Summer 2014

The Quarterly Hail

National Weather Service - Hastings, Nebraska

Volume 4, Issue 2

Notes From the Meteorologist In Charge

As I write this column, we have already experienced several tornadoes in our area. As you have probably seen on the national news, the southeastern part of the U.S. was hammered by severe weather in late April early May. It just shows the power of nature. Our peak tornado season is normally mid May through June. The weather pattern going into this spring was a little more active than the last few years. Realizing this, the staff is trained, primed and ready to switch into severe weather mode at a moment's notice. We are standing ready to issue all the lifesaving warnings as needed!

We hope, with the altered weather pattern, we are seeing an end to the persistent drought conditions. However, for us, it just shifts the work load from fire weather and blowing dust issues to flooding and severe weather issues. In any case, we are paid to be here to provide the best products and services possible.

The staff has been working hard to incorporate the use of social media in our daily and hazardous weather operations. We are seeing a lot of activity in response to these posts and are getting a lot of positive feedback from those customers. If you are on Facebook or Twitter, please check us out!

The healthier budget we received this year is seeing fruits in the form of travel and training. We are able to get out and do more outreach into the community and have been able to provide some offsite training to our employees so they can learn more about the science and technology and bring it back to the office. With a normal budget, the hiring freeze was lifted, so we are looking forward to filling a long standing vacancy in our Electronic's Shop. The other side of the coin: our interns have completed their training and will likely be promoted over the next few months. If they are promoted, it will be at an office other than Hastings since we have no openings in our forecaster section right now. So, the moral of the story is, no matter whether it is with the weather or with life, you can always expect change!

Please sit back and enjoy the rest of the newsletter. As usual, the staff has put a lot of time and effort into the publication of this document! As always, we recognize that many of you sacrifice for our mission to serve your community and nation. We thank you for your volunteerism!

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Inside this issue:

Special Points of Interest:

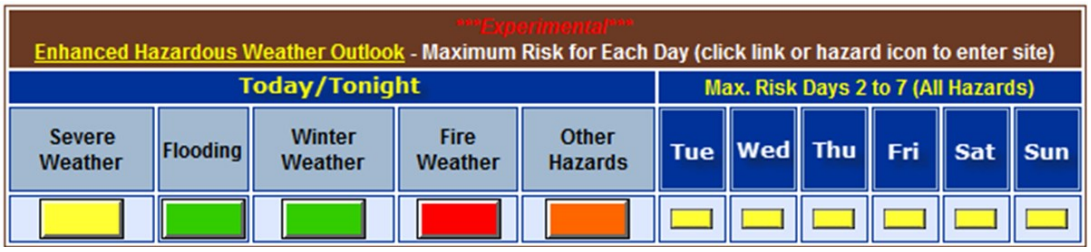
- *Beat the Heat! Check the back seat!*
- *Do you know the meaning of a SPC Convective Outlook?*
- *Read more about the Water Jamboree.*
- *See us at the NE State Fair!*
- *How many days on average does Grand Island hit at least 95°?*

Product Highlight - Enhanced Hazardous Weather Outlook

Remember that the National Weather Service issues other daily products outside of the normal 7 day forecast! In fact, we offer a variety of products each day that can help you make your weather driven decisions. We will try to point out a few different products that might make your life a bit easier. We will tell you where to find them and what they can do for you. Check it out!

What: Enhanced Hazardous Weather Outlook (EHWO)

How to find it: Navigate to our website: www.weather.gov/hastings. Scroll about halfway down the page until you see the image below and click on any of the buttons or the words "Enhanced Hazardous Weather Outlook."

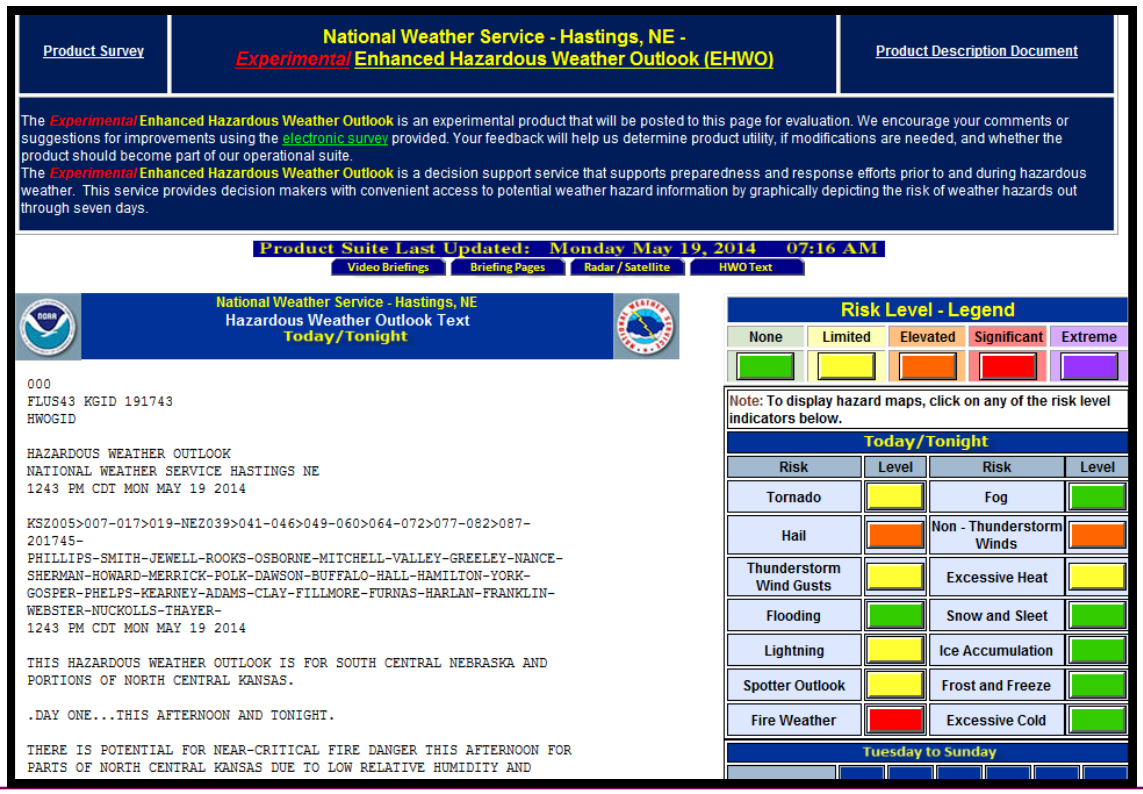


Information it provides: If you are concerned about any hazardous weather in the next 7 days then this product is for you! This product not only breaks down hazardous weather in the next 7 days but also delineates between which hazards are expected. Generally speaking, green is good and red is bad.

After clicking on the tabs you will see the main EHWO page. The left portion of the main page will show the text product of the hazardous weather outlook (HWO). On the right, you can view maps of specific hazards. For example, if you are concerned about fire weather, you would click the fire weather tab (red in the image below). This tab color will change depending upon the highest risk for that hazard across the entire county warning area.

Clicking the tab will display a map of the county warning area to the left. You can see where the highest risks are across the region. A table below the map will discuss the properties of each risk level.

Many hazards are displayed in the EHWO from severe weather to winter weather, general lightning, heat, snow and many more!



Sad Farewell

John A. and his wife Frieda receive the 20 year length of service award in 2011.

On April 2nd John A. Nelson rode off into the sunset. John A. was our precipitation observer at Fullerton, Nebraska from March 1991 to December 2013. Over the years we came to know John A. through his phone calls to the office and his monthly precipitation forms. Every month he included a page of jokes that he had heard down at the coffee shop that he and Frieda frequented. In turn, I shared the jokes with my father, who was a jokester like John A.

John A. served in the Navy from 1943 to 1946 on a small aircraft carrier, the KitKun. He married Frieda in 1946 and went to work for KN Energy. He enjoyed golfing, wood working/carving and dancing to Polkas. Our office received numerous wooden puzzles over the years. After retiring the station this past December, he provided the office with a box of "kitchen helpers". These were made using wooden clothespins and could be used to remove toast from the toaster, instead of poking your fork in!! Funny sayings or advice were written on each one. What a special guy. We miss talking to him and reading his jokes. He was a lot of fun, especially on April Fool's Day. Frieda and John A. were a special pair. Thank you for being a part of our family for over 20 years.

Welcome!

In our last newsletter we had an article regarding the 50 year Length of Service Award presented to Howard and Patricia Romsdal at Bradshaw, Nebraska. What we forgot to mention was that Mark Briese, the guy in the middle of the picture, has volunteered to take over the precipitation readings. Howard will serve as the backup observer. We are happy to welcome Mark and his wife, Deb, to our family and glad that we can still visit with Howard and Pat. The more the merrier.

General News

Spring weather has finally arrived with warmer weather, and of course the wind. It sure has been windy, my goodness. While I do expect a bit of wind from mid-March to mid-June, I think we have had a bit more than normal. It is nice to see the flowers blooming and everything greening up.

By now you all should have put the smaller tube and funnel back in your gauges. Mike, Phil and I did come around and prepare the recording rain gauges for summer which included putting in the funnel. We will be making our rounds of site visits over the next several months. Please let us know if you need anything besides forms/envelopes. We usually try to have everything in the truck but just in case please give us a call. Maybe your rain gauge stand has lost a bolt or your rain stick has become too worn to read, etc. That way we can make sure and have what you need.

Notes From MoM (Mind of Marla) Continued...

It's Your Turn!

In every edition of the newsletter, we have featured one of our staff members in the "*Employee Spotlight*" (see below). This has given you a chance to see the "faces behind the forecast" and take a look into our personal and professional lives. Well guess what? We are running out of employees for the spotlight! So now it's your turn!

We know we are blessed to have so many awesome and unique characters in our cooperative observer family and we would love to hear your stories! We are going to start a new section of the quarterly newsletter dedicated to our "Observer Spotlight." Each quarter we will select one observer to write an article about themselves. You can discuss anything you want, from your hobbies, personal life, career, or even some of the fascinating weather you have observed. Everything goes!

Don't worry, for those who aren't interested in sharing, this is completely optional! We will not call or pressure you into participating. Just let us know if you would like to be "spotlighted!"

If you are interested in writing an article, all you need to do is send an email to:
cr.coop-hastings@noaa.gov or call Marla at *(402) 462-2127 ext. 327*

Employee Spotlight - Jeff Halblaub, General Forecaster

"Find something you love to do, and you will never work a day in your life." Author and motivational speaker Harvey Mackay said that, and it is absolutely true. As with many other meteorologists, I have had a life-long fascination and passion for weather and the atmosphere. I grew up in Ohio and studied meteorology at The Ohio State University. While in high school, I spent an evening with Dick Goddard, who is the TV-weather icon in the Cleveland market. He asked if I had visited the local National Weather Service office. I had not. So, I set up a day to visit. From the first moment I stepped inside the office, I knew this was where I wanted to work for the rest of my life. I ended up volunteering one day a week there, during the summers of 1992 and 1993.

My dream was delayed, however, because the National Weather Service (NWS) was undergoing a major reconfiguration and modernization in the mid 1990s, when I graduated from Ohio State. They were not hiring. So, I began my career in the private sector. I spent seven years at Weather Services International (WSI) near Boston. The first half of my time there I worked as a Customer Support Systems Analyst, providing technical support for WSI customers. I transitioned over to the forecasting department in 1999 and provided weather and decision support to several large power companies over the eastern U.S. and Gulf Coast states. This widely broadened my experience in forecasting everything from Nor'easters to tornado outbreaks to devastating ice storms, and hurricanes.

I finally joined the NWS in early 2009, at the Gaylord, Michigan office. After a little more than 3 years there, I moved here to the Hastings office. Typically, most meteorologists focus either on weather forecasting or performing atmospheric research. I am one meteorologist that enjoys both. I like researching and studying things that apply to weather forecasting and especially problems in weather forecasting (things we need to understand better in order to provide better forecasts). The thing I enjoy most about being a NWS forecaster is working radar, issuing severe thunderstorm and tornado warnings. There can be no greater satisfaction than providing critical information that has the potential to save someone's life.

Because my passion does not end when I leave work, in my off-time I enjoy reading research papers and increasing my knowledge and understanding of the atmosphere. Scientific professions are always changing; everything is not fully understood. There are always new things to learn. The science is always moving forward. When I'm not doing things weather-related, I enjoy sight-seeing and exploring where I live. I also get a lot of satisfaction working outside in my yard.

Water Jamboree - *Scott Bryant, Lead Forecaster*

On April 23-24, members from the National Weather office in Hastings participated in the 2014 Water Jamboree at the Harlan Reservoir. The Water Jamboree is an annual event, hosted by the Tri-Basin NRD, which provides an opportunity for 4th, 5th and 6th graders to experience and learn about nature. The National Weather Service provided just such an experience by introducing educational and interactive activities to each class. The students explored the world of weather by completing a scavenger hunt in which teams would follow clues and race one another to find weather-related items scattered out across a large field. The students then continued their exploration of weather by utilizing a flood model to learn about flooding, how to mitigate flooding, as well as the importance of preserving our wetlands. During the two-day event, the National Weather Service had the pleasure of meeting with hundreds of school students from across the area. It was an event full of education and fun and the National Weather Service looks forward to participating in similar events in the future.

For more information about the Water Jamboree, visit: http://www.tribasinnrd.org/wj_index.html

Cooperative Observer Awards

George Umbarger (left) with Phil Beda of NWS Hastings.

Edward Stoll 50 Year Length of Service Award: The National Weather Service proudly presented George Umbarger of Genoa, Nebraska, with the award for his 50 years of service in the NWS Cooperative Weather Observer Program.

George started taking observations April 1st, 1964. He measures temperatures and precipitation each day and also downloads data off an automated rain gauge each month.

As of March 31st 2014 George has measured 1397.38 inches (116 feet) of liquid precipitation. The most precipitation measured was in 1982 when 41.08 fell during that very wet year. The driest year recorded was 1974 when just 14.22 inches fell. On average the Genoa area sees 26.23 inches of liquid precipitation per year.

Over the past 50 winters George has measured 1550 inches (129 feet) of snow. The least amount of snow he measured was 8.0 inches during the winter season of 1967 - 1968. The most snow measured in one snow season was 77.3 inches during the winter of 1983 - 1984. The average snow fall for the Genoa area is 29.6 inches of snow.

For temperatures, George has seen temperatures climb to 108 degrees, which occurred in June 1988, while his coldest temperature was -30 degrees in January 1974.

We are hoping that his son Stan will take over for George when he decides to retire in a few years or even 10 years if we are lucky.

John Plock (left) with Mike Reed of NWS Hastings.

20 Year Length of Service Award: The National Weather Service proudly presented John Plock with the 20 Year Length of Service Award on April 15, 2014. Mr. Plock has been the official NWS Cooperative Weather Observer near Shickley, Nebraska, since 1994.

During his 20 years of data collection, John has measured 532.94 inches of rain (over 44 feet). The wettest year during this time frame was 2001, with 35.52 inches of rain. The driest year during this time frame was 1994 with 18.77 inches of rain.

Thanks to the dedication of Mr. Plock, the climatic database for the Shickley area continues to be populated with reliable information provided by his reports.

A Look Back At The Weather of the 1880s - *Julia Berg, General Forecaster*

A tornado struck Thayer County, Nebraska on June 20th, 1881 and did significant damage. In addition to the tornado, there was hail and significant rainfall. As writing styles have changed over the years, it is nice to go back and see the written history. One book portrayed this account in an exciting yet dramatic flair.

A tornado, the most destructive that ever visited the county, came on the evening of the 20th of June, 1881. June seems to be the month of wrath among the upper elements. The same locality was again visited, but with more fearful and fatal results.

On that evening, the sun sank to rest amid a heavy bank of clouds, which worked up from the northwest against a northeast wind. About 9 o clock the rain began to fall, accompanied by a slight hail. Suddenly the wind sprang up with terrific fury, the rain falling in perfect torrents, mingled with an unprecedented fall of large and small hailstones. In less time than it takes to relate it the hail had smashed every window light and frame, filling the houses with water and hail to the depth of several inches. The wind moaned and wept like a lost child for its dead mother. Strong, brave men, awe stricken, fear-benumbed, stood pale and trembling amid the falling wrecks, feeling the doom of death rushing without warning upon them. The fearful velocity of the animated air drove the hail through the roofs and siding of the houses, pelting the terror-stricken inmates, smashing dishes and furniture and ruining household goods generally. The poor, unprotected beasts, those that were not killed at once, ran wild, bellowing and fighting with the pain of pelting rock.

Every house was damaged from $25 upward. Crops were driven into the ground or blown away so completely that it was difficult to tell the next morning that the fields had the day before possessed a sign of vegetation, whereas they were in their glow and glory, smiling with perfect prospect to the farmer of a bounteous harvest.

The Big Sand, that half an hour before ran scarcely two feet of water, was pouring down its valley a flood over twenty-two feet deep, carrying before it death and desolation. The southern part of Alexandria was inundated. The railroad bridges and the track was for miles swept away.

The course of the storm was southeast, and for thirty miles, with a path varying from three to six miles, it carried ruin and desolation in its wake.

Historical account from:

"History of the State of Nebraska"
A.T. Andreas, Proprietor
1882

New Airport Forecast for the Kearney Airport - *Jeff Halblaub, Aviation Program Manager*

Pilots flying into or out of the Kearney Regional Airport will soon have new weather information to help them in making better flight-related decisions. The National Weather Service (NWS) provides specialized weather forecasts for aviation, called Terminal Aerodrome Forecasts (TAF). These forecasts are used for planning purposes and provide forecasts of winds, sky cover, cloud heights, visibility, wind shear, and precipitation. They are used by pilots, airport personnel including air traffic controllers, regional aviation weather centers, and airline dispatchers.

The NWS offices serving Nebraska write TAFs for eleven airports for the State. However, the Kearney airport is not among them, and Kearney is the 4th busiest airport in the State, based on the average number of takeoffs and landings per day. TAFs are only provided for airports that have commercial passenger service. Even though Grand Island has more commercial passenger service, the Kearney airport is actually busier by a slight margin. During the 12 month period ending in July 2013, the Kearney airport averaged 82 aircraft operations per day. Grand Island averaged 71.

NWS Hastings worked with the Kearney airport manager and area aviation customers to determine the need for a TAF. As a result, the airport staff decided to request the initiation of a TAF with the Federal Aviation Administration and NWS Headquarters. The NWS Hastings will begin issuing the new TAF on July 1st. TAFs will then be generated regularly, every six hours, unless the weather warrants an update. This will be an adjustment for the staff at the Hastings NWS. So, during the month of June, forecasters will compose the new TAF internally so they can become familiar and acquainted with the change. Currently, the Hasting NWS only issues a TAF for the Central Nebraska Regional Airport, in Grand Island. Most of the time, the weather will not be appreciably different between the two airports. However, when precipitation and fronts are in the area, the differences will become very important.

Some Kearney customers have indicated their need for a TAF. When returning from flying across the United States, if the flight is near the maximum range of the aircraft fuel capacity, a TAF will help them ascertain if and where they may need to stop for fuel. It would also help in determining if flight conditions will be favorable for takeoffs and landings. The bottom line is that these forecasts will enable users to make the best decisions possible to maximize safety, reduce delays, and save money.

How Can You Stay Cool This Summer?

Unscramble each of the clue words.

Copy the letters in the numbered cells to other cells with the same number.

MURESM (15)

UNS (18)

MUTRATPEERE (6)

TAHE NIDXE (1)

HAET ONUHTASXEI (12)

TEAH PARSMC

EATH KOTRES (5)

MRREATYPIEHH (11 8)

LIVTEALROTU DARTOINIA (7 14 17 4)

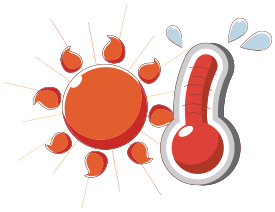
RIEVEATL DIIHYMTU (3)

TIWDEONP (10)

NIDW (9)

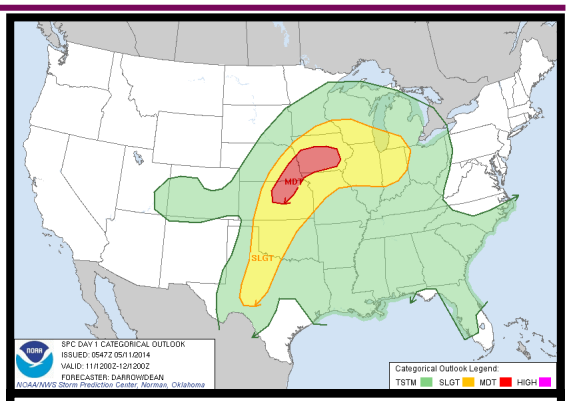
TERHENFAHI (13 2 16)

1 2 3 4 5 6 7 8 9 10 11 12 13 13 14 15 16 17 18 !



FAQ - What Is A Convective Outlook? - *Shawn Rossi, Lead Forecaster*

Multiple times a day, the Storm Prediction Center (SPC) in Norman, OK issues broad convective outlooks for the continental United States. These outlooks go from the present day (Day 1) through 8 days out. Because the greatest confidence is generally in the first three days of any forecast, oftentimes the extended outlook portion of the forecast (Days 4 – 8) is characterized as "**PREDICTABILITY TOO LOW**." According to SPC, this phrase is used to indicate "severe storms may be possible based on some model scenarios, however, the location or occurrence of severe storms are in doubt due to: 1) large differences in the deterministic model solutions, 2) large spread in the ensemble guidance, and/or 3) minimal run-to-run continuity." Basically, there is little model agreement during those particular days to have a high confidence in a severe thunderstorm forecast.



The outlook for Severe Weather issued by the SPC at 12:47 AM CDT May 11th, 2014.

Image of a large tornado that produced significant damage near Sutton, NE May 11th, 2014. Photo courtesy of Phillip Lueking.

In the short term portions of the forecast (Days 1–3), you may have noticed words or maps predicting a slight, moderate or high risk of severe weather for a given location. While forecasting rare events such as tornadoes and the occurrence of large hail and damaging wind gusts is a very difficult task, SPC does its best to assign probabilities to their individual occurrence in the Day 1 outlook, and the overall general risk for severe weather in the Days 2 and 3 outlooks. Furthermore, the probabilities used in the outlooks are known as subjective probabilities. Basically, the forecasters make *their* ***best estimate*** of the probability of an event **occurring within 25 miles of any point** during the outlook period. These probabilities are then used to classify the outlook for a particular day as containing a slight, moderate or high risk for severe weather. For more information on how the SPC makes their forecasts and what they mean, see: http://www.spc.noaa.gov/products/outlook/probinfo.html

So what does this mean to you? Basically, when the SPC has characterized the area you live in as being in a risk for severe weather on any given day, the awareness for the development of severe weather across your area should be heightened, and it would be a good day to monitor the developing weather situation via any means you have at your disposal.

Beat The Heat! Check the Backseat!

Each year, dozens of children and untold numbers of pets left in parked vehicles die from hyperthermia. Hyperthermia is an acute condition that occurs when the body absorbs more heat than it can handle. Hyperthermia can occur even on a mild day. Studies have shown that the temperature inside a parked vehicle can rapidly rise to a dangerous level for children, pets and even adults. Leaving the windows slightly open does not significantly decrease the heating rate. The effects can be more severe on children because their bodies warm at a faster rate than adults.

Safety Tips Concerning Children...

- **Make sure your child's safety seat and safety belt buckles aren't too hot** before securing your child in a safety restraint system, especially when your car has been parked in the heat.
- **Never leave your child** unattended in a vehicle, even with the windows down.
- **Teach children not to play** in, on, or around cars.
- **Always lock car doors and trunks** - even at home - and keep keys out of children's reach.
- **Always make sure all children have left the car** when you reach your destination. Don't ever leave sleeping infants in the car!

Terrible Tuesday - May 5, 1964

Monday, May 5, 2014, marked the 50th anniversary of a historic, damaging and deadly tornado event that affected several counties within central and eastern Nebraska. Within the present-day NWS Hastings coverage area, two particulary damaging/violent tornadoes, one rated F5 and another rated F4, struck on that Terrible Tuesday.

As a matter of fact, the F5 tornado that trekked nearly 70 miles from eastern Adams County to northwestern Butler County was *THE LAST F5/EF5 TORNADO RECORDED WITHIN NEBRASKA* (there has not been one rated this strong since).

For some folks in central and eastern Nebraska, May 5, 1964, started out like any other day, but by sunset would be a day of total destruction. During the afternoon, severe thunderstorms flared up and quickly pushed northeast. One of these storms spawned an F4 tornado that initially touched down in southeastern Greeley County and destroyed much of the community of Wolbach and caused several injuries (although fortunately no fatalities).

However, the biggest tornado was yet to come: By 5 p.m., a tornado touched down just southeast of Hastings and developed into an F5 on the Fujita Scale (the strongest possible). Two people were killed by this tornado on a farm three miles northwest of Bradshaw, and there were also numerous injuries, including 15 near Shelby. Fortunately, several towns along the way were narrowly spared a direct hit, including Hampton, Bradshaw, Benedict, Stromsburg and Shelby. There was complete destruction of all farmsteads in the direct path.

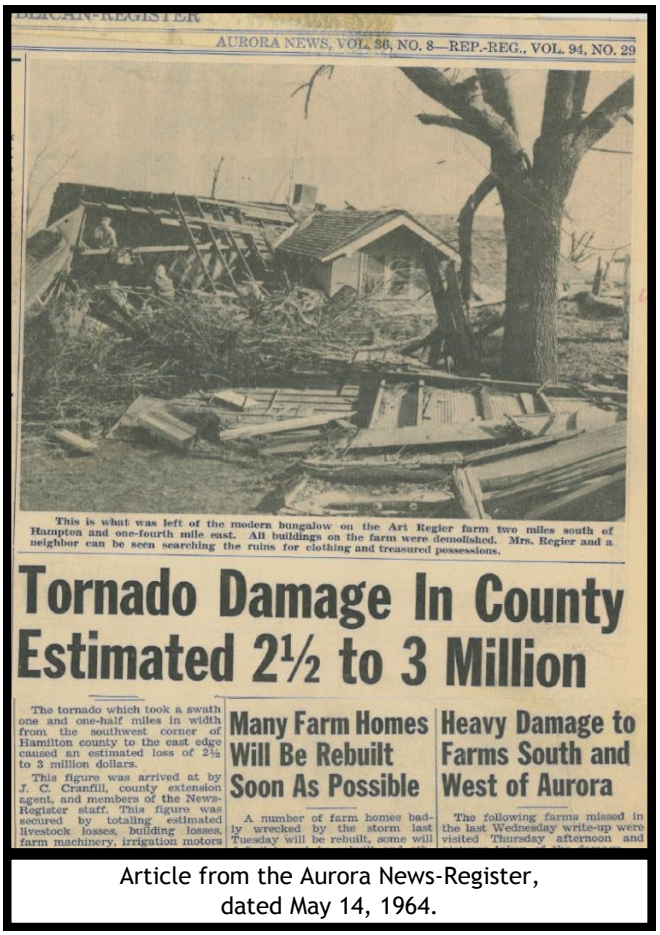
It was a large and intense tornado that completely destroyed at least a dozen of these farms within the first 30 miles. The tornado width was generally 1/4 mile and at times 2-3 separate damaging funnels extended from the same cloud. Severe hail preceded, accompanied, and followed the funnel contact with the ground. After lifting near Bellwood in Butler County, the tornado briefly touched the ground a few times in the next 40 miles. There was a heavy loss of livestock. (The preceding information is based on data published in NCDC StormData, and supplemented by information in the book 'Significant Tornadoes 1680-1991', by Thomas P. Grazulis)

Irrigation pipe in the trees on the Walter Troester farm, located 4 miles east and 3.5 south of Aurora, then back in the field nearly half a mile. All the buildings on the farm are gone.

Photo courtesy of the Aurora News-Register, dated May 14, 1964.

More information about this event can be found here:

http://www.crh.noaa.gov/gid/?n=may51964f5tornado



AURORA NEWS, VOL. 36, NO. 8—REP.-REG., VOL. 94, NO. 29

This is what was left of the modern bungalow on the Art Regier farm two miles south of Hampton and one-fourth mile east. All buildings on the farm were demolished. Mrs. Regier and a neighbor can be seen searching the ruins for clothing and treasured possessions.

Tornado Damage In County Estimated 2½ to 3 Million

The tornado which took a swath one and one-half miles in width from the southwest corner of Hamilton county to the east edge caused an estimated loss of 2½ to 3 million dollars.

This figure was arrived at by J. C. Cranfill, county extension agent, and members of the News-Register staff. This figure was secured by totaling estimated livestock losses, building losses, farm machinery, irrigation motors

Many Farm Homes Will Be Rebuilt Soon As Possible

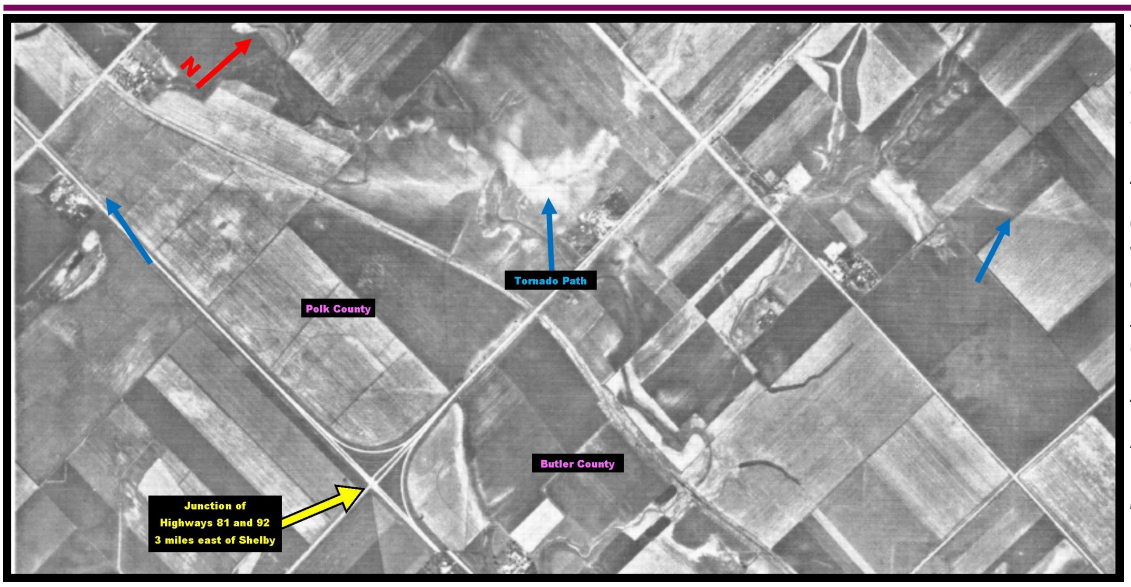
A number of farm homes badly wrecked by the storm last Tuesday will be rebuilt, some will

Heavy Damage to Farms South and West of Aurora

The following farms missed in the last Wednesday write-up were visited Thursday afternoon and

Article from the Aurora News-Register, dated May 14, 1964.

Terrible Tuesday continued...



The image to the left is an aerial view of the tornado track (blue arrows), taken the next day, May 6th.

The tornado passed from eastern Polk County into western Butler County, in close proximity to the junction of Highways 81 and 92 east of Shelby.

The image, taken by Park Aerial Surveys of Louisville, KY, was published in the Monthly Weather Review publication of December 1964.

Fujita Scale Vs Enhanced Fujita Scale

FUJITA SCALE		ENHANCED FUJITA (EF) SCALE (implemented February 2, 2007)	
F Number	3-Second Gust (mph)	**EF Number**	**3 Second Gust (mph)**
0	45-78	**0**	**65-85**
1	79-117	**1**	**86-110**
2	118-161	**2**	**111-135**
3	162-209	**3**	**136-165**
4	210-261	**4**	**166-200**
5	262-317	**5**	**Over 200**

See You At The Fair!

Fried Pickles, Concerts, Corn Dogs and the Sky Tram, what could be better? Well, stopping by and seeing us at the Nebraska State Fair, of course!

We will again be staffing a booth at the 2014 Nebraska State Fair. Located in the same location as previous years, you can find us in the southwest corner of the Exhibition Building near the restrooms; booth Q112. Look for newly upgraded "Lightning Ball."

You can watch live radar coverage, enter to win a NOAA weather radio, watch how lightning is generated and see how a tornado forms all from our booth! And best of all you can come visit with a meteorologist. Who doesn't love chatting about the weather? Stop by and say "Hello!"

Nebraska State Fair: August 22nd - September 1st

This Table Reflects Various Historical Summer Extremes For The Local Area...

	Hottest *Calendar Month* Avg. Max Temp (June-August)	Coolest *Calendar Month* Avg. Max Temp (June-August)	Average # of Annual Days That Reach *At Least* 95˚	Highest *Calendar Month* Summer Rainfall (June-August)	Lowest *Calendar Month* Summer Rainfall (June-August)
Grand Island	103.3˚ / Jul 1934	73.6˚ / Jun 1945	**15**	13.96” / Jun 1967	0.01” / Jul 1936
Hastings	103.3˚ / Jul 1936	72.6˚ / Jun 1945	**14**	11.71” / Jun 1915	0.16” / Jul 1983
Kearney	100.4˚ / Jul 1901	72.7˚ / Jun 1945	**12**	15.14” / Jun 1967	0.13” / Jul 1997
Osceola	103.3˚ / Jul 1936	74.6˚ / Jun 1915	**8**	14.81” / Jun 1967	Trace / Jul 2012
Red Cloud	104.4˚ / Jul 1934	75.8˚ / Jun 1928	**24**	13.52” / Jul 1902	0.13” / Aug 1929
Alton, KS	104.8˚ / Jul 1936	76.3˚ / Jun 1945	**36**	19.27” / Jul 1993	Trace/ Jul 1935
Plainville, KS	103.3˚ / Jul 1934	74.6˚ / Jun 1928	**29**	17.94” / Jul 1993	0.06” / Jul 2003

Summer Climate Outlook Detailed Below...

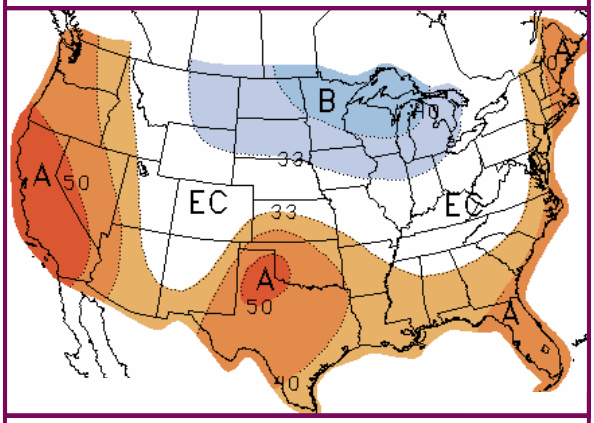
The latest Summer Outlook from the Climate Prediction Center very slightly favors above normal precipitation for the majority of South Central Nebraska and North Central Kansas, and calls for equal chances of above normal, below normal or near normal temperatures.

Time Frame: The NWS considers the “summer” season to be all of June, July and August. Although this differs somewhat from the astronomical summer season that runs from June 21-September 21, using these three full calendar months is convenient for calculating meteorological data.

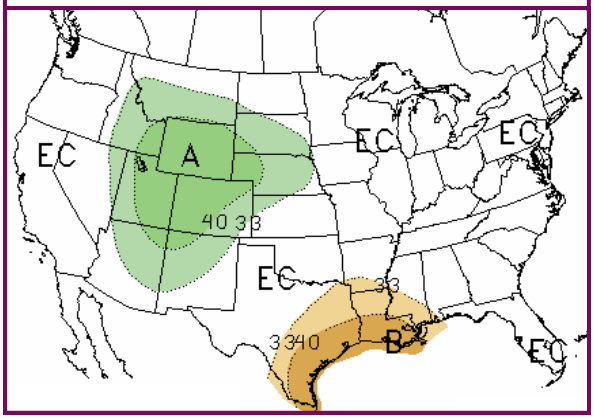
Temperature: The outlook on the right reflects a forecast for the *3-month period as a whole*. We tend to view temperatures in the context of a daily or monthly average, but the 3-month outlook accounts for the entire season. **Red/orange** colors represent “**warmer**” than normal and **Blue** colors represent “**cooler**” than normal. The white area labeled “Equal Chances” designates regions with equal chances of having above, near or below normal temperatures. This means there is no clear trend in the forecast analysis to support one of these outcomes over another. As the image shows, the local area is almost *entirely* in the “equal chances” portion of the outlook. As a result, there is currently not a strong enough indicator in long-range forecasts to justify either above or below normal temperature expectations.

Precipitation: Similar to temperatures, the precipitation outlook depicts the total precipitation trend for the entire 3-month period, and is independent of individual days or months. **Green** colors represent “**wetter**” than normal and **Orange/brown** colors represent “**drier**” than normal. The white area labeled “Equal Chances” designates regions with equal chances of having above, near or below normal precipitation. As depicted, most of (but not all) of the local area is actually *very slightly favored* (33-40% chance) to observe above normal precipitation this summer. However, this still means there is a 33% chance of observing near normal rainfall and a 27-33% chance of rainfall being below normal. In other words, this is not necessarily a very high-confidence forecast for above normal summer precipitation. As is the case with the temperature outlook, the precipitation outlook does not forecast *how much* above or below normal precipitation might be.

Temperature Outlook for Summer 2014 (June - August)



Precipitation Outlook for Summer 2014 (June - August)



To view these and other Climate Prediction Center outlooks visit ***http://www.cpc.ncep.noaa.gov/***

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