Winter 2015

The Quarterly Hail

National Weather Service - Hastings, Nebraska

Volume 5, Issue 4

Notes From the Meteorologist In Charge

Now at the end of 2015, we take a second and reflect on the blessings we have been given through the previous year. Since April we have experienced opposite ends of the weather spectrum. After a relatively wet start to the growing season, things warmed up and dried out as harvest approached.

As we head into winter, there are the usual doomsday prognostications by some. The rumor wheel is spinning full blast. I have heard people saying they heard it was going to be the snowiest winter ever, from others that it was going to be dry and warm. Not sure who is the source, but we can provide you the official NWS forecast. This calls for a slightly warmer than normal winter with a bit above average precipitation. For clarity, when we say above normal temperatures, we are not saying there cannot be a record cold temperature or two broken or a period or two of cold. What we are forecasting is the average temperature over a 90 day period to be warmer than normal. To be right, we only have to be 0.1˚ or more warmer! However, to get that, there would need to be prolonged periods of above normal temperatures to counteract those inevitable cold outbreaks. Also, slightly above normal precipitation doesn't necessarily mean we expect precipitation 4 out of 7 days of every week. In fact, we may only have two or three heavy snows, or even an ice storm, with long dry stretches in between. I just wanted you to be aware of the "fine print" of the forecast.

No matter what happens, we will be below freezing for long enough periods of time that moisture will freeze. When water freezes in relatively flat rivers, it is very common for ice jams to form. With all the development near rivers, this presents a real threat to people's property and livelihoods. Looking at a topic covered in this edition, freezing temperatures and moisture can also combine to cause ice to form on the wings of airplanes, which is not a good thing if the plane wants to remain in the air!

I assure you the staff remains committed to provide the best service possible for you to make informed decisions about the impact of weather on your life. We will be relying on your quality and timely reports to help us be as accurate as the science allows.

On behalf of my staff, I wish you a very safe and winter season. May you and your family be richly blessed this holiday season!

Steve Eddy
Meteorologist In Charge, National Weather Service Hastings, Nebraska
Steven.eddy@noaa.gov
402-462-2127 x642

Inside this issue:

Special Points of Interest:

- *Attending the 17th High Plains Conference.*
- *Learn more about our Holm Award winner!*
- *What is the coldest Christmas Day on record in Grand Island?*
- *Tis the season for Ice Jams!*

17th Annual High Plains Conference - *Rick Ewald, Science and Operations Officer*

Approximately 50 weather enthusiasts attended the 17th Annual High Plains Conference in Goodland, KS, August 12-13. The majority of the attendees were from Kansas and Nebraska, but also included participants from Missouri, Colorado, South Dakota and even California and Ohio.

NWS Central Region Director Chris Strager gave the Keynote Address, talking about the Weather Ready Nation Roadmap and the role of the NWS in that initiative. Specifically, Mr. Strager discussed the future of the NWS and possible changes to how we operate in order to better serve our customers.

The banquet speaker was Dave Freeman, Chief Meteorologist at KSN-TV in Wichita, KS. Mr. Freeman is also the President-Elect of the National Weather Association. The focus of his talk centered on a concept to simplify the numerous weather warning and advisory products currently available to the general public.

Over twenty presentations were given during the two-day event, including three by staff members of WFO Hastings. Jeff Halblaub gave a talk on a difficult-to-forecast winter weather event that occurred in February of 2014. Jeremy Wesely's presentation provided the group with a glimpse of future weather technology for hydrology forecasting called Multi-Radar/Multi-Sensor (MRMS). Jeremy participated in a field experiment to test MRMS recently in Norman, Oklahoma. Finally, Joe Guerrero and Rick Ewald teamed up to present on various radar and environmental parameters as they relate to Impact-Based warning tag guidelines.

A student paper competition was also held with four entries from meteorology graduate students. The winning presentation was by Kevin Wagner from the South Dakota School of Mines & Technology, who spoke on a severe weather event involving the interaction between a supercell and a squall line.

All in all the conference was very successful with the hosts from Goodland doing a great job. Next year, the 18th annual conference will be held in North Platte.

Cold Snap: December 1973 to January 1974 - *Julia Berg, General Forecaster*

The months of December, January and February are the coldest months of the year. There usually is a stretch in there where temperatures are warmer, sometimes called the "January Thaw", but these are usually fairly short lived, especially during cold years. This is a story of the opposite.

In December of 1973, a few snow storms moved through the Plains. The first one was December 14th, with another on the 19th. For those wanting a white Christmas, there was snow on the 24th. The snow kept piling up and by Christmas morning there was 12" of snow on the ground in Grand Island, 16" in Hastings, and 20" in York. Alton, KS even had 3".

A bitterly cold air mass then moved into the area and brought a stretch of cold temperatures to the area. Starting on December 30th across south central Nebraska and the 31st in north central Kansas, temperatures started to plummet. Ushering in January of 1974 was a stretch of 14 days where temperatures dropped below zero almost every night. Highs during the day were mostly in the single digits, with a few teens.

During this period, the coldest temperature reported was -31° at Greeley on January 12th. Some locations reached their lowest temperatures on January 4th, but most of the coldest temperatures were the morning of the 12th, which was the last day most locations dipped below zero. The "January Thaw" came just a few days later. High temperatures on the 15th reached the 50s for most and started to melt the snow.

What Is A Bright Band? - *Merl Heinlein, Lead Forecaster*

When you hear a meteorologist mention the words, “bright band”, what comes to your mind? Is it a bright bolt of lightning in the sky? Maybe a narrow band of snow on the ground from a winter storm system? Perhaps it’s a white band of billowy clouds? None of these is correct. The term, bright band, refers to what we see virtually on our computer screen when we look at radar data.

Before we go any further with the description of a bright band, we need to know the basics of how the radar works. The radar sends out pulses of energy, and when these pulses of energy hit a particle (such as rain or snow) in the air, the pulse of energy bounces off of this particle and returns to the radar. The return of this energy is called a radar echo. The radar rotates in a circle in order to scan data of the particles that surround the radar, and does this at several levels above the ground. This cycle (volume scan) is completed roughly every 5-10 minutes, depending on what particular setting [or volume coverage pattern (VCP)] is used.

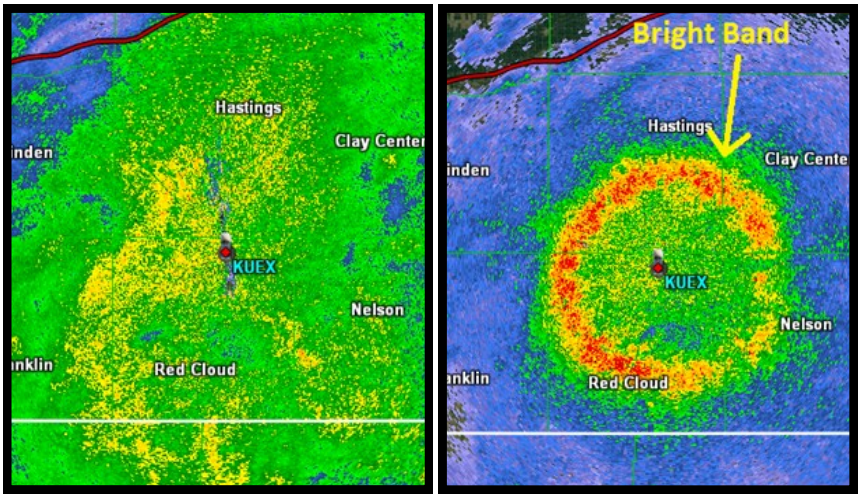
We get two types of information from these radar echoes, reflectivity and velocity data. Velocity refers to the motion of the echoes, which we will not focus on here. Rather, we will focus on reflectivity data. Reflectivity, in a nutshell, just lets us “see what’s out there”. You may see images of radar that include colors from blue to green, to red and yellow. Typically, blue and green correspond to where there is less precipitation (weaker echoes), while yellow and red represent where there is heavy precipitation (stronger echoes). Unfortunately, things can become a little more complicated than this.

Sometimes, we can get stronger echoes when the center of a precipitation particle is ice, but has a thin coating of liquid water around it. This is when bright-banding occurs. This happens when snow falls toward the ground and enters a melting layer. There is a short period of transition as the snow melts, when there is a thin coating of liquid water surrounding the ice, before it becomes just rain as the particle continues to fall into warmer air. It’s within this layer, when snow is transitioning to rain, that we can get a bright band of yellow and red colors from our reflectivity data. This term originated from the use of old radars before color curves came along with the more modern WSR-88D radars. The band around these older radars would give a fluorescent glow, hence the phrase, bright band, came along. This bright band can surround the radar, and give us an idea of how high the freezing level is. After talking about this as a melting layer in respect to snow falling, it may seem confusing to call it the freezing level. Think of it this way, the freezing level is where one encounters freezing while traveling higher into the atmosphere, if you start at a warmer surface. Once we know how high the freezing level is, we can get a better idea of the trends of precipitation types, and get an idea of when rain may change to snow, or vice versa, depending on the change of the freezing level, indicated by the bright band.

These images show reflectivity data, with the red dot in the middle indicating the radar location near Blue Hill, NE.

The left picture reveals data near the surface on the 0.5° “slice”, showing quite a bit of light to moderate rain nearby.

In the picture on the right, reflectivity in the 4.5° “slice” shows a fine example of a bright band ranging from about 5000-6500 feet above the surface (near 5000 feet to the northwest of the radar and 6500 feet to the southeast). Notice that the band is a little closer to the radar on the northwest side, thus it is lower to the ground compared to the southeast.

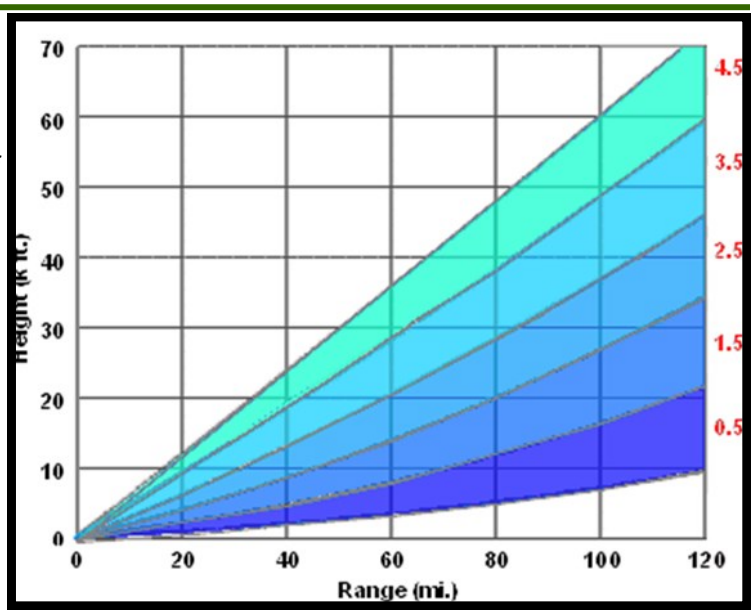


What Is A Bright Band? *Continued...*

Because of the different angle of the radar beams (or "slices"), the farther away a particular beam is from the radar, the higher off the ground it is. The graphic to the right explains what happens as each beam travels from the radar (in this case, on the left side of the graphic), and travels farther away (to the right). In this case, there are 5 beams that complete a circle around the radar that make a volume scan. If the bright band were closer to the radar, that would indicate a lower freezing level, and if the band were farther from the radar, then the freezing level would be higher. We have a feature on our radar called Dual Pol, that also helps us with determining precipitation types, among other things.

Well, there you have it. The bright band is one of several radar signatures that we use to get a better idea of what is going on and what may soon happen.

So, if the forecast is for rain changing to snow, you know that we may be looking for that bright band!



Values in **red** represent the different elevation angles or "slices" in this VCP. This table shows the approximate height and width of the radar beam with distance from the radar site.

Cooperative Observer News - John Campanius Holm Award

The National Weather Service office in Hastings, NE, presented the John Campanius Holm Award to Roger Bodtke, our observer for Shelby 3NE, for his excellent work with the Cooperative Observation Program.

Steve Eddy (left) and Mike Reed (right) of NWS Hastings present Roger and his wife Joyce with the Holm Award.

This is a prestigious award, given to no more than 25 qualified NWS observers nationwide each year. There are over 8,700 observers in the program. This award is to honor observers for outstanding accomplishments in the field of meteorological observations.

Roger received letters from friends, family and former colleagues in support of his nomination, which were forwarded with the nomination package and helped ensure he received the award.

Our observers are very special and dedicated people. Each and every morning, Roger records precipitation, including rain, as well as snowfall and snow depth, and electronically submits his report to our office in Hastings. Roger started as the observer for Shelby on June 1, 1994, and has taken almost 8,000 observations since then.

Here are some statistics during Roger's time as the observer. He has measured over 550" of rain (over 46 feet). The wettest year was 2008, with almost 36" of rain. June 2010 was the wettest month, with over 10" of rain, compared to the driest year in 2002, with just over 18" of rain.

Roger has also measured 612" of snow (51 feet). The snowiest season was the winter of 2009-2010, with 62" of snow. The snowiest month was December 2009, with 28.7" of snow. Compare that to the winter of 1999-2000, with the least amount of snow totaling only 16".

MOM: Mind of Marla - *Marla Doxey, Data Acquisition Program Manager*

With such nice warm fall weather, everyone is wondering what kind of winter we will have. Will it be cold and snowy, mild and wet, a little of both? Ask me next March and I will tell you. Winter weather in the Central Plains is anyone's guess. A couple things we can be sure of. It will be cold, and we will have snow.

In preparation for the snow season, please make sure the inner measuring tube and funnel have been removed from your gauges and stored indoors. You will need them to measure your melted snow. There are 3 measurements you will be taking/recording each day, let's review them:

1) Precipitation: This can be rain, drizzle or melted snow/sleet/freezing rain. Always measured to the nearest hundredth. (0.00, T, 0.06, 0.15, 1.32, etc.)

2) Snow Fall: This is the amount of new snow that has fallen in the last 24 hours (since your last observation). Always measured to the nearest tenth. (0.0, T, 0.4, 1.8, etc.) **Your snow fall should not be reported in even inches each and every time, as in 1.0, 3.0, 4.0.**

If snow has fallen in the past 24 hours but there is no accumulation, you would report a Trace (T).

3) Snow Depth is the combined total depth of both old and new snow on the ground. It is reported to the nearest inch. If you measure less than a half inch of snow, it would be reported as a Trace (T). Let's say you measure a half inch to around an inch, then it would be one inch (1). Snow drifts, north side of buildings or areas under trees are not measured.

If snow depth is uneven, take a number of readings across your area and average them.
REMEMBER: We need a current snow depth reading at every observation.

What if there are bare spots?

- If bare spots cover less than 50% of your snow depth area, average the bare spots with measurements from areas that have snow, and report the average value as your snow depth.
- If the bare spots cover more than 50% of your area, regardless of how deep the snow is in the rest of the snow measuring area, report a trace for snow depth.

What if there is wind with the snow?

It seems more like, when isn't there wind when it snows. Windy conditions always make it difficult to get accurate snow measurements. There are times where you may have to take a snow core with your can in an area representative of new snow fall amounts. Turn the can upside down and pretend you are cutting a biscuit out of the snow, scoop it into the can and melt it.

Additional Items:

Please do not put hot water in the plexiglass measuring tubes as it may cause them to leak. Use warm water only.

Snow measurement videos can be found at:

http://www.cocorahs.org/Content.aspx?page=training_slideshows

https://www.youtube.com/user/cocorahs

Cooperative Observer Spotlight - Clifford Roach of Alton, KS

A Salute To Clifford Roach
NOAA Weather Reporter Since May 2008
Written by Deanna Roach

When Clifford Roach of Alton, KS, learned to drive it was in a Model A. He was just a kid those many years ago and today, at nearly 93 years of age, Clifford is still a kid at heart and still having fun in a Model A Ford.

A heap of living goes on in a life span of 90 plus years, especially when one is a member of the "Greatest Generation," which aptly describes Clifford, a lifetime Alton area farmer in overalls whose work ethic and sharp mind continue to amaze all who know him.

Like all farm kids, Clifford learned responsibility at an early age, both on the farm - where, at age 11, he had to take over the harvest-time operation of his Dad's 2030 Wallis tractor during the Depression when the hired man couldn't get onto pulling the Baldwin combine with it - and in country school - where the teacher skipped him a grade and sometimes put him in charge. Before his sophomore year at Harlan High (in nearby Smith County) the school board recruited 14-year-old Clifford to take over their "school bus" route and signed for him to get a 16-year-old's chauffeur's license, which enabled him to earn $30 a month for hauling as many as eight kids with him to school his last three years. In good weather Clifford drove his dad's new 1937 Ford and in bad weather he relied on their Model A.

Clifford continued farming with his father after graduating in 1940 and married his wife, Marcella, in August 1950. Their honeymoon to the West Coast and back - driven through 12 states - lasted over two weeks, but Clifford didn't miss out on much farming because it rained at home most of the time while they were gone. Today, Clifford is a 65-year-resident on the same farm where he and Marcella, who died in 1998, raised their four sons, who all farm near Alton, and their daughter, who lives in Denver. Nine grandchildren also grew up nearby and Clifford now has 19 great-grandchildren.

At the age of 73, when many are retired or at least thinking about it, Clifford was still farming full time (which included some gated pipe irrigation) and working circles around men half his age. Long before GPS was on the scene he was known throughout the Alton river valley for his "straight as an arrow" corn rows, but what really set him apart was the hobby that began when he bought a 1952 D Case in the fall of 1995.

"I bought it for an out-of-state collector," Clifford said back then, "but when I got it home I couldn't part with it. Well, one thing led to another, and pretty soon I owned a complete set of antique Case tractors."

Clifford had been struck with "classic tractor fever," a widely known ageless iron disease than can make grown men act like they are boys all over again. There's no cure once you get hit with it and, luckily, Clifford still had the courage to follow his dreams and the stamina to burn the midnight oil it took to restore all of the "basket cases" that began showing up almost overnight on his farm. Antique (tired) machinery was also acquired along the way and Clifford soon had it all ready for an "Old-Fashioned Wheat Harvest" (OFWH) just so his family could experience wheat harvest the way it was when he was a kid.

Cooperative Observer Spotlight *Continued...*

After a farm sale and semi-retirement in 2006, Clifford continued to farm the acreage around his home place with his antique machinery until finally selling all of it at auction in 2014. The family's OFWH that began in 1996 quickly grew into an annual "ageless iron" harvesting and threshing event that drew crowds from several states before the 15th and final one was hosted in 2012. ("Roach Family Harvest" Parts 1 and 2 and "Clifford Roach Auction" of 55 antique tractors can all be viewed on YouTube.)

Once the tractors were gone Clifford set about replacing them with a Model A because, like he said, "I learned to drive in a Model A and I want to end up in a Model A. I know them inside-out and can still make them run."

In 2004, after almost giving up, Clifford, then 81, finally located a Wallis tractor like his dad's. He was hobbling around on crutches and a broken leg while investigating it in a tangle of trees, but got it bought just in the nick of time before the "old man" who owned it died. Later, he had to come up with a second Wallis and "cannibalize" it in order to end up with one good one.

In 2014, he acquired a Model A, only to have to return it after uncovering a major problem with it, then after almost giving up, a second one arrived from New York State just in the nick of time for Clifford's wish to come true: he wanted to drive his 98-year-old neighbor, who was grand marshal, through the annual Alton Summer Jubilee parade.

Clifford Roach is living proof that you are never too old to follow your dreams or to share your time and talents. He has long been and still is a vital part of the Alton community.

The Danger Of Aircraft Icing - *Jeff Halblaub, General Forecaster*

Ice deposits on aircraft can cause major trouble. Planes are able to fly because wings are shaped so they control how the air moves past them. Faster movement of the air on the underside of the wings produces lift. However, when ice forms on the wings, it alters the shape of the wing profile, creating drag and reducing lift. The results can be catastrophic, with a loss of control.

Everyone knows that water freezes at 32° F. However, did you know that water can remain in its liquid form to temperatures as cold as -40° F? The term for this is "supercooled." Clouds can be comprised of either tiny water droplets or ice crystals, or a combination of both. Large portions of clouds in the lower to middle portions of the atmosphere are comprised of tiny droplets of supercooled water droplets. All these droplets need to freeze is an object, such as specks of dust from soil, or sea salt, or a plane. When the temperature of the air and the plane are below freezing, the cloud droplets freeze on the plane, when it flies into clouds containing supercooled water droplets. It only takes a paper-thin coating to modify the wing profile and alter the air flow. Liquid precipitation, such as freezing rain and freezing drizzle, can also result in icing on aircraft.

The Aircraft Owners and Pilots Association examined the causes of weather-related aircraft accidents, from 1990-2000. During that decade, they determined that 12% of weather accidents were related to icing. Of those accidents, 27% involved fatalities.

While larger aircraft are equipped with anti-icing or deicing systems, many light aircraft are not. It is critical for pilots to be aware of the potential for in-flight icing. That is where the National Weather Service's Aviation Weather Center (AWC) comes in. The AWC forecasts the locations of possible icing so pilots can avoid those areas.

Tis The Season For Ice Jams - *Jeremy Wesely, Lead Forecaster*

The season of ice jams is upon us! The two most notorious rivers for ice jams within our forecast area are the Loup and Platte Rivers. Ice jams can result in rapid river fluctuations and at times widespread flooding. Ice jams most commonly form as ice breaks up with warming temperatures. Therefore, ice jams most likely develop during a sudden warm up that follows an extended cold period. The melting ice chunks then float down river and get caught up at bridges, bends, and turns of the river. As ice blocks pile up, the flow of the river becomes restricted and may even become completely dammed up. We have some years where we see little or no significant ice jams and there have been other years where we have experienced several weeks of ice jam flooding. In the last 10 years we have seen occurrences of ice jam flooding during the months of December through March.

Ice jams typically break up when the increasing force of the pooling water behind the ice jam becomes great enough to break the dam. Warm temperatures may also allow enough ice melt to weaken the ice jam to the point of breakage. In extreme cases non-natural methods such as dynamite and ash have been used to help break up ice jams. Ash is dark in color which reduces the albedo or the amount of the suns radiation that is reflected away and thus increases the melting. The formation and breakup of ice jams are very difficult to predict and thus we encourage spotters and observers to report occurrences of ice jam flooding.

A Rare November Tornado

Over a two day stretch of November 16-17th the region felt the effects of a strong upper level low pressure system which moved out of the Rockies and through the Plains. On the 16th, this system was responsible for severe weather stretching from Texas into southern Nebraska. Significant precipitation (by November standards) fell across the entire area, as liquid precipitation (rain/melted snow) exceeded 1" for most, with a handful seeing 2-3". As the system moved through on the 17th, enough cold air built in to result in a narrow band of accumulating snowfall, which extended from central Nebraska down into far northeastern portions of New Mexico.

While there were reports from severe thunderstorms, the main story is the confirmed EF1 tornado that touched down in Furnas County in the Beaver City/Hollinger area. *For the NWS Hastings coverage area, this was the first tornado reported in the month of November since an F0 tornado touched down southwest of Ayr (Adams County) on November 5th, 2000. In fact, until this event, that tornado near Ayr in 2000 had been the ONLY November tornado confirmed in our area since records started in 1950*.

This tornado traveled north-northeast across rural areas of Furnas County south of Hollinger. It damaged power poles and trees south of Highway 89. After crossing Highway 89, it clipped a barn and farm storage area northeast of Hollinger. The western side roof covering was ripped from the barn and several grain carts were moved on the property, causing other damage. The tornado likely lifted a mile north of there.

The total path length was 12.75 miles with a maximum width of 400 yards (about 1200 feet). The maximum width was estimated from damage located approximately 4 miles north of the Kansas state line. During most of its path, the tornado was likely less than 100 yards wide.

This Table Reflects Historical Winter Extremes For The NWS Hastings area ...

	Warmest Winter High Temp On Record (Dec - Feb)	*Coldest* Winter High Temp On Record (Dec - Feb)	*Coldest* Christmas Day High Temp On Record	*Most #* Days Low Temps 0˚or Colder (entire winter)	Snowiest WEEK On Record (entire winter)
Grand Island	80˚ / 2-25-1995 12-6-1939	-11˚ / 1-12-1912 2-11-1899	7˚ / 1983	40 / 1935-36	28.0” Feb 26 - Mar 4, 1915
Hastings	80˚ / several..most	-9˚/ 12-22-1989	8˚ / 1983	35 / 1917-18	29.0” Feb 27 - Mar 5, 1915
Kearney	80˚/ 2-28-2006	-10˚/ 2-7-1933	5˚ / 1983	38 / 1977-78	25.0” Feb 27 - Mar 5, 1915
Beaver City	85˚/ 2-28-2006	-4˚ / 12-21-1983 1-18-1943	9˚ / 1983	29 / 1978-79	30.5” March 23-29, 1987
Osceola	81˚/ 2-28-1972	-12˚/ 2-1-1917	6˚ / 1983	39 / 1935-36	25.0” Feb 28 - Mar 6, 1915
Alton, KS	87˚/ 2-29-1972	-5˚/ 1-6-1912	15˚ / 2000 (1983 data missing)	23 / 1995-96	22.0” Feb 26 - Mar 3, 1912
Plainville, KS	85˚/ 2-29-1972	-5˚/ 12-23-1989	17˚ / 2009 (1983 data missing)	23 / 1995-96 1917-18	25.0” March 24-30, 1987

Winter Climate Outlook Detailed Below...

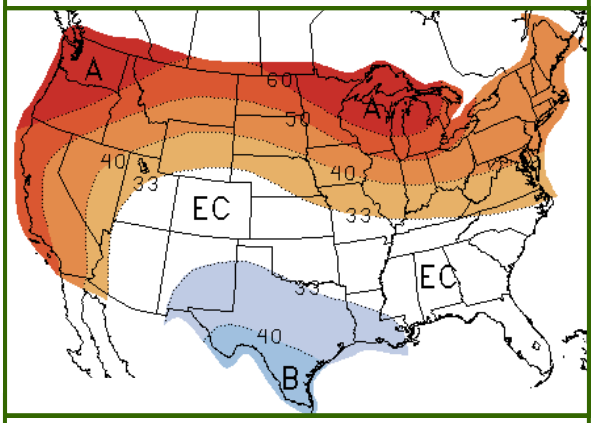
The latest Winter Outlook from the Climate Prediction Center modestly favors above normal precipitation and near-normal to above normal temperatures across the local area of South Central Nebraska and North Central Kansas. These expectations in the longer term weather pattern are generally consistent with a strong El Niño this winter, as above-average sea surface temperatures prevail within the equatorial Pacific Ocean.

Time Frame: The NWS considers the “winter” season to be all of December, January and February. Although this is offset roughly three weeks from the astronomical winter season that runs from December 21 - March 19, using these three full calendar months is more convenient for analyzing meteorological data.

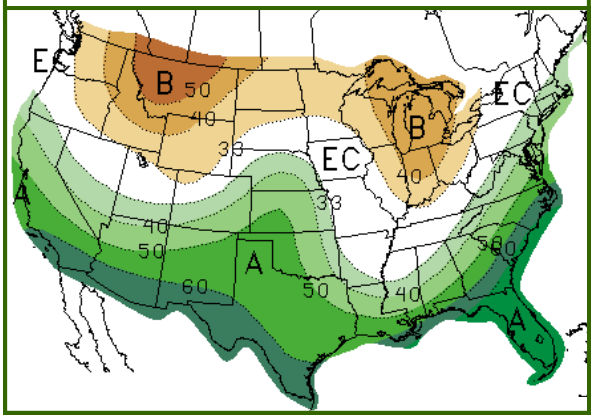
Temperature: The outlook on the right reflects a forecast for the *3-month period as a whole*. We tend to view temperatures in the context of a daily or monthly average, but the 3-month outlook accounts for the entire season. **Red/orange** colors represent “**warmer**” than normal and **Blue** colors 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 three outcomes over another. As the image shows, northern and eastern portion of the NWS Hastings coverage area are *slightly favored* (33-40% chance) to observe above normal temperatures for the winter as a whole. However, this still means there is a 33% chance of observing near normal temperatures and a 27-33% chance of below normal temperatures. Equal chances of above, below or near normal temperatures are anticipated over southern and western sections of the local area, meaning there are no clear trends to favor one outcome over another.

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 to the right, the entire local area is *modestly favored* (33-49% chance) to observe above normal winter precipitation, especially south of the Interstate 80 corridor. However, this still means there is a 33% chance of observing near-normal precipitation, and an 18-33% chance that it could possibly average below normal. As with temperatures, this outlook does not forecast *how much* above or below normal precipitation might be.

Temperature Outlook for Winter 2015-16
(December - February)



Precipitation Outlook for Winter 2015-16
(December - February)



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

National Weather Service

Weather Forecast Office
6365 Osborne Drive West
Hastings, NE 68901

Phone: 402-462-2127
Website: www.weather.gov/hastings
E-mail: w-gid.webmaster@noaa.gov
Facebook: US National Weather Service Hastings
Twitter: @NWSHastings

Meet the Rest of the Staff at WFO Hastings

Meteorologist-In-Charge

Steve Eddy

Warning Coordination Meteorologist

Mike Moritz

Science and Operations Officer

Rick Ewald

Data Acquisition Program Manager

Marla Doxey

Electronic Systems Analyst

Mark Fairchild

Information Technology Officer

Scott Bryant

Administrative Assistant

Vic Schoenhals

Electronics Technician

Mike Bergmann ● Jesse Wirtes

Meteorological Intern / Hydrometeorological Technicians

Briona Saltzman ● Joe Guerrero / Mike Reed ● Phil Beda

Lead Forecasters

Merl Heinlein ● Jeremy Wesely ● Cindy Fay

Shawn Rossi ● Jerilyn Billings Wright

General Forecasters

Julia Berg ● Angela Pfannkuch

Ryan Pfannkuch ● Jeff Halblaub