

Historic West Texas Snowstorm

12/30-31/2020



The winter season of 2020-21 will be remembered in many ways for it's dismantling of the record books! The end of the 2020 year went out with a bang with perhaps one of the greatest snowstorms in the history of record keeping for west Texas. An anomalous storm system began developing a few days prior as a little disturbance over the Rockies dug southwest towards Arizona and began carving a trough over the western US. Ahead of the trough, a cold front would help set the stage over west TX, allowing temperatures to take a tumble back below freezing for many areas after a brief warm spell. By the beginning of the

final week of the year, the previously mentioned trough began to pivot eastward and deepen over Sonora with a very large disturbance taking shape over Northern Mexico. Snow was found all across the mountains of Sonora and Chihuahua with the deepening disturbance, and all eyes turned to west Texas where the storm would be heading over the course of mid-week.

By the morning hours of the 30th, the area would begin its battle with a behemoth of an upper level low to the southwest that allowed snow to breakout in earnest over much of the areas out west like the Guadalupe and Davis mountains, as well as the neighboring foothills out in Jeff Davis county and the Marfa Plateau. Reports of heavy snow began coming in over a large stretch of I-10 with snow covered roads and slowing traffic from Van Horn all the way to the I-



Big Bend NP

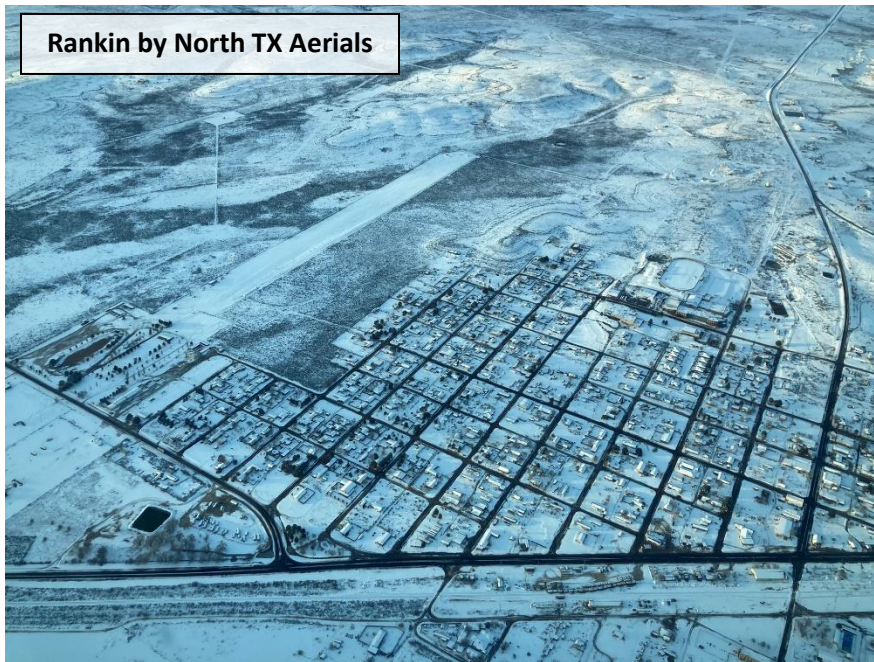


Big Spring by James Rodriguez

10/20 split in Kent, TX. By the afternoon hours, reports of several inches of snow were already being reported across the high terrain out west with accidents piling up due to the icy conditions caused by the snowfall. Snowfall rates of 1-2"/hr were very common with the disturbance during this part of the storm, leading to many plows having a difficult time keeping up with the intensity of the snow. Further east, snow began falling across the Stockton Plateau, which was the main area of focus during the forecasting period for the snowfall. Model guidance was incessant with historic snowfall totals

being printed out prior to the event, some of which made many of the forecasters at the National Weather Service (NWS) a bit wary of the potential impacts that would occur with such a magnitude of snowfall.

As we continued through the afternoon and early evening time frame, precipitation began breaking out further to the east with the Midland/Odessa area finally seeing some of the impacts of the storm system. By this time, snowfall



was really ramping up across the southern tier of the forecast area with snowfall being reported across the Hwy 90 corridor down to the Big Bend regions of TX. Places like Terlingua down to the Chisos would become fixated in a blanket of white with snowfall picking up in intensity through the

evening as the upper level disturbance continued slowly shifting eastward with sights set on just south of the Big Bend region of Texas. The exact placement of the low led to incredible dynamics and a plethora of banding snow signatures all over west Texas. In fact, at one point late on the 30th, heavy snow was reported all the way from the southern reaches of the Big Bend up to portions of the Permian Basin. Fort Stockton began seeing what would be a prolonged period of heavy snowfall that would extend into the morning hours of the 31st, allowing the region to be engulfed in record tiers of snow. The area is not immune to big snows as they have occurred in the past, but the area is still not accustomed to this type of impact.

As the storm raged on into the night, the I-10 corridor was completely inundated with moderate to heavy snowfall allowing all traffic to be grinded to a halt, and several miles of the interstate to be closed due to the impacts of the snow. Over 400 cars and trucks would become stranded along the I-10 corridor from the TX

118 junction to near Balmorhea which falls along the I-10 portion east of the split. Further south, US 67 between Marfa and Presidio had to be closed down due to impassable roadways due to the snow and ice that had fallen through the day. Several travelers were forced to remain at shelters and hotels in Marfa and along



the highway due to the harsh conditions causing travel to be all but impossible for the area. This was only the beginning of the travel concerns across the region as the storm was still only at its halfway point of high impacts for the region.

As we began looking at the calendar turning to the 31st heavy snowfall began pushing north into the Central and Southern Permian Basin. Areas like Big Spring to Snyder were stuck with sleet and freezing rain as a pocket of warmer air aloft remained to the east. Between 9pm and Midnight on the 30th/31st, a very prolific snow band developed over Crane and Upton counties, unleashing snowfall rates near 3"/hr as it slowly drifted north into Midland County. Areas in Crane and McCamey had between 4-6" of snow reported in that short time frame just from the band that developed, which is incredible for west Texas standards. The snowfall continued to expand to the northeast as colder air aloft began poking into areas further east with Big Spring finally shifting to snow overnight, and piling up in the process. Midland/Odessa would lie on the outside looking in however, as a dry wedge of air was brought into portions of the Permian Basin and Southeast New Mexico, leading to a very sharp cutoff of snowfall. In fact, overnight much of the Midland/Odessa area would only see periods of flurries while areas to the east of Stanton would continue getting assaulted by waves of moderate to heavy snowfall all night.

By the morning of the 31st, the satellite showed a large swath of snowfall burying the Big Bend area all the way up to the northeast Permian Basin. Fort Stockton

and the remainder of eastern Pecos county continued to be engulfed in snowfall. Reports of over a foot of snow were coming in from portions of the plateau, extending all the way over to Alpine where the entire town was brought to a crawl from the barrage of snow the previous 24 hrs. The focus would shift to the northeast over the Permian



Basin as the upper low would move east overnight, eventually rounding the corner near Val Verde county and turning north to the Hill Country. This would allow for the most intense snowfall period to develop for the entirety of the event as a pronounced, stationary band of heavy snowfall developed over Howard and Borden counties late morning, and continued an onslaught through the rest of the afternoon and early evening hours. Snow piled up rapidly along the I-20 corridor midday, causing traffic to come to a halt along the busy thoroughfare. This was a nightmare scenario coming true as the previous day was a foreshadowing of another impactful period of winter weather to hit the area. Hundreds upon hundreds of vehicles became stranded as the corridor of I-20 between Stanton to Colorado City shut down due to the inability for traffic to move through the region.

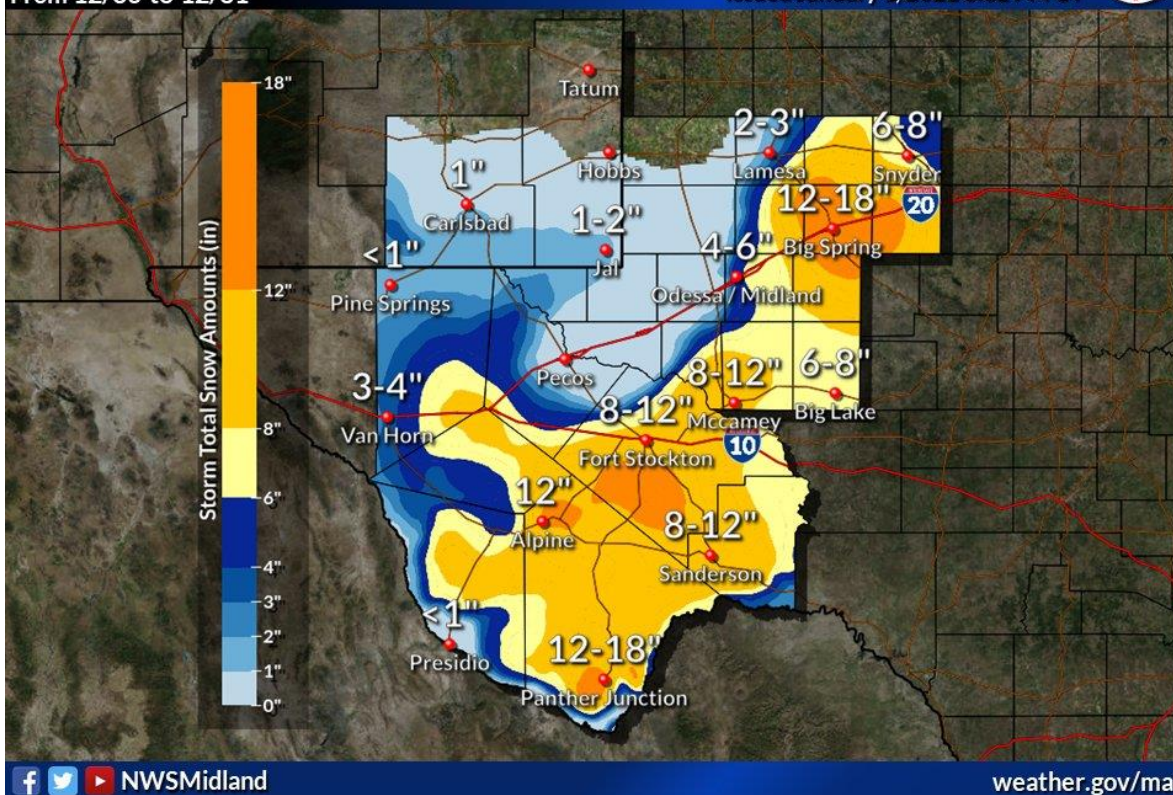
Ten to **FIFETEEN** inches of snow fell in an 8 hr window between Noon-8pm the evening of the 31st over Big Spring with storm totals ranging from 13” to a whopping **18”** of snow in the area!! Similar totals were found all across Glasscock, Howard, and Mitchell counties as they were also within the core of the heaviest snowfall. Further to the west, the Midland area began seeing a rebirth of snowfall as the atmosphere moistened back up and the lift created by the dynamic disturbance was able to make a run back to the area void for a good portion of the storm. A very sharp cutoff developed between Midland and Odessa on the

Total Snowfall for Major Winter Storm

From 12/30 to 12/31

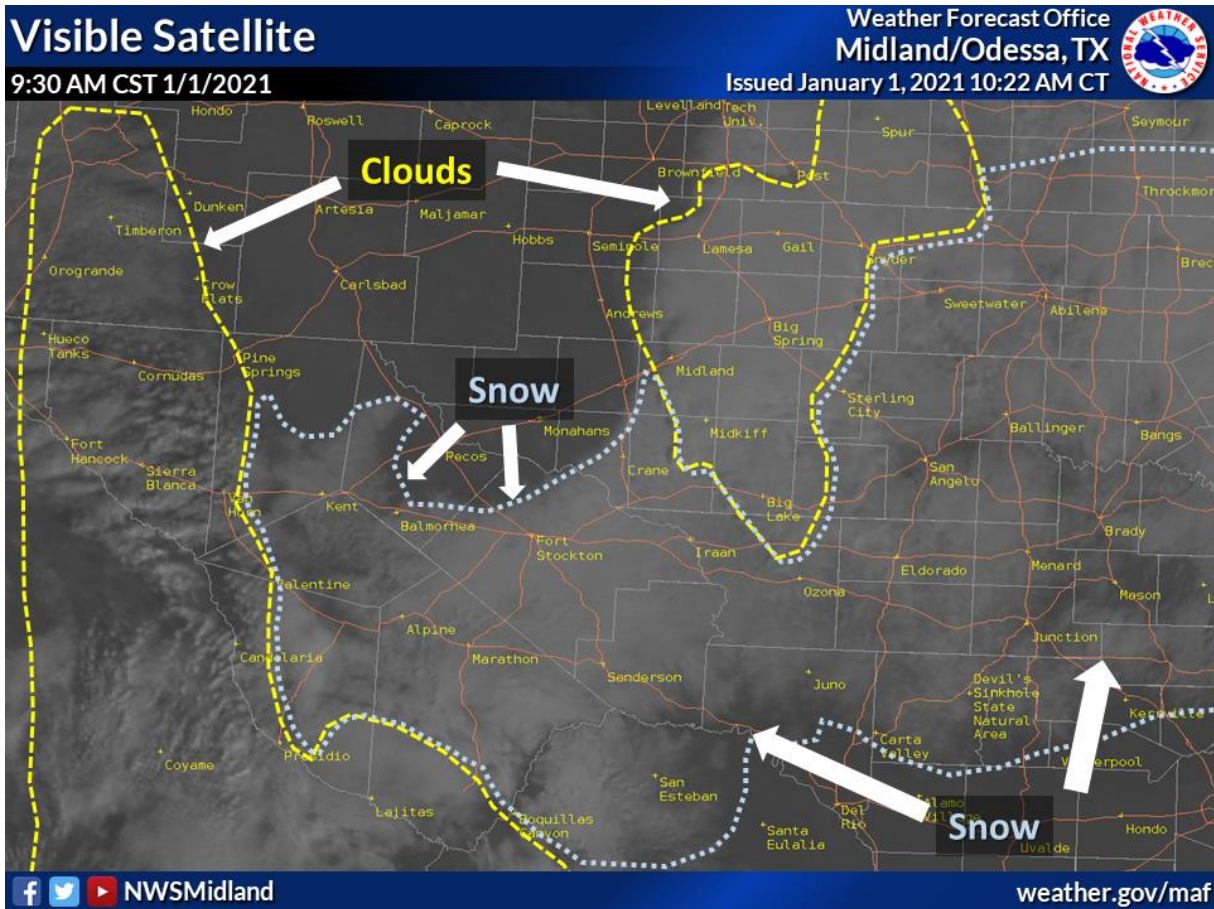
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western extent of the heavier snowfall with a 0.5" of snow reported in East Odessa, over 5" at the airport, 6" on the east side of Midland, and over 8" out near Greenwood. It is very rare to get this kind of setup, and is very tricky for the exact location of where it would setup, but it was one of those storms. Every little dynamic feature was at play, and they all worked in tandem to bring the area one of the biggest snowfalls to ever grace the open confines of west Texas.

There really are not enough words to describe the total snowfall that fell for a two-day period over the region. There was an expansive area of impact with 12+" totals almost a norm compared the usual anomaly for the area. Reports of up to 9" of snow fell in the valley near Terlingua where residents enjoyed a picturesque scene of fresh white over the backdrop of the desert. Further south into the high terrain of the Chisos, National Park employees reported impassable roads with as much as **18-24"** of snow falling near Panther Junction to the highest elevations of the Chisos Basin. That in itself is something unfathomable and is surely a once in a lifetime occurrence for that far south in latitude. The satellite on the morning of January 1st greeted the new year with a landscape of white extending all across



the wide-open Texas plains down to the mountains. It was a surreal moment that for a day, west Texas became the snow capital of the United States.

There are not enough, “Thank You”, messages to give to everyone who was involved in keeping our people safe from such an event. The partnerships and communication were a big part of why west Texans made it through safely despite the harsh conditions. Also, a major thanks to all of you who helped send in reports, pictures, and videos that would help us in capturing the broad scope of the event. We appreciate it on many levels, and for that, the office here at the National Weather Service in Midland says, “Thank you again west Texas!”