

Winter 2010/2011



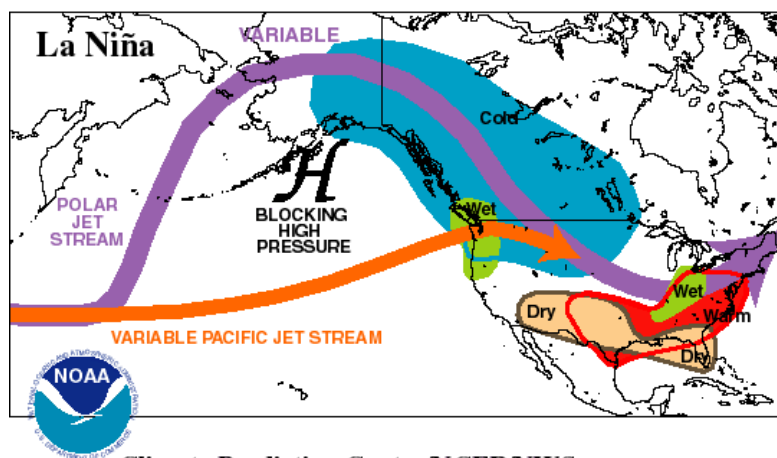
National Weather Service Dodge City

# Wild West Weather



## 2010/2011 Winter Outlook by Aaron Johnson, Science and Operations Officer (SOO)

The Climate Prediction Center (CPC) of NOAA's National Weather Service recently announced the presence of moderate to strong La Nina conditions across the eastern equatorial Pacific, with the expectation that these conditions will persist through the Northern Hemisphere Winter Season, before gradually diminishing through late spring of 2011. La Nina is the periodic cooling of ocean waters in the east-central equatorial Pacific, which can have an impact on the weather patterns across the globe.



Climate Prediction Center/NCEP/NWS

*The above graphic illustrates a northern shift in the polar jet stream and storm track, which are typical effects of La Nina conditions through the winter season across North*

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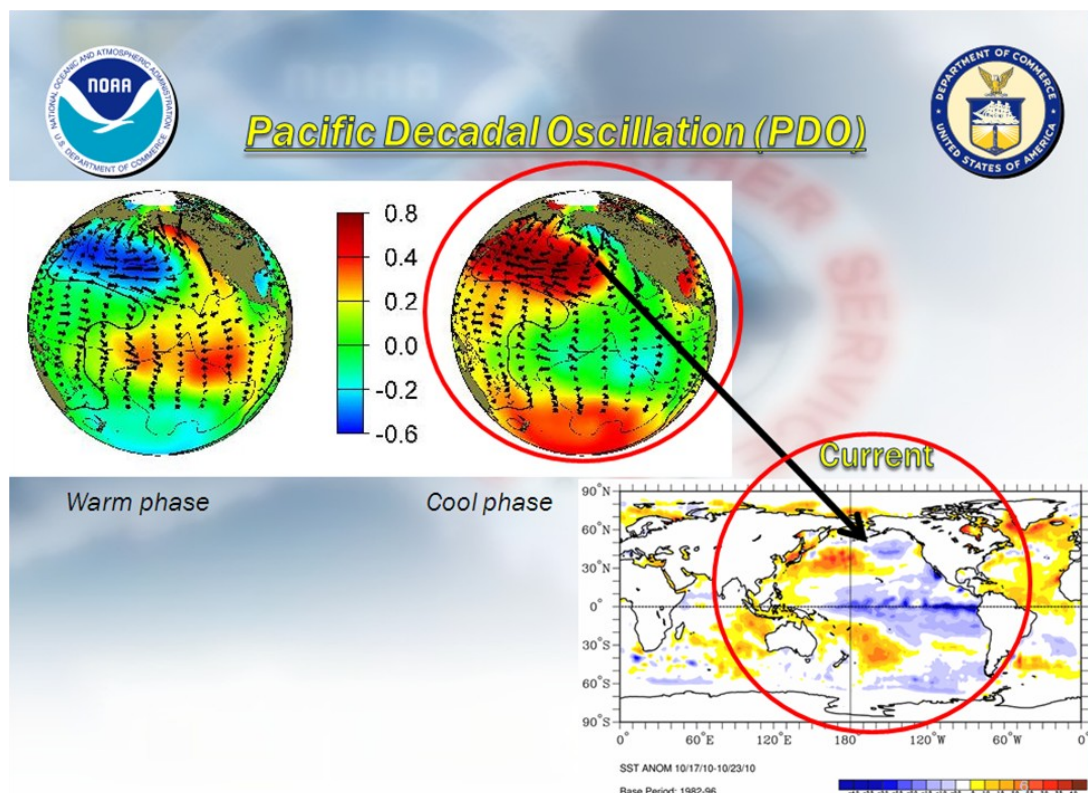
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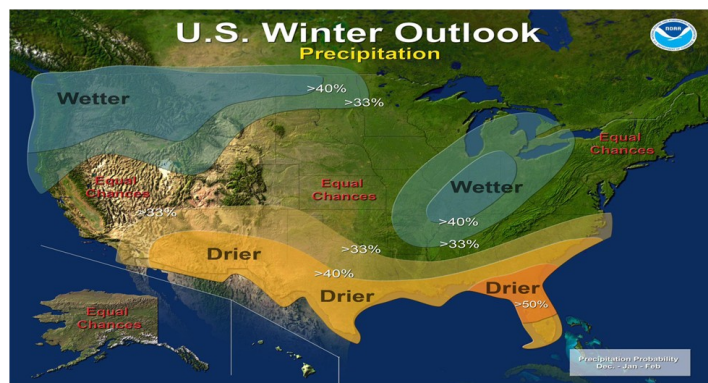
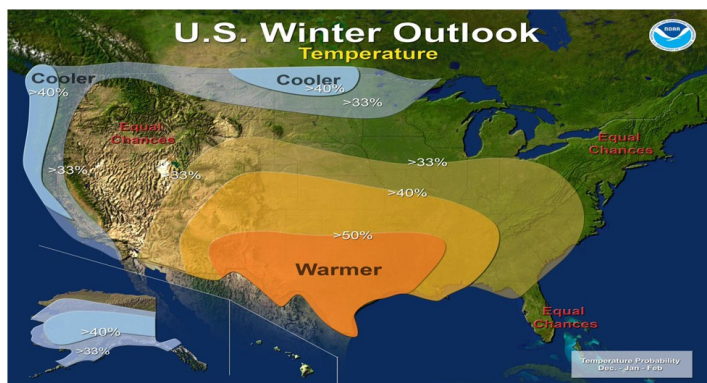
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In addition to the ongoing La Nina, the presence of moderate Cool phase of the Pacific Decadal Oscillation (PDO) exists across the northern Pacific. The PDO is a long-lived El Nino/La Nina-like pattern of Pacific climate variability with each having a similar climate fingerprint although they have very different behavior in time, with the PDO having a longer impact on weather patterns across the globe when compared to El Nino/La Nina.



The above graphic illustrates the current Cool phase of the Pacific Decadal Oscillation.

The following graphics depict CPC's Temperature and Precipitation Outlook for December 2010 through February 2011. Warmer than normal conditions are projected for southern and central portions of the contiguous United States, along with the drier than normal conditions indicated for the Southwestern through the Southeastern US. Wetter than normal conditions are projected for parts of the Pacific Northwest, the Northern Rockies, the lower Great Lakes and Ohio Valley and are based on the expected persistence of a moderate to strong La Nina, along with trends surmised within climate data over the past 30 years.

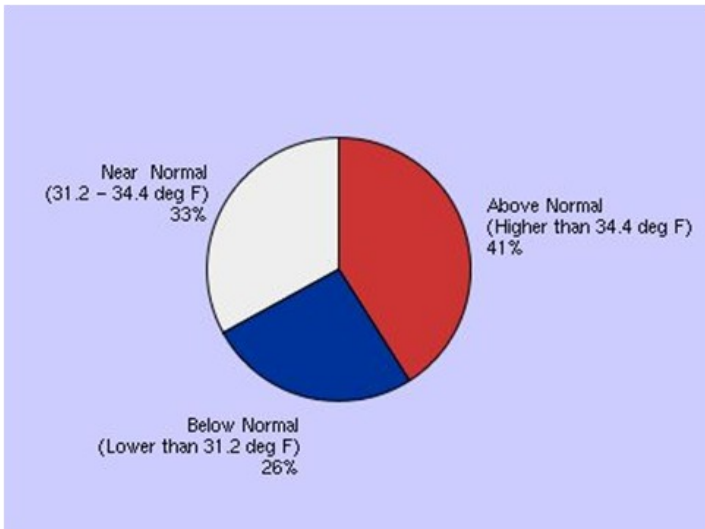


What do the above graphics mean for the upcoming winter season across southwest Kansas? There is a greater than 40 percent chance that the average temperature for the winter months of December 2010 through February 2011 will be above the 30 year normal for most of the area. The effects of La Nina conditions with respect to winter precipitation can vary widely across southwest Kansas, with the above forecast giving a 33.3 percent chance of above, below or near normal precipitation, respectively, for Kansas.

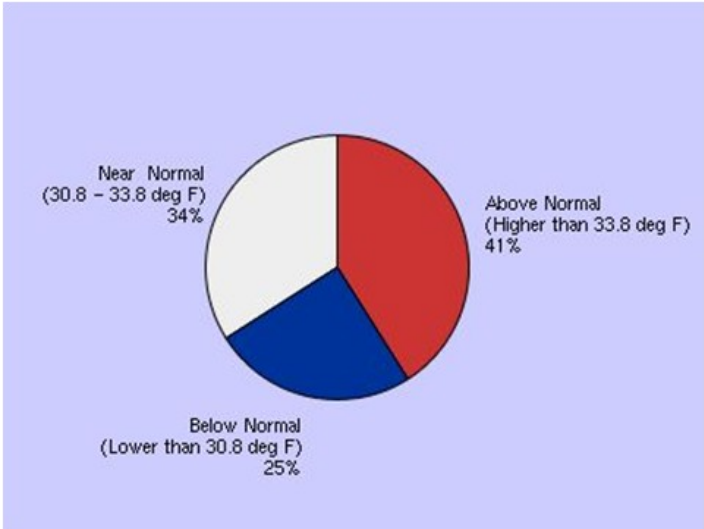
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Specific average temperature forecasts from the Climate Prediction Center (CPC) for Dodge City, Pratt, Hays and Elkhart are as follows:

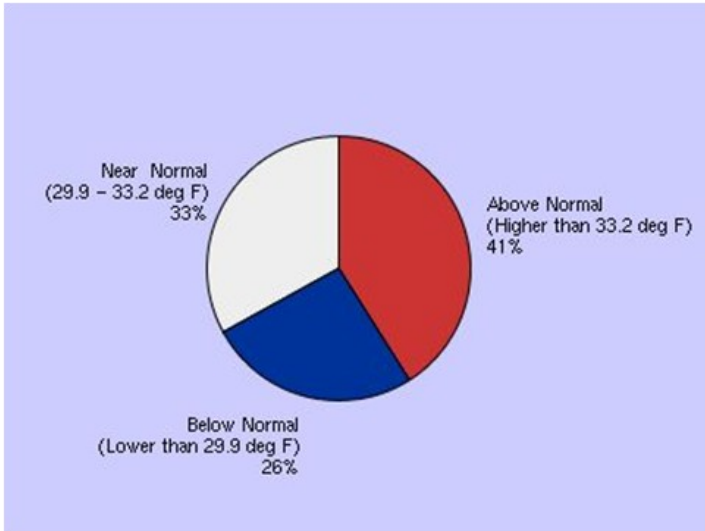
Dodge City Temperature Outlook: Dec-Feb 2010-2011



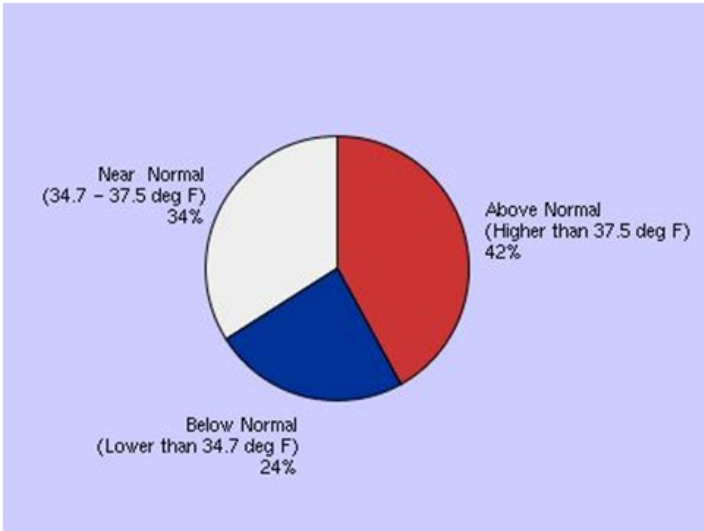
Pratt Temperature Outlook: Dec-Feb 2010-2011



Hays Temperature Outlook: Dec-Feb 2010-2011



Elkhart Temperature Outlook: Dec-Feb 2010-2011

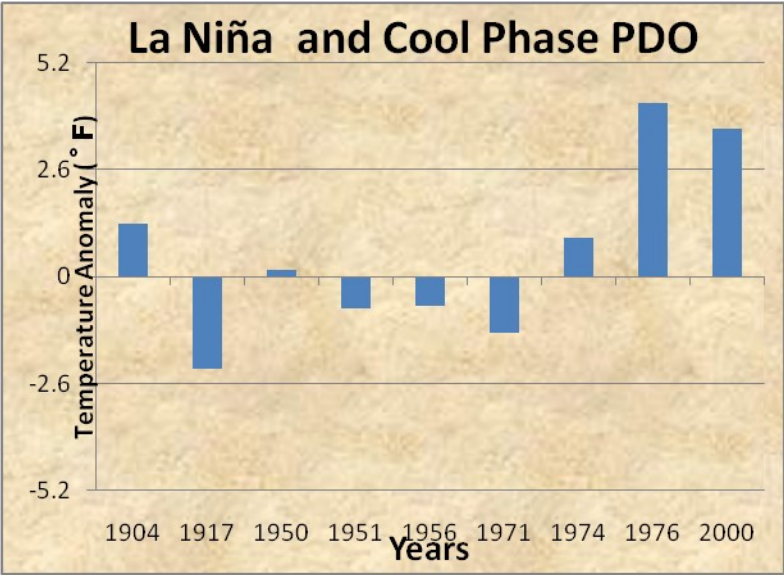


However, historically when looking at previous years at Dodge City when both a La Nina and a Cool phase of the PDO existed during the months of December through March, a slightly more detailed picture begins to emerge for this coming winter.

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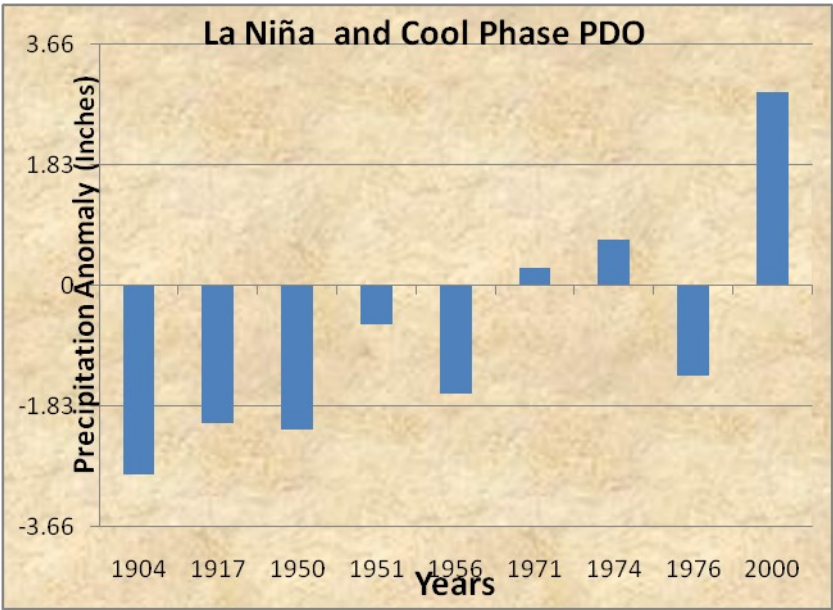


First looking at temperature anomalies (deviation in temperature either above or below normal) for the 9 years between 1900 and 2009 when both a La Nina and a cool phase PDO condition existed, reveals temperatures averaging only slightly above normal. Any years with temperature anomalies colder than -2.6 °F or years with temperature anomalies warmer than +2.6 °F are significant enough to consider them as either well below or well above normal for that year. All other years with anomalies between these values are within a range of being normal. In this case, only 2 years exhibited well above normal temperatures and all other years exhibiting near normal temperatures.



- Average Temperature = 36.3F
- Only 0.5 °F Above Normal
- 2 years well above normal
- No years well below normal
- 7 years within a small +/- range of normal

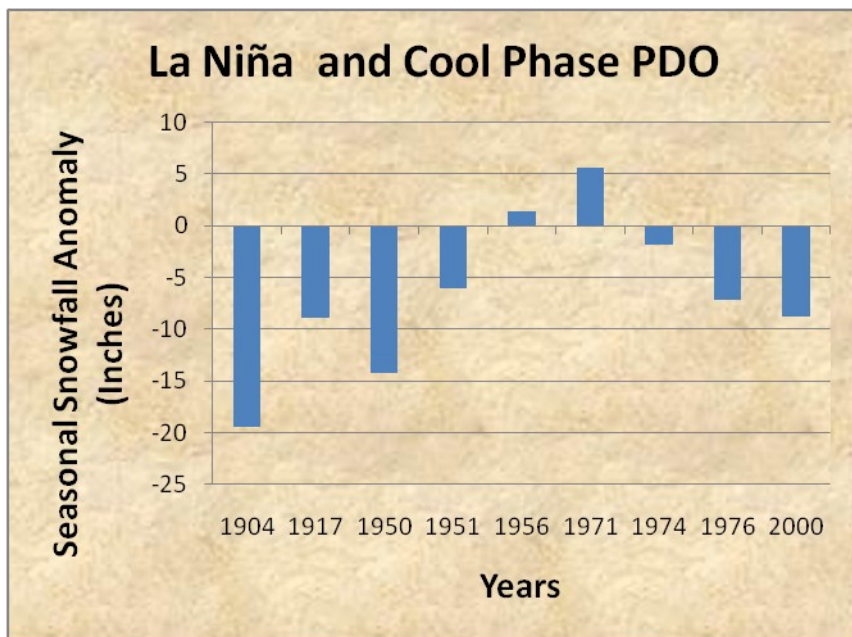
When examining precipitation anomalies (deviation in precipitation either above or below normal) for the 9 years between 1900 and 2009 when both a La Nina and a cool phase PDO condition existed, precipitation averages only slightly below normal. Any years with precipitation anomalies lower than 1.83" OR above than +1.83" are significant enough to consider them as either well below or well above normal for that year. All other years with anomalies between these values are within a range of being normal. In this case, only 1 year exhibited well above precipitation and 3 years well below while all other years exhibiting near normal precipitation.



- Averages Only 0.49" Below Normal
- 1 year well above normal
- 3 years well below normal
- 5 years within a small +/- range of normal

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Finally, when examining total seasonal snowfall anomalies (deviation in total seasonal snowfall either above or below normal) for the 9 years between 1900 and 2009 when both a La Nina and a cool phase PDO condition existed, snowfall averages well below normal. Any years with snowfall anomalies lower than -5" OR above than +5" are significant enough to consider them as either well below or well above normal for that year. All other years with anomalies between these values are within a range of being normal. In this case, only 1 year exhibited well above snowfall but 6 years well below while only 2 years were within a range of being normal.



• Snowfall Average = 13" or roughly 7" below normal

• 1 years well above normal

• 6 years well below normal

• 2 years within a small +/- range of normal

In summary, southwest Kansas has a greater than 40 percent chance of warmer than normal temperatures for the winter months of December 2010 through February 2011, with a 33.3 percent chance of seeing above, below or near normal precipitation, respectively. However, historically for Dodge City when looking at years when both a La Nina and a cool phase of the PDO existed, both temperature and precipitation for the months of December through March averaged only slightly above and below normal respectively. Nonetheless, a strong signal is seen with seasonal snowfall for Dodge City with most years exhibiting well below normal seasonal snowfall. Based on this assessment, Dodge City and the remainder of southwest Kansas may experience either more rain/freezing rain or sleet events this coming winter rather than snow.

## Meet Electronics Tech Brian Cupp and Meteorologist Kelly Sugden

Brian was born August 27, 1974 in Sacramento, CA and graduated from Sacramento High School June 1993. He was married in September 1996 and has 3 children; Alexander 13, Elizabeth 11, and Amanda 4. Brian joined the United States Air Force on August 28th, 1997 and was in the Ground Radar Maintenance career field. He was in the USAF for a total of 7 years and achieved the rank of Staff Sergeant. After leaving the Air Force he worked on wind turbines for Vestas America for 9 months then started working for the Air Force as a civilian where he maintained the Air Field Systems. Brian worked as a civilian for the Air Force for 4 years before joining the National Weather Service in July of 2009. He is currently attending Grantham University online pursuing a degree in electronics engineering.



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Kelly was born in Salt Lake City, Utah. He moved to Portland, Oregon where he spent the rest of his childhood and adolescent years watching the weather. Kelly's interest in weather kept him busy throughout his high school years as he volunteered at the National Weather Service office in Portland, Oregon in 1998 answering the phones and recording the weather forecasts and warnings for NOAA Weather Radio. In 1997, he spent most of the summer in McCook, Nebraska at his extended family's house to go storm chasing for the first time. In 1999, he left the Pacific Northwest and attended his first year at the University of Oklahoma pursuing a Bachelors of Science in Meteorology with a minor in Mathematics. That year, he saw his first tornado...the infamous May 3, 1999 F5 tornado that ripped through Moore, Oklahoma. A very nice introduction to severe weather in the Great Plains! After graduation, he landed his first forecasting job in the private sector in Houston, Texas. In 2008, he started his career with the National Weather Service in Medford, Oregon as an Meteorologist Intern. In 2010, he was promoted to General Forecaster in Dodge City. He is excited to be back.





## Station Visits

Station visits were completed this summer to all the cooperative sites. The outside temperature units were cleaned and the rain gauges were leveled. The automated rain gauges were winterized during the first week in October. If you need any supplies or need equipment moved or worked on give us a call at 1-800-824-9943. Ask for Jesse Lee or Duane Wolfe. If neither one of us is here you can leave a message and we will get back to you. My e-mail address is [jesse.lee@noaa.gov](mailto:jesse.lee@noaa.gov) and Duane's is [duane.wolfe@noaa.gov](mailto:duane.wolfe@noaa.gov).



In the photo: Larry Ruthi (MIC), Lois and Stephen Fenster



Burke Goebel

## Awards

A 30 year length of service award was presented to Stephen and Lois Fenster of Healy in May. The station has been in Lois's family since 1901 when it was established. Congratulations to Stephen and Lois for their continued dedication and long service.

Burke Goebel of rural northern Hodgeman county was presented with a 10 year length of service award in September.

50 Years: Ashland Municipal Light Plant in December



Larry Ruthi with-  
Jason Wyatt of  
Ashland

## New Observers

Brian Taylor of Tyree Ag took over the Kinsley station in June. We welcome Brian and Tyree Ag to the Cooperative Weather Observer

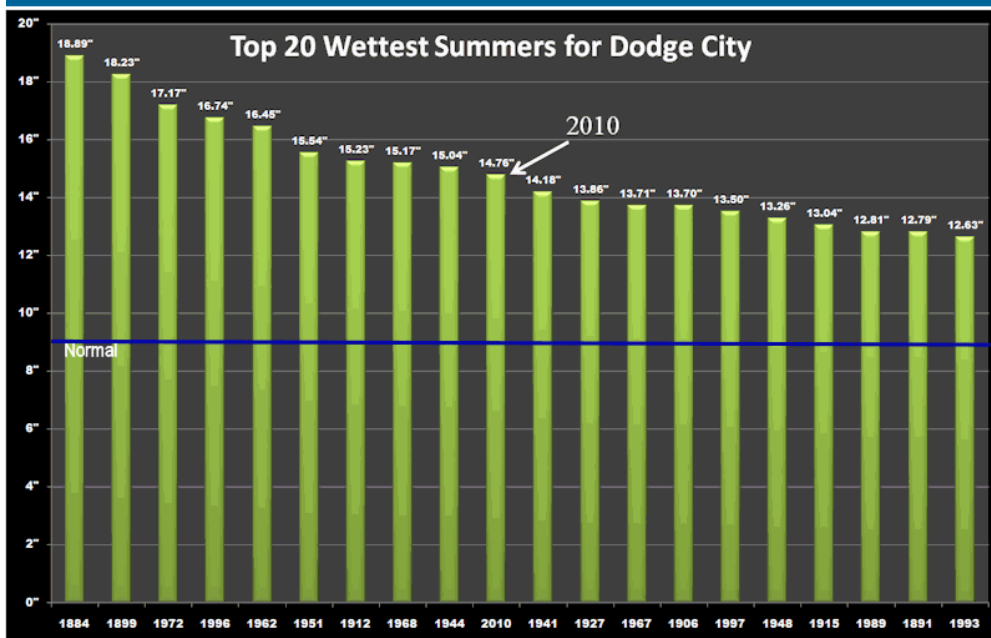
## MISC

- Since we are coming up on the winter season, you can go ahead and remove the top and inner tube from your 8 inch rain gauges.
- For those who still mail their forms, I will mail out envelopes in December for 2010.

## WXCODER

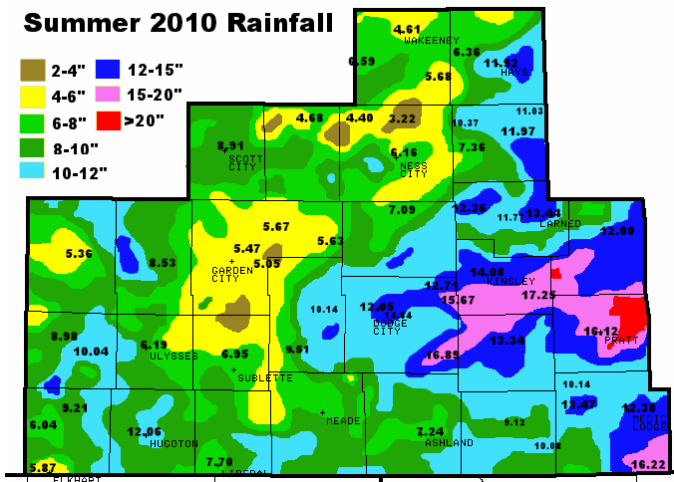
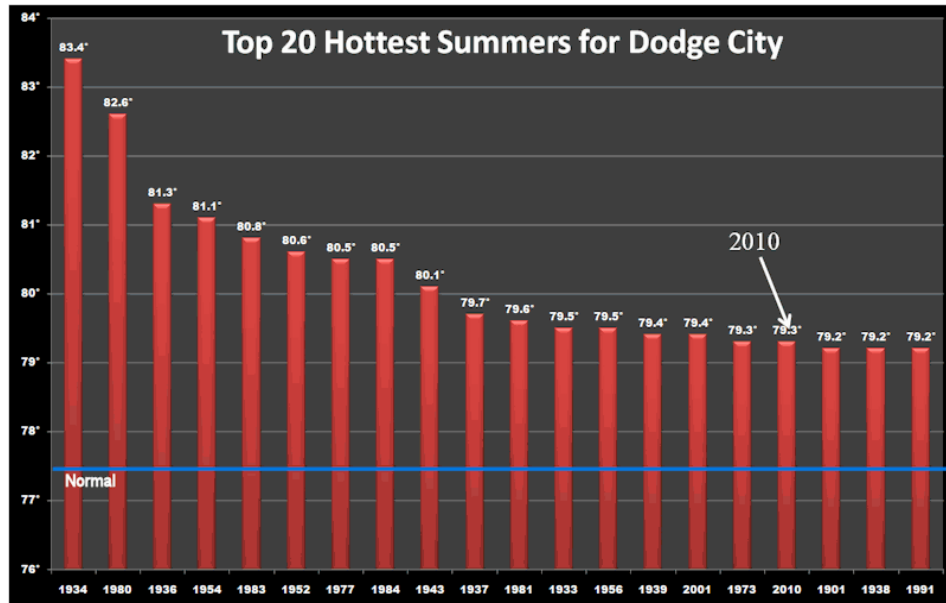
For those who do not use the weather coder program, you can use it if you have a computer with internet and want to report your weather data every day. This is a website where you can enter your data and it would allow us to incorporate your station data in our daily report. If you are interested in using this program please give me a call and I will set you up with an account. For those who routinely use the program and still mail in their weather forms, you do not have to mail in the form. We can download the form here at the office. At the end of the month when you are done, check over your data to see if you have any missing temperature, precipitation or snow data entries. Please enter those if you have the data that are missing. If date are missing, please enter an M.

Summer of 2010 by Jeff Hutton, Warning Coordination Meteorologist (WCM)



For some locations across southwestern Kansas it was very hot and also extremely dry during the summer of 2010. However, there were areas that it still turned out hot, but also very wet! There were extreme differences in just a matter of miles. For Dodge City, the summer months of June, July and August were very wet, especially in June and July. The rainfall total of 14.76" made 2010 the 10th wettest summer on record and the wettest since 1996 when 16.74" fell. The "normal" rainfall for the summer is 9.05"

It was also hot across the area. At Dodge City, the summer of 2010 averaged out to 79.3 degrees (daily average of low and high temperatures) which made this summer one of top 17 hottest summers on record. The last time it was this hot was in 2001. There were 13 days when the mercury reached 100 or higher at Dodge City during June through August, but this is actually only one more day than normal (12).



Rainfall was very variable across the area and even extreme differences in just a short distance. The heaviest rainfall for the summer was over 20 inches in some areas of south central Kansas! However, there were also areas there were very dry. The map on the left illustrates those differences.

L	I	E	U	D	V	F	L	O	C	C	U	S	C	F	<b>Find the Following Words in the Puzzle on the Left:</b>  NOREASTER KATABATIC FLURRY CRYOCHORE FRONTOGENESIS ISOGEOTHERM LOOMING GEOSTROPHIC PSEUDOADIABATIC SOLENOID FLOCCUS AUTOBAROTROPY GALERNE HOHLRAUM
P	S	E	U	D	O	A	D	I	A	B	A	T	I	C	
G	N	I	M	O	O	L	Y	Z	D	Z	R	E	T	T	
A	N	E	N	R	E	L	A	G	T	S	X	J	A	P	
F	R	O	N	T	O	G	E	N	E	S	I	S	B	L	
N	B	O	V	X	B	O	N	E	O	U	K	R	A	M	
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N	D	E	E	R	O	H	C	O	Y	R	C	Q	K	L	
V	A	U	T	O	B	A	R	O	T	R	O	P	Y	Z	
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Q	P	V	K	R	F	L	U	R	R	Y	P	G	G	C	
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## 14th Annual High Plains Conference Summary by Tim Burk (Senior Forecaster)

The 14<sup>th</sup> Annual High Plains Conference was held August 12-13, 2010 at the Student Union Building on the campus of Dodge City Community College in Dodge City Kansas. There were 58 attendees from far and wide. The conference ran from 8 am to 5 pm Thursday, Aug 12<sup>th</sup> and 8 am to Noon Friday, Aug 13<sup>th</sup>. A banquet was held on Thursday evening, with the keynote presentation by Dave Oliver/KFDA-TV in Amarillo. There were 27 presentations during the conference covering a broad range of weather topics. The keynote speakers were: Don Burgess with OU/CIMMS and Vortex2, Norman, OK; Dr. Pam Heinselman with NSSL/Phased Array Radar Innovative Sensing Experiment (PARISE), Norman, OK; and "Doppler" Dave Oliver from KFDA-TV 10, a CBS affiliated television station in Amarillo, Texas. A \$500 scholarship was awarded to the best college student presentation, and it went to Matthew Harding of Butler Community College, El Dorado, KS. The 2009 winner of the Jim Johnson Scholarship for area high school students was Jennifer Uhrich of North Platte, NE. The conference will be held in Wichita in 2011.



A wide range of weather conditions can occur across western Kansas during a winter storm. Snow, sleet and ice are commonly thought of during the winter months but strong winds can lead to blowing and drifting snow as well as dangerous wind chill readings.

## Before a Winter Storm:

1. Keep your vehicle gas tank near full to reduce the potential for ice accumulation in the tank and fuel lines.
2. Winterize your vehicle. Keep antifreeze fresh and assure you have a strong car battery. Extreme cold decreases battery performance, and a weak battery will fail when you need it most. Be sure antifreeze concentration is sufficient to provide protection during the coldest expected conditions.
3. Winterize your home by installing adequate insulation and caulking. Weatherstrip doors and windows.
4. Assemble a winter weather survival kit which should contain the following items:
  - **For Your Home**
    - ◇ First aid kit, including prescription medicines
    - ◇ Heating fuel
    - ◇ Emergency heating source
    - ◇ Fire extinguisher and smoke detectors
    - ◇ Flashlight and extra batteries
    - ◇ Canned food and can opener (not electric)
    - ◇ Bottled water (a 3-day supply—include one gallon per person per day)
    - ◇ One change of clothing and footwear per person
    - ◇ Extra blankets and/or sleeping bags
    - ◇ Emergency tools, including a NOAA Weather Radio, battery-powered radio, flashlight and extra batteries
    - ◇ An extra set of car keys and credit card or cash
    - ◇ Any special items for infants, the elderly, or disabled family members
  - **For your Car**
    - ◇ Extra blankets and/or sleeping bags
    - ◇ First aid kit
    - ◇ Flashlight and extra batteries
    - ◇ High-calorie...non-perishable food
    - ◇ Knife
    - ◇ Small can and water-proof matches to melt snow for drinking
    - ◇ Bag of sand or cat litter
    - ◇ Shovel
    - ◇ Windshield Scraper and brush
    - ◇ Booster cables
5. If traveling, let someone know your schedule along with primary and alternate routes. Carry a cellular telephone.
6. Avoid traveling alone.
7. Move animals to sheltered areas.
8. Always check the weather forecast and postpone outdoor activities if storms are imminent. Winter weather warnings provide detailed information about expected adverse weather conditions.
9. Check road conditions through Department of Transportation web sites or telephone recordings before leaving on a trip.

## During a Winter Storm:

1. Listen to NOAA Weather Radio, local radio or television, or use National Weather Service websites for the latest weather reports and emergency information.
2. Stay Inside.
  - If using an alternate heat from a fireplace, wood stove, space heater, etc., use fire safeguard and properly ventilate.
  - If no heat use towels or rags to stuff into cracks and under doors.
3. If you must go outside, dress to fit the conditions. Wear loose, lightweight, warm clothes in layers and avoid over exertion.
4. If your vehicle becomes stranded in the snow while you are traveling, stay with your vehicle. Do not leave your vehicle to summon help or search for a residence in the middle of a snow storm and/or strong winds. It is extremely easy to become disoriented during a blizzard even in familiar surroundings. It is better to run the vehicles engine and heater, but make sure at least one window is cracked and the exhaust system is not clogged with snow.

**National Weather Service  
Dodge City**

104 Airport Rd.  
Dodge City, KS 67801

Phone: 620-225-6514  
Recorded Forecast 620-227-3311  
Fax: 620-227-2288  
<http://www.weather.gov/ddc>



"NOAA's National Weather Service provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community."

**Severe Weather and Snowfall  
Reporting Only:**  
1-800-824-9943

**Winter Weather**

WARNING & ADVISORY CRITERIA			
WFO (DDC)			
Warning Type	Warning Criteria	Advisory Type	Advisory Criteria
Blizzard	Sustained wind or frequent gusts greater than or equal to 35 mph and visibility of a quarter mile or less in snow and/or blowing snow for at least three hours.	Winter Weather Advisory for Blowing Snow	Widespread Blowing Snow reducing visibility locally to a quarter mile or less.
		Freezing Fog	Light ice deposition from freezing fog.
Winter Storm Warning for Heavy Snow	6 inches or more in 12 hrs or 8 inches or more in 24 hours.	Winter Weather Advisory for Snow	Two to five inches of snowfall in 12 to 24 hours.
Ice Storm	Ice accumulation of a quarter inch or more.	Freezing Rain	Ice accumulation from freezing rain or freezing drizzle of less than a quarter of an inch.
Winter Storm Warning for Sleet	Sleet accumulation of one half inch or more.	Winter Weather Advisory for Sleet	Sleet accumulation of less than half an inch.
		Winter Weather Advisory for Snow and Blowing Snow	Widespread snowfall and blowing snow restricting visibilities to locally a quarter of a mile or less.
Wind Chill	Wind chill index of -25 or less for three or more hours accompanied by a sustained wind of at least 10 miles per hour.	Wind Chill	Wind chill index of -15 or lower for three or more hours accompanied by a sustained wind of at least 10 miles per hour.