



# The High Plains Drifter

NATIONAL WEATHER SERVICE  
NORTH PLATTE, NE



<http://www.weather.gov/northplatte>

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## Lightning Safety Week By Jaclyn Gomez-Meteorologist

Lightning Safety week is June 19th through June 24th. During this week it is a time for everyone to learn and reflect on lightning safety tips to help them to stay safe when lightning is in the vicinity.

One safety tip the National Weather Service likes to promote is “When Thunder Roars, Go Indoors”. Anytime you are able to hear thunder, that means you are close enough to be struck by lightning.

Did you know that the National Weather Service also has lightning safety tips for those in the Deaf and Hard of Hearing community as well? For those who may not be able to hear the thunder they will want to remember this safety slogan “ See a Flash, Dash Inside! “.

Most lightning fatalities occur in the summer months of June, July and August, with sixty-four percent of these fatalities occurring from outdoor recreation.

For more information on lightning safety visit:  
<https://www.weather.gov/safety/lightning-outreach>



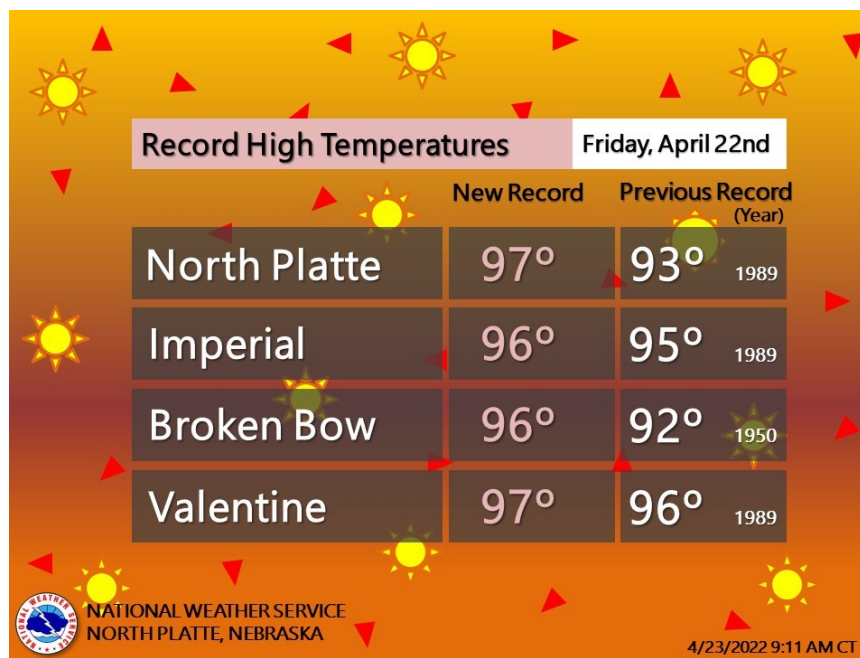
## APRIL 22ND-23RD WEATHER SYSTEM BY JACLYN GOMEZ—METEOROLOGIST

An impactful weather system moved into Nebraska late April bringing multiple weather hazards, starting on Friday, April 22<sup>nd</sup> and continuing on Saturday, April 23<sup>rd</sup>.

A deepening surface low moved across central Nebraska on Friday. As the low deepened, southerly winds increased through the day with the strongest winds occurring Friday afternoon and continuing through the overnight hours. A few locations had wind gusts greater than 70 mph. Imperial, Nebraska recorded the highest wind gusts Friday night, with a gust of 76 mph at the airport. Strong winds also created areas of blowing dust, especially across southwest Nebraska.

The strong southerly winds also helped draw warmer air into the Central Plains with temperatures soaring into the 90s. Several locations broke record high temperatures on Friday, see picture below for record high temperatures.

On Friday evening, isolated thunderstorms developed across parts of north central and southwest Nebraska. Initially these thunderstorms were low precipitation thunderstorms, meaning there was not much rain associated with the storms. Lightning with these storms caused several wildfires across parts of north central Nebraska and southwest Nebraska. Later Friday night a line of storms developed across western Nebraska and moved eastward during the overnight.



The graphic features a background of yellow and orange with sun icons and red triangles. It contains a table with record high temperatures for four locations in Nebraska on Friday, April 22nd. The table has three columns: Location, New Record, and Previous Record (Year). The data is as follows:

	New Record	Previous Record (Year)
North Platte	97°	93° 1989
Imperial	96°	95° 1989
Broken Bow	96°	92° 1950
Valentine	97°	96° 1989

At the bottom left is the National Weather Service logo for North Platte, Nebraska. At the bottom right is the timestamp 4/23/2022 9:11 AM CT. At the very bottom center is the text 'Published on: 04/23/2022 at 9:13AM'.


**APRIL 22ND-23RD WEATHER SYSTEM**  
**BY JACLYN GOMEZ—METEOROLOGIST**

On Saturday, additional thunderstorms developed early in the morning and moved across portions of southwest Nebraska, the Sandhills and into portions of north central Nebraska. Damaging winds were the main hazard with these severe storms. Meanwhile, across the northwest Sandhills, snow developed Saturday morning, prompting the issuance of a Winter Weather Advisory across Sheridan County.

High winds continued on Saturday with the highest winds across the western Sandhills. Strong winds also continued on Sunday with gust around 40 to 45 mph and a few locations reaching 50 mph or greater. The strong system continued to slowly move northeastward through the weekend, finally bringing relief from the strong winds Sunday night.

### Rainfall and Wind Gust Reports

Observed Storm Total Rainfall		Peak wind gusts (in mph)	
4 N of Brownlee	0.76"	Imperial Airport	76
27 S of Valentine	0.66"	North Platte Airport	71
Keystone	0.62"	1 E Brule	71
16 SW Mullen	0.56"	Broken Bow Airport	68
6 WNW Grant	0.52"	Crescent Lake	67
3 S Mullen	0.51"	Valentine Airport	63
8 WSW Sutherland	0.47"	Ogallala Airport	62
3 S Lamar	0.45"	6 E Gordon	61
Springview	0.43"	3 E Sutherland	60

 NATIONAL WEATHER SERVICE  
 NORTH PLATTE, NEBRASKA

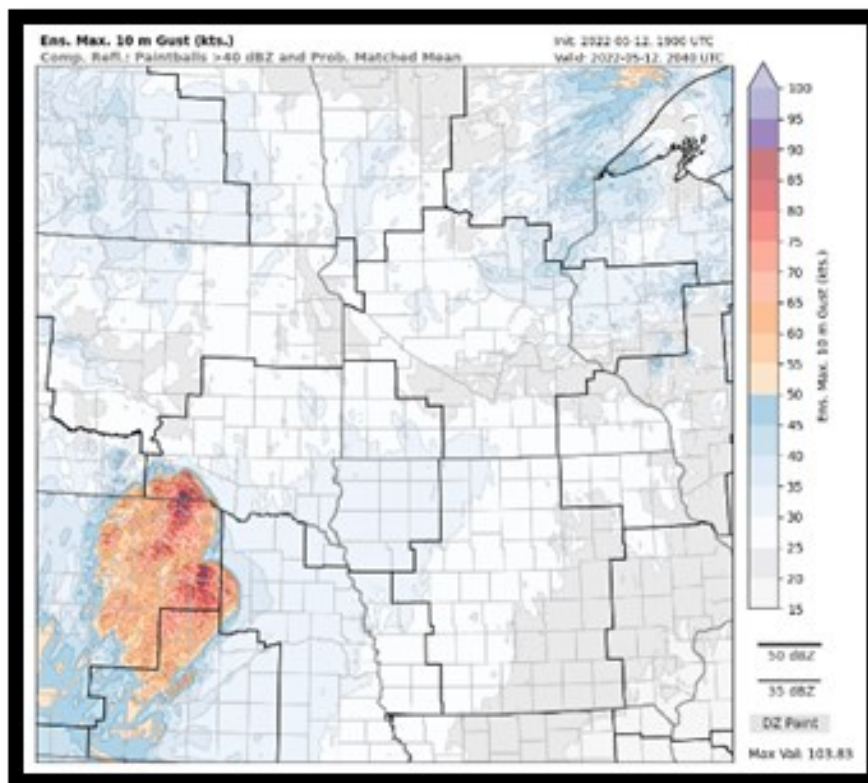
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# Cutting Edge Warning Forecasting in Western and North Central Nebraska

By John Stoppkotte-Science & Operations Officer

As you might know, the NWS in North Platte uses the latest in radar technology and techniques to understand the potential for severe weather and severe weather warning decision making. But did you know that Nebraska NWS offices also utilize the latest in research-based, high resolution severe storm modeling in real-time to make warning decisions?

The Warn-On Forecast System (WoFS) is an ensemble of 36 individual high-resolution computer model forecasts, run every 30 minutes. Hundreds of high resolution parameters are output from 18 of the 36 members on a time scale of every 5 minutes, with forecasts out to at least 3 hours into the future (as much as 6 hours during full-hour forecasts). The model is run at a horizontal grid spacing of 3 km (roughly 1.9 miles), which means that it is fine-scaled enough to resolve detailed features of the current and future environment, as well as some details of the storms themselves. In addition, the modeling system is constantly incorporating current environmental data (such as high-resolution radar and satellite data) to further refine its forecast of storm evolution. That's a lot of information, but what do the forecasts look like?



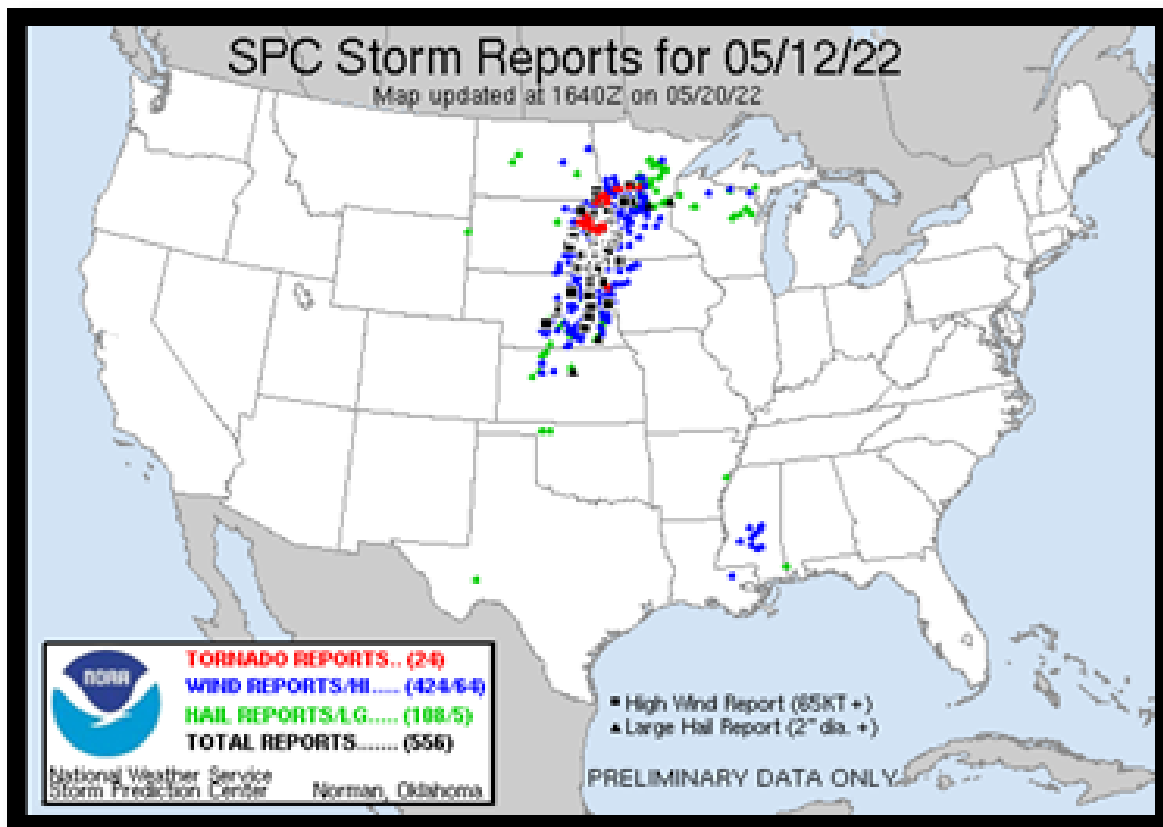
To the left is a one hour and 40 minute forecast of maximum wind gust from all of the individual models put into that 3km grid mentioned before, from the May 12<sup>th</sup>, 2022 high wind event. If you look closely, there are **forecasts** for high winds over 90 mph in portions of Garfield, Wheeler, Holt and Boyd counties, and many others as well.

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## Cutting Edge Warning Forecasting in Western and North Central Nebraska (Continued)

Seeing this data real-time allowed our meteorologists the confidence, when paired with state-of-the-art radar data interpretation and reports from spotters, to issue strongly worded severe thunderstorm warnings to better communicate life threatening information.

It is important to remember however, that this is only *computer model* data. NWS meteorologists are highly trained in the science and understanding of the latest severe thunderstorm theory and radar techniques to identify key features in storms that can lead to severe damaging wind, very large hail and tornadoes. Still, the addition of an ensemble of very fine-scale computer model data such as this, in tandem with a thorough investigation of the near-storm atmosphere, can lead to higher confidence in specific storm threats an hour or more into the future and, in some cases, even before the thunderstorm has formed! And the best part is - it's all happening in our back yard!



## Taking a Look on the Severe Weather Events thus far in Spring of 2022

By Shawn Jacobs-Warning Coordination Meteorologist

This is typically the time of year when I enjoy looking back at the severe weather events that Western and North Central Nebraska has thus far endured. I do this mainly because I feel you can learn a lot about the future, by simply looking at the past. This belief goes back to my archeological days where I searched the earth for clues on how previous cultures prospered in areas where present day climatologists would classify as “harsh.” I’m not talking about Nebraska here; everyone who has lived here long enough knows how special this state really is.

June 1, 2022 was the official meteorological start to summer. In terms of severe weather, we have a LONG way to go before the seasons change and the threat of severe weather becomes much less. If I’m being honest though, is there really a time when Nebraskans should let their guard down on severe weather? The historical record definitively answers the question as a hard **NO!** Did you know that tornadoes have been documented every month of the year in the state of Nebraska? I remember 13 years ago saying something like “there has never been a documented tornado in the state of Nebraska in February, and hey there’s still snow drifts in the fields.” Less than five minutes later I was issuing a tornado warning on a confirmed tornado. Again, look and learn from the past to help learn about the future.

Back to the severe weather events Western and North Central Nebraska has thus far seen in 2022. Two really stand out to me; the widespread wind damage on May 12th across eastern portions of Custer County northeast through Holt County and the Loup County supercell that produced giant hail on May 29<sup>th</sup>. Giant hail and extreme winds are not uncommon across West Central Nebraska, but these two storms were particularly destructive. Let’s take a look at each of them.

The National Weather Service in North Platte conducted a storm damage survey which revealed wind speeds on the order of 110 mph that impacted portions of Garfield County including the city of Burwell on May 12. The most visible damage in Burwell came from the rodeo grounds. Unfortunately the north grandstands that have withstood over 100 years of severe weather were lost. The damage was not limited to Burwell, other areas from eastern Custer County northeast through eastern Holt County saw widespread damage as well. A recorded wind gust of 88 mph was reported near Ewing with this developing line of severe storms. If you are curious, the line of storms continued northeast into South Dakota and continued its widespread path of wind damage. Sioux Falls was especially hit hard with damage to trees and homes. The line of continued on into Minnesota with similar results and even crossed the international border into Canada.

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## Taking a Look on the Severe Weather Events thus far in Spring of 2022

### Continued

The supercell that produced the giant hail on May 29<sup>th</sup> produced a much smaller “footprint” of damage as compared to the derecho of May 12<sup>th</sup>. Though smaller, the impacts from this supercell could have been much worse. From a scientific point of view, that supercell was pretty darn near close to producing a tornado. Yes, “darn near” is correct scientific terminology when speaking about supercell thunderstorms that are close to producing tornadoes in the Sandhills of Nebraska. The ingredients were there for a tornado, but thankfully they didn’t come together at the right time. What did come together was the giant hail. I think it is safe to classify the hail as horse pie hail (another scientific term that is appropriate for our area). The National Weather Service in North Platte received numerous reports of hail of 4.5” to as big as 6” in diameter with this supercell. Now take this thunderstorm and move it just 10 miles or so the east north east, say over Calamus Reservoir on a busy Memorial Day weekend, the potential impact to life and property is something I wish not to think about. What if the ingredients did come together for a tornado over the reservoir, what would you do? What about the 6” hail? My camper would not sustain that type of damage for long. This is why you look to the past to help understand the future.

I am proud of my colleagues in how they approached the warnings for both severe weather events. I do believe they deserve a pat on the back for their efforts. Did you know the city of Burwell had greater than 20 minutes of warning lead time before the destructive winds of 80 mph or greater impacted the city? The meteorologist on the warning desk that day included a destructive tag in our official severe thunderstorm warning (pictured below), that triggered the Wireless Emergency Alert (WEA) on your cell phone. Personal communication with numerous individuals in the Burwell area revealed how useful those alerts were. Those individuals took action once they received the warning, they too deserve a “pat on the back.” In case you were wondering, anytime a severe thunderstorm is producing baseball size hail or larger and/or winds of 75 mph or strong, the destructive tag will be used. Both events were tagged as destructive.

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THUNDERSTORM DAMAGE THREAT...DESTRUCTIVE  
HAIL THREAT...RADAR INDICATED  
MAX HAIL SIZE...1.25 IN  
WIND THREAT...OBSERVED  
MAX WIND GUST...80 MPH  
  
$$
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## Taking a Look on the Severe Weather Events thus far in Spring of 2022

### Continued

Not all cell phones have the WEA capability and not all providers offer the service. This is why it is crucial to have **multiple** ways of receiving a warning. Once a warning is issued for your area, take action. There are many ways to remain weather aware. I have a weather radio and a regular radio in my camper. I also remain situationally aware for severe weather by checking the forecast each and every day before I go out on the lake. I'm curious, what do you do to remain situationally weather aware and what have you learned from past weather events?

Feel free to let me know at:  
[Shawn.jacobs@noaa.gov](mailto:Shawn.jacobs@noaa.gov)





## Trivia Questions (Answers on back page)

1. What is the all-time record high at North Platte?

- A. 115°F
- B. 109°F
- C. 117°F
- D. 112°F

2. True or False:

The coldest temperature ever recorded in Valentine was -37°F?

## Fun Facts

- The wettest year in North Platte was in 1951 when a total of 33.44" of precipitation was recorded.
- The driest year in North Platte was in 1931 when only 10.01" of precipitation fell.
- The wettest year on record in Valentine is 1977 when 32.68" of precipitation was recorded.
- The driest year in Valentine was clear back in 1894 when 10.64" of precipitation fell.
- The snowiest year on record in Valentine is 1929 when a whopping 93.9" of snow was recorded. In North Platte it was fairly recent, 2009, with 67.7" of snow falling.



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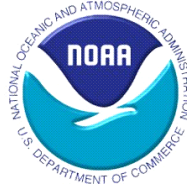
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Comments and suggestions are always welcome. Your feedback is very important to us!

<http://www.weather.gov/northplatte>

**Trivia Answers**

1. D. The high reached 112°F on July, 11<sup>th</sup> 1954.
2. False! The coldest temperature ever recorded in Valentine was on December 22, 1989 when the temperature plummeted to -39°F! The next coldest was -38°F which was recoded nearly 100 years earlier in January 1894.