



West Texas Weather Modification Association

Monthly Operations Report

July 2023 Operations Report

The month of July contained 1 day of operations.

| Date | Flares | Counties seeded |
|--------------|--------------------|-------------------------|
| 7/1 | 29G+1H | Crockett, Reagan, Irion |
| TOTAL | 29G+1H | |
| | | |
| YTD | 561G+51.25H | |

July 2023 was certainly not as busy as May, and not even as busy as June. In fact, this was one of the least busiest summer months since 2011 with only 1 flight operation taking place on July 1st. The broad upper-level high pressure remained planted over much of Texas which kept a good portion of the state dry for the entirety of the month. Not only dry, but very hot, with streaks of 100°F+ plus conditions once again. Despite the lack of operations, that day did provide much needed rainfall as storms seeded in Crockett, Reagan, and Irion County drifted east into the eastern half of the target area with impacts felt across Schleicher, Sutton, and Tom Green County.

San Angelo recorded 0.86” of precipitation during the month which is 0.24” below the monthly average of 1.10”. This takes the year-to-date precipitation total to 8.95” which is 2.58” below the average of 11.53”. Meanwhile, the average temperature of 88.4°F was 3.6°F above normal with the warmest temperature of 110°F and the coolest temperature of 67°F. Further west, Midland continues to struggle with only 0.39” of precipitation during July taking the annual total to 1.79”, which is 5.82” below the average of 7.61”. Much like everywhere else, temperatures are warm with the monthly average temperature of 87.5°F, 3.1°F above average.

Looking ahead into August through October, El Nino has officially been declared. We are still in the lag period from the start of El Nino which is why we have yet to see the enhanced precipitation patterns we typically see with El Nino. The thinking is that late August into September, the area should start to see conditions become more favorable for rain chances especially as we begin to move into the transitional period where cold fronts become more abundant. CPC outlooks suggests that August will remain dry, but during the August-October period we could see equal chances of average precipitation, which would mean September and October could provide much needed rainfall.



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Monthly rain gauge measurements from nearest locations inside and out of the target area recorded either by the National Weather Service, Texas Tech University, Mesowest as well as CoCoRaHS.

July 2023 (Normal's of 1.62" from Midland to 1.10" in San Angelo)

| Crockett County | | Sterling County | | Area Average | |
|-------------------|------|---------------------|------|--------------------|------|
| Ozona 32SW | 1.08 | Sterling City (TTU) | 0.27 | 1.34 | |
| Escondido Draw | 0.15 | Irion County | | | |
| Ozona 19.6S | - | Mertzon (TTU) | 0.37 | Out of Target Area | |
| Ozona Airport | 0.16 | Mertzon (S) | - | Junction (Kimble) | 2.16 |
| Fort Lancaster | 2.18 | Barnhart | 0.34 | Abilene (Taylor) | 1.80 |
| Reagan County | | Tom Green | | Midland (Midland) | 0.33 |
| Big Lake (TTU) | 1.55 | Wall | 2.89 | St. Lawrence (GL) | 0.00 |
| Acton Ranch | - | San Angelo 7NW | 2.14 | Lomax (Howard) | 0.00 |
| Schleicher County | | Knickerbocker | 0.48 | Fort McKavett (MN) | 1.60 |
| Eldorado 0.2 | 0.91 | Carlsbad | 1.77 | McCamey (Upton) | 0.00 |
| Eldorado 22.6ENE | 3.80 | Miles | 2.00 | Menard (Menard) | 1.89 |
| Eldorado 14.5ENE | 3.24 | San Angelo (NWS) | 0.86 | | |
| Sutton County | | Christoval | 1.74 | | |
| Sonora | 0.82 | Water Valley | 0.90 | | |
| Sonora 23.9E | 0.42 | | | | |

Year to Date (Normal's of 7.61" from Midland to 11.53" in San Angelo)

| Crockett County | | Sterling County | | Area Average | |
|-------------------|-------|---------------------|-------|--------------------|-------|
| Ozona 32SW | 9.01 | Sterling City (TTU) | 8.39 | 8.67 | |
| Escondido Draw | 8.58 | Irion County | | | |
| Ozona 19.6S | - | Mertzon (TTU) | 10.99 | Out of Target Area | |
| Ozona Airport | 2.89 | Mertzon (S) | - | Junction (Kimble) | 8.78 |
| Fort Lancaster | 10.67 | Barnhart | 4.03 | Abilene (Taylor) | 15.73 |
| Reagan County | | Tom Green | | Midland (Midland) | 1.58 |
| Big Lake (TTU) | 4.47 | Wall | 10.68 | St. Lawrence (GL) | 6.00 |
| Acton Ranch | - | San Angelo 7NW | 13.91 | Lomax (Howard) | 7.07 |
| Schleicher County | | Knickerbocker | 12.76 | Fort McKavett (MN) | 11.08 |
| Eldorado 0.2 | 6.61 | Carlsbad | 10.45 | McCamey (Upton) | 3.59 |
| Eldorado 22.6ENE | 10.74 | Miles | 12.24 | Menard (Menard) | 9.31 |
| Eldorado 14.5ENE | 8.98 | San Angelo (NWS) | 8.95 | | |
| Sutton County | | Christoval | 8.98 | | |
| Sonora | 8.86 | Water Valley | 8.32 | | |
| Sonora 23.9E | 10.20 | | | | |