

Rio Grande Valley Spring 2022

Spring 2022 Weather Story for the Rio Grande Valley: From Drought and Wildfire to Flood and Wind, March to May Had It All

By Barry Goldsmith
Warning Coordination Meteorologist
NWS Brownsville/Rio Grande Valley



Clockwise, from upper left: Large wildfire in late March in Kenedy County; drought impacted fields in eastern Starr County in early April; wind damage at a *colonia* north of Monte Cristo Rd. north of McAllen; flooding near Rio Grande City on May 24th.

Summary

March 2022 across the Rio Grande Valley/Deep South Texas region began where February left off: Changeable weather from warm to chilly and back again, as ‘northerners’ surged across the region on the 7th and 11th, each coming with cool but dry air which continued the steady drying trend that began in February. Low humidity, gusty winds, and warming daytime temperatures allowed drought and dryness to spread from west to east across the region, with Severe to Extreme (Level 2 and 3) Drought reaching the Rio Grande Plains and Brush Country at the end of the month (Figure 1, below). Abundantly cured brush and grasses combined with the frequent wind and low humidity to ratchet up the threat for rapid to explosive wildfire growth and spread. Unfortunately, several wildfires did just that between March 24th and 31st, resulting in more than 20 thousand acres burned – primarily on the Norias and Encino Divisions of the King Ranch. March 30th was the “Day of the Wildfires” in south Texas, with more than 65 thousand acres burned – highlighted by the Borrega Wildfire on the Santa Gertrudis Section of the King Ranch mainly in Kleberg County, which burned more than 51 thousand acres alone.

The frequent dry fronts kept return moisture away, with monthly rainfall limited to light rains on the 7th.

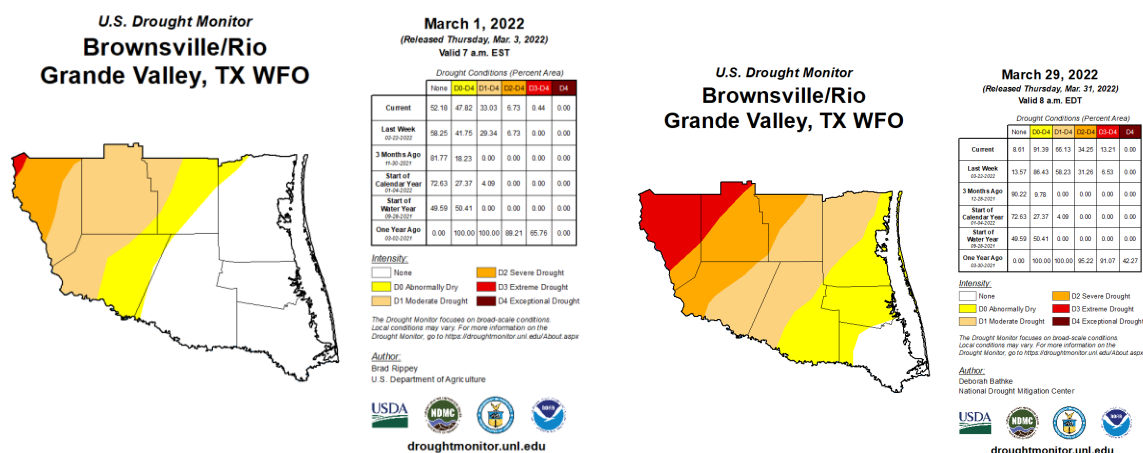


Figure 1. Drought Monitor for the NWS Brownsville/Rio Grande Valley region, on March 1 (left) and March 29 (right), showing progressive worsening spreading from west to east.

April picked up the dry beat, and was joined by increasing heat and drought. A few smaller, but still notable, wildfires during the first week of the month brought the seasonal total acreage burned in the Rio Grande Valley and Deep South Texas ranch country to more than 33 thousand acres. Two “heat spikes” brought new records to portions of the Valley, with McAllen soaring to 109°F on the 6th and 107°F on the 13th. Above average temperatures dominated the month as a “flat” 500 mb ridge built across northern Mexico for most of the period. Rain-free conditions combined with the heat spikes and dry to very dry conditions allowed drought to worsen across the region, with Exceptional (Level 4 on the 4 point scale) Drought reaching the Rio Grande Plains/western Brush Country of Zapata and Jim Hogg, with Extreme Drought spreading across the remainder of the Brush Country. Moderate to Severe Drought spread across the rest of the Valley, save for most of Cameron and eastern Willacy.

Just as drought was poised to reach spring levels last seen, area-wide, in the early 2010s, the first of two “one-off” rain events allowed for notable improvements. A rare (for 2022) upper level trough combined with a weak surface “cold” front late on the 25th and early on the 26th to produce thunderstorm clusters across the mid/upper Valley and ranch country, leaving a pocket of 2 to 5+” from eastern Starr through Brooks County, and fairly widespread 1 to 2” elsewhere, except along and east of U.S. 77/IH-69C near the coast, as well as western Zapata County (Figure 2). The rainfall would turn a very dry month into an average to above average month, and put a temporary dent into the drought (Figure 3).

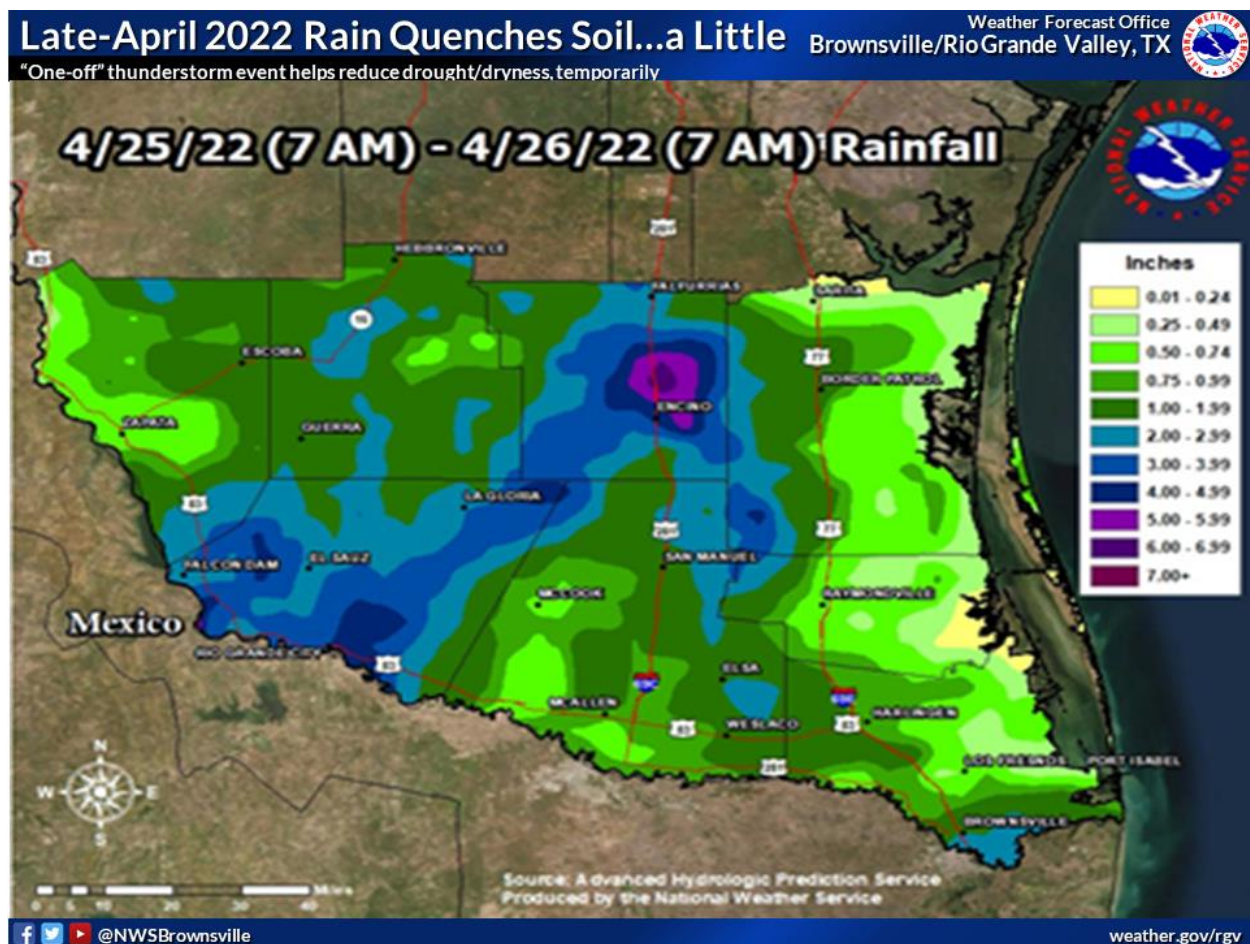
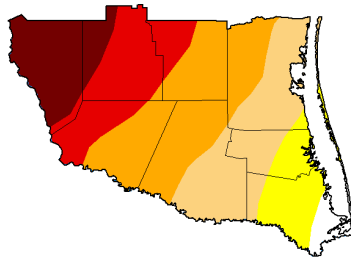


Figure 2. Rainfall from a thunderstorm complex that formed along a late season weak cold front in late April.

**U.S. Drought Monitor
Brownsville/Rio
Grande Valley, TX WFO**



April 19, 2022
(Released Thursday, Apr. 21, 2022)
Valid 8 a.m. EDT

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.48	97.54	87.11	64.17	33.20	14.15
Last Week (4-12-2022)	2.48	97.54	87.11	64.17	33.20	6.05
3 Months Ago (1-18-2022)	80.24	39.76	19.70	0.00	0.00	0.00
Start of Calendar Year (1-1-2022)	72.63	27.37	4.09	0.00	0.00	0.00
Start of Water Year (9-1-2021)	48.59	50.41	0.00	0.00	0.00	0.00
One Year Ago (4-20-2021)	0.00	100.00	100.00	83.34	75.92	35.21

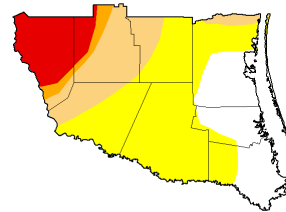
Intensity:
None D2 Severe Drought
D0 Abnormally Dry D3 Extreme Drought
D1 Moderate Drought D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
Brad Rippey
U.S. Department of Agriculture



**U.S. Drought Monitor
Brownsville/Rio
Grande Valley, TX WFO**



May 3, 2022
(Released Thursday, May 5, 2022)
Valid 8 a.m. EDT

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	20.97	79.03	33.24	14.83	12.16	0.00
Last Week (4-26-2022)	6.06	94.94	88.91	31.50	12.82	0.00
3 Months Ago (2-3-2022)	77.07	22.93	10.35	0.00	0.00	0.00
Start of Calendar Year (1-1-2022)	72.63	27.37	4.09	0.00	0.00	0.00
Start of Water Year (9-1-2021)	48.59	50.41	0.00	0.00	0.00	0.00
One Year Ago (5-04-2021)	0.00	100.00	100.00	82.15	58.71	28.40

Intensity:
None D2 Severe Drought
D0 Abnormally Dry D3 Extreme Drought
D1 Moderate Drought D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
David Serrano
Western Regional Climate Center



Figure 3. Drought Monitor for the NWS Brownsville/Rio Grande Valley region, on April 19 (left) and May 3 (right), showing the season's peak drought conditions improving by one to two categories following welcome rainfall on April 25-26.

May will be remembered as the month when spring began to swelter, especially on many nights and early mornings, when temperatures struggled to drop much below 80°F. Such was the case for the first ten days of the month before winds collapsed and clear skies allowed a reprieve from the overnight heat by mid-month. The swelter would return by the 18th and continue through the 23rd before the season's second "one-off" locally torrential rain event arrived during the late evening of the 23rd. On this day, as well as a little over a day later, embedded upper level disturbances in northwest flow hooked up with the aforementioned low level moisture to kick off a "classic" mesoscale convective system (or MCS) late on the 23rd, which spawned a series of thunderstorm clusters for much of the overnight across the region. When the weather cleared on the 24th, a bias-corrected estimated 5 to 9" of rain had fallen across a good chunk of Starr County, through southern Jim Hogg and parts of Zapata County, with 3 to 5" extending east from near McAllen through Harlingen and Los Fresnos.

The repeated torrents produced localized flash flooding across Starr and Zapata County, and turned arroyos from nearly empty channels into raging rivers in each area. An initial mini squall line surging from Zapata through central Hidalgo County produced estimated wind gusts between 65 and 80 mph, with multiple cases of roof and structure damage to largely substandard buildings along the path.

Early on the 25th, the season's final (weak) cold front surged through Kenedy, Willacy, and Cameron County, joined by a fast-moving squall line which produced wind gusts over 65 mph around daybreak in Harlingen, and a swath of 50+ mph gusts in all areas, mainly east of IH-69/U.S. 77. The lower temperatures would last a couple of days, with seasonal temperatures (day and night combined) returning to close the season.

The total rain from the late May event (Figure 4) would slam the door – at least into mid-June – on the drought (Figure 5), as local totals were as much as three times the monthly average of 2.5 to 3.5".

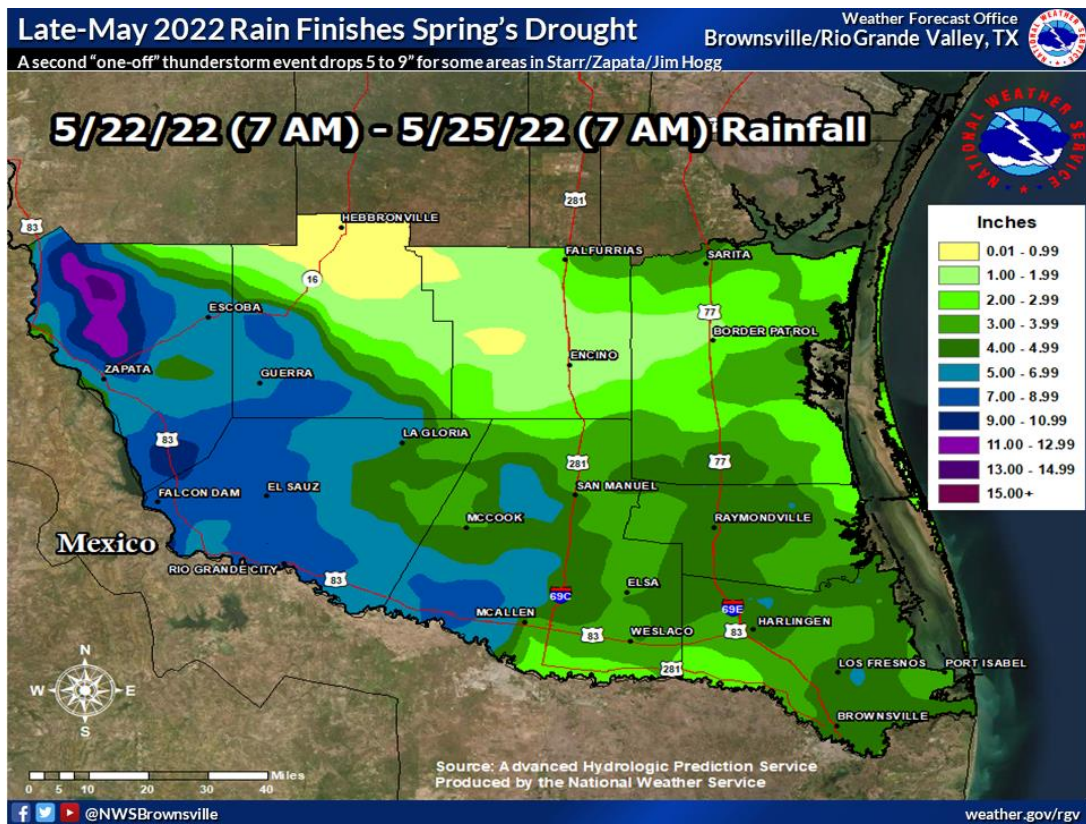


Figure 4. Torrential rainfall across the Lower Rio Grande Valley and parts of the Brush Country would finish off the drought for nearly all of Deep South Texas, May 23-25, 2022.

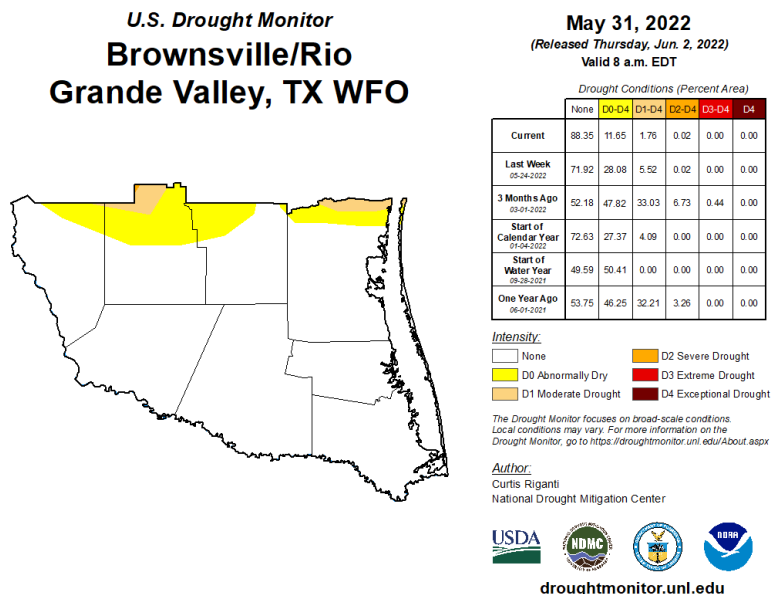


Figure 5. The heavy rains (Figure 4) across the Lower Rio Grande Valley would end the spring 2022 drought. Moderate drought would continue across the South Texas Brush Country near Hebronville, and up toward the Coastal Bend in northern Kenedy County, where rainfall was less prodigious.

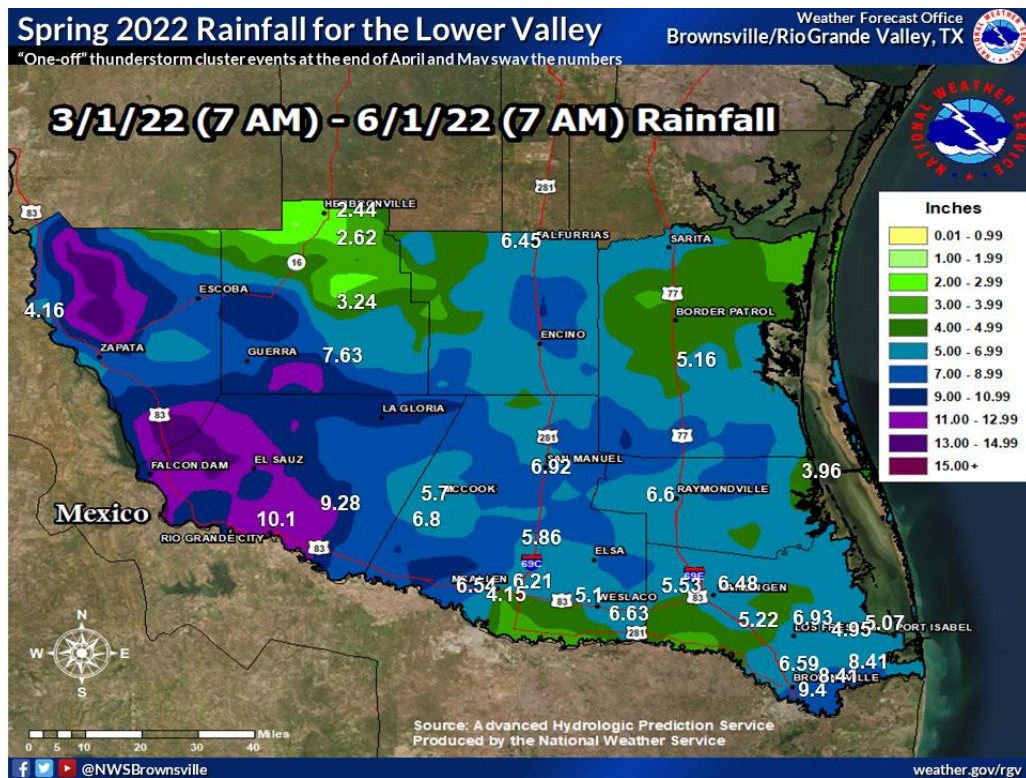


Figure 6. Spring 2022 rainfall for the Rio Grande Valley/Deep South Texas region.

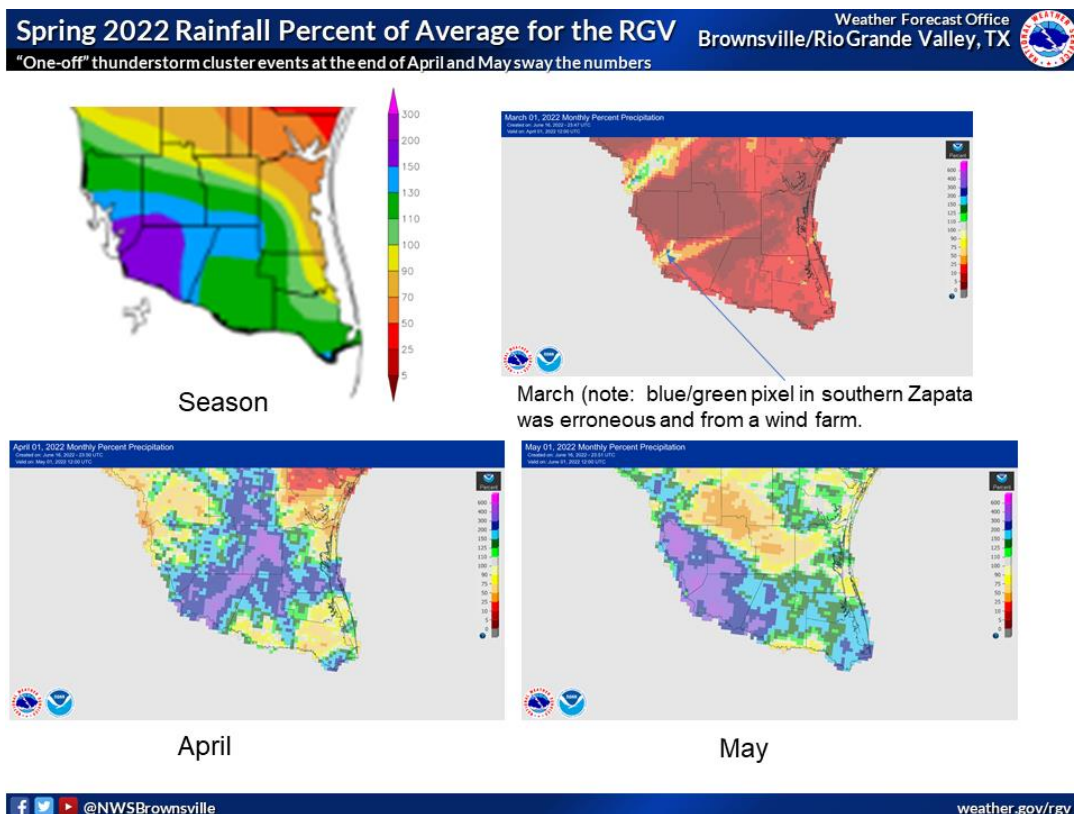


Figure 7. Departure from average, spring rainfall and individual months, for the Rio Grande Valley/Deep South Texas region.

Despite a seasonably cool start to spring, April and May 2022 made up a lot of ground. While the two-month average temperatures were just a touch above the new (warmer) 1991-2020 30-year values, the combination was enough to rank first warmest, all-time, for seven official and unofficial observing locations across the Rio Grande Valley. The same was said for Texas as a whole. For Brownsville and Harlingen, each ranking number 1, records date back more than 100 years. June 2022 picked up where May left off, and heat, with lack of rainfall, could set the stage for another top-tier warmest year across the Valley. Stay tuned.

Record Heat from April – May

Eight Locations across the Valley Had Hottest Mid-Late Spring On Record

Weather Forecast Office
Brownsville/Rio Grande Valley, TX

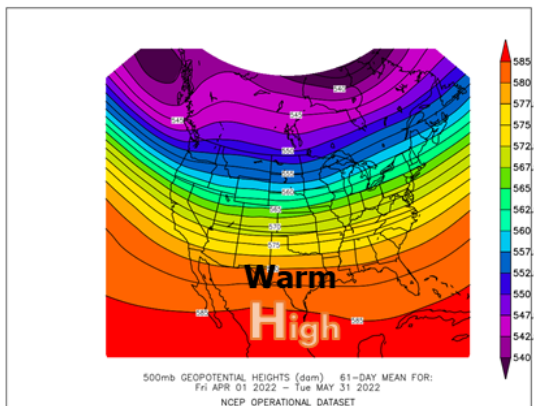


Maximum 61-Day Mean Avg Temperature for Brownsville TX NWS CWA

[Click column heading to sort ascending, click again to sort descending.](#)

State	Name	Station Type	Value	Ending Date	Missing Days	Valid Date Range
TX	FALCON LAKE TEXAS	RAWS	84.4	2022-05-31	0	2002-11-15 to 2022-06-13
TX	SAN MANUEL	COOP	80.6	2022-05-31	1	2000-01-03 to 2022-06-16
TX	MCALLEN	COOP	81.8	2022-05-31	2	1941-06-01 to 2022-06-16
TX	SANTA ANA NWR TEXAS	RAWS	82.6	2022-05-31	0	1998-10-22 to 2022-06-13
TX	WFO BROWNSVILLE	COOP	79.9	2022-05-31	0	2016-04-30 to 2022-06-15
TX	BROWNSVILLE S PADRE ISLAND INTL AP	WBAN	82.0	2022-05-31	0	1898-12-01 to 2022-06-15
TX	ARMSTRONG 4SE	COOP	80.1	2022-05-31	2	2002-01-05 to 2022-06-16
TX	HARLINGEN	COOP	81.5	2022-05-31	2	1912-02-07 to 2022-06-16

New April-May records set across the Rio Grande Valley/Deep S. Texas region in 2022. Nearly all other locations (not shown) ended up among the top five warmest on record.



Left: 500 mb (~18,000 feet) atmospheric steering pattern for April and May, showing persistent subtropical high pressure ridge centered across northern Mexico. This ridge locked in the heat and kept the cool away, supporting the record warmth.

[f](#) [t](#) [v](#) @NWSBrownsville

weather.gov/rgv

Figure 8. Official and unofficial observing locations with all-time warmest April/May combined. Below, the mean atmospheric steering pattern (500 mb flow) that was a key reason for the persistent warmth.