 08:00 CST

0

0

Cold/Wind Chill

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Beaver County experienced a freez vegetation during the growing seas After sunrise on the 17th, temperat	ze during the early morning hours of the son. Overnight low temperatures droppe tures quickly warmed above freezing by a	17th. These subfr d to 31 degrees ad 8:00 AM CST.	eezing temperature cross the city of Be	es threatened sensitive eaver (Beaver County).	
(OK-Z001) CIMARRON, (OK-Z002)	TEXAS, (OK-Z003) BEAVER				
	10/18/13 20:30 CST		0	Cold/Wind Chill	
	10/19/13 08:30 CST		0		
A cold front that moved through th during the early evening hours of t sensitive vegetation during the gro near Kenton (Cimarron County) to temperatures quickly warmed above	ee Oklahoma Panhandle during the daylig the 18th and persist into the morning hou owing season. Overnight low temperature 32 degrees at the Oklahoma Mesonet site ve freezing by 8:30 AM CST.	ght hours of the 18 Irs of the 19th. Th es ranged from 25 e near Slapout (Be	8th allowed temper nese subfreezing to degrees at the Ok eaver County). Afte	ratures to reach freezing emperatures threatened dahoma Mesonet site er sunrise on the 19th,	
(OK-Z002) TEXAS. (OK-Z003) BEAV	/ER				
	10/25/13 05:00 CST		0	Cold/Wind Chill	
	10/25/13 08:00 CST		0		
season. Overnight low temperature temperatures quickly warmed abov	es dropped to 32 degrees across Texas a ve freezing by 8:00 AM CST.	nd Beaver Counti	es. After sunrise o	n the 17th,	
BEAVER COUNTY 0.7 3 BEAVE	10/28/13 22:00 CST		0	Hail (1.75 in)	
	10/28/13 22:01 CST		0	Source: Emergency Manager	
A cluster of thunderstorms moved ov Manager reported golf ball size hail western Oklahoma before the midnig BEAVER COUNTY 9.4 E FORGA	ver the city of Beaver during the late night l (1.75 inches) at the Sheriff's Office in town ght hour of the 29th. 	hours of the 28th. <sup>1</sup> . The thunderstorn	While over the city, ns stalled over the o	the Beaver County Emergency city for two hours before moving into	
	10/28/13 23:05 CST		0	Thunderstorm Wind (EG 61 kt)	
	10/28/13 23:06 CST		0	Source: Public	
A cluster of thunderstorms moved or member of the public reported a 70 the vehicle on the wet roadway. By weather across Beaver County to ar	ver eastern Beaver County during the late mph downburst 9 miles west of Knowles. T 11:30 PM CST, the cluster of thunderstorm n end.	night hours of the : The downburst hit h is moved into west	28th. As the cluster his vehicle which ca ern Oklahoma whic	moved towards western Oklahoma, a nused him to briefly lose control over ch brought the potential for severe	
A weak upper level shortwave initial These thunderstorms would move County. These thunderstorms inter environment. The storms were able extra downward drag caused by the severe weather was reported after	ated thunderstorms across the central To to the northeast into Beaver County and nsified over northeastern Beaver County e to produce golf ball size hail before ma le heavy rain produced a 70 mph thunder this gust.	exas Panhandle d merged into a mu upon gaining acc king a transition t storm wind gust s	uring the late even ulti-cellular structu cess to a more elev o a stationary hea shortly after the 11	ning hours of the 28th. The over eastern Beaver vated unstable vy rain producers. The PM CST. No further	
BEAVER COUNTY 0.2 WSW BEA -100.52]	AVER [36.82, -100.52], 0.2 ESE BEAVER [	36.82, -100.52], 0.7	7 S BEAVER [36.81	I, -100.52], 0.7 S BEAVER [36.81,	
	10/28/13 22:33 CST		0	Flash Flood (due to Heavy Rain)	
A cluster of thunderstorms stalled ov produce 1.55 inches of heavy rain w flash flooding across the city. The Bo office, and on Douglas Ave. This wa thunderstorms moved in western Ok	ver the city of Beaver (Beaver County) duri ith in a hour as reported by the KVII Schoo eaver County Ememrgency Manager repor is enough water to span the width of the ro dahoma.	ng the late night ho plnet site at the Be ted 6 to 8 inches o ad from curb to cu	o burs of the 28th. Th aver High School (E of fast flowing water rb of both roads. Th	ese thunderstorms were able to Beaver County). This heavy rain led to r on Avenue E in front of the Sheriff's his flash flooding quickly receded as	
A weak upper level shortwave initia These thunderstorms would move	ated thunderstorms across the central Te to the northeast into Beaver County and	exas Panhandle d merged into a mu	uring the late even ilti-cellular structu	iing nours of the 28th. re over eastern Beaver	

These thunderstorms would move to the northeast into Beaver County and merged into a multi-cellular structure over eastern Beaver County. These thunderstorms briefly intensified to severe levels over northeastern Beaver County before stalling and transitioning to a heavy rain producers. The heavy rain produced flash flooding across the town of Beaver as nearly 2 inches of rain was produced within one hour. The flash flooding persisted until thunderstorm activity moved into western Oklahoma around 11:30 PM CST.

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	Date/Time	Deaths & Injuries	Property & Crop Dmg	Event Type and Details	
TEXAS, North Panhandle					
(TY.7001) DALLAM (TY.7002) SHERMAN	(TY-7003) HANSEORD (TY-7006				
[TX-2007] BALLAN, (TX-2002) STILKNAN,	10/01/13 00:00 CST	) HARTELT, (IX-2)	0	Drought	
	10/31/13 23:59 CST		20M	U U	
The month of October saw few precipitation near steady state of drought conditions ac Drought rating while the western half of th Panhandle has dropped below Severe (D2) normal), Dalhart recorded 0.12 inch of precipiences below normal).	n events and the precipitation co ross the Texas Panhandle. Porti e Texas Panhandle remains at th Drought rating. Amarillo record cipitation (1.35 inches below nor	overage was much ons of the northwe he Severe (D2) Dro ed 0.17 inch of pre mal), and Borger n	more isolated that est Texas Panhand ught rating. The re- cipitation for the re- ecorded 0.26 inch	an September. This led to dle remain in Extreme (D3) emainder of the Texas month (1.49 inches below of precipitation (1.46	
October brought to an end the growing and of decent summer crop yields from across more isolated precipitation events has led range from 50 to 150 percent of normal. Th due to the impact from the long range drou Roberts, Hemphill, and Armstrong Countié	d wet season across the Texas F the Panhandle from both irrigat to upper soil zones degrading to the Palmer Drought Severity Index ught from the past three years. C is.	Panhandle. The Tex ed and some dryla o 10 to 40 percent & continues to rate countywide burn ba	kas A&M Agrilife F nd fields. Howeve of normal. Deeper the Texas Panhar ans continue to be	Program received reports r, a drier October and soil zones continue to ndle at Extreme Drought e supported in Moore,	
Reservoirs and stream flows across the m southern Texas Panhandle have dropped b capacity with Lake Meredith at zero percer voluntary to mandatory mild water restrict Economic losses due to the drought throu were predominately the result of delayed g and supplemental feed for cattle in pasture	ajority of the Panhandle have rep below normal. The reservoirs of i nt capacity. Water watches for se ions have been enacted. gh October were estimated near prowth of corn and cotton, margi es and rangeland.	mained at near nor Palo Duro and Gre everal public water \$2 million (D2)/\$5 nal supplemental v	mal flow, but som enbelt Lake are bo systems persiste million (D3)/\$10 m watering, reductio	e streams across the oth below 15 percent d through October while hillion (D4) a county, and n of cattle herd sizes,	
TX-Z006) HARTLEY					
	10/10/13 16:20 CST		0	High Wind (MAX 55 kt)	
	10/10/13 17:40 CST		0		
A combination of factors led to a brief wind level jet set up across the Texas Panhandl Colorado which tightened the surface pres into Hartley County, the additional downwa gradient to produce high wind gusts at the at 4:20 PM. High wind gust potential endec	dow of high wind gusts in Hartle e during the evening hours as a ssure gradient across the county ard motion below these storms o e surface. The Dalhart (Hartley Co I as the line of virga showers mo	y County during th surface low press v. As virga showers combined with the punty) ASOS report oved into the centra	e evening hours o ure system moved s moved out of eas low level jet and t ted a 63 mph non- al Texas Panhandl	of the 10th. A 60 mph low I into southeastern stern New Mexico and ight surface pressure -thunderstorm wind gust le.	
HANSFORD COUNTY 1.5 SSW GRUVER	[36.25, -101.41]				
	10/10/13 19:18 CST		0	I hunderstorm Wind (MG 51 kt)	
			0	oburce. Broadcast media	

produce a 59 mph downburst in Hansford County. After producing this downburst the nocturnal inversion strengthened which prevented any further downburst during the evening hours of the 10th.

(TX-Z001) DALLAM, (TX-Z006) HARTLEY							
	10/17/13 03:00 CST	0	Cold/Wind Chill				
	10/17/13 08:00 CST	0					

The northwest Texas Panhandle experienced a freeze during the early morning hours of the 17th. These subfreezing temperatures threatened sensitive vegetation during the growing season. Overnight low temperatures dropped to 31 degrees across the city of

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Dalhart (Dallam and Hartley Counties).	After sunrise on the 17th, temperate	ures quickly warm	ed above freezing	by 8:00 AM CST.	
(TX-Z001) DALLAM, (TX-Z002) SHERM	AN, (TX-Z003) HANSFORD, (TX-Z004		-Z005) LIPSCOMB	5, (TX-Z006) HARTLEY, (TX-Z007)	
MOURE, (1X-2006) HUTCHINSON, (1X-	(TX 2010) ROBERTS, (TX-2010) REMPRI	ILL, (1X-2011) OLL		(TX 7040) DONI EX	
(1X-2014) GRAT, (1X-2015) WHEELER	10/18/13 20:30 CST	RANDALL, (1X-201	0	Cold/Wind Chill	
	10/19/13 08:30 CST		0		
A cold front that moved through the Te	exas Panhandle during the daylight I	hours of the 18th a	llowed temperatu	res to reach freezing	
during the early evening hours of the f	8th and persist into the morning ho	urs of the 19th. Th	nese subfreezing t	emperatures threatened	
sensitive vegetation during the growin	g season. Overnight low temperatur	res ranged from 24	degrees at Heref	ord (Deaf Smith County)	
to 32 degrees at Wheeler (Wheeler Cou	unty). After sunrise on the 19th, temp	peratures quickly v	warmed above free	ezing by 8:30 AM CST.	
(TY 7003) HANSEORD (TY 7000) DOB					

(1X-2003) HANSFORD, (1X-2009) ROBERTS, (1X-2010) HEMPHILL, (1X-2019) DONLET		
10/25/13 05:00 CST	0	Cold/Wind Chill
10/25/13 08:00 CST	0	

A cold front that moved through the Texas Panhandle during the daylight hours of the 24th allowed temperatures to reach freezing during the early morning hours of the 25th. These subfreezing temperatures threatened sensitive vegetation during the growing season. Overnight low temperatures dropped to 32 degrees across multiple counties in the Texas Panhandle. After sunrise on the 17th, temperatures quickly warmed above freezing by 8:00 AM CST.