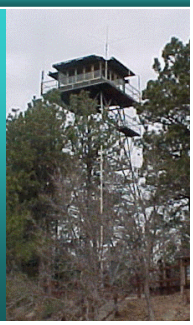
Issue II, Volume ii April 2005

The High Plains Drifter

NATIONAL WEATHER SERVICE
NORTH PLATTE, NE

WILDFIRES

By Dennis Phillips, Meteorologist



Wildfires have probably been on the minds of land owners since the West was settled. However, it wasn't until recently that wildfires have become more of a focus to the media, and possibly among many federal agencies as well. The increase in exposure began with the large fires during the summer of 2000, including the Los Alamos fire in New Mexico during the spring of that year. The July 2002 Hayman fire in Colorado and the large fires around San Diego in the late fall of 2003 also helped to heighten the public's awareness due to national media attention.

The late winter wildfire in March of 1999 across the Nebraska Sandhills was the second largest in Nebraska history at 72,000 acres. This fire may have started a trend in awareness in the local fire community, but the small media coverage was most likely due to its location outside of a National Forest. The fire burned mostly grassland and only one structure. The timing of these more significant events shows that large wildfires can occur at any time of the year. The fact that fires in the Western states are occurring more frequently in the spring and early summer months, can be attributed to the prolonged drought conditions which began in 1999 and continue today.

Fires may occur throughout the year across Western and North Central Nebraska, however the normal fire season is considered to be from the start of April to the end of October. During this season there are two peaks in fire danger, one in the early spring and the other in late fall. During these periods, regional prairie grasses are fully cured, wind speeds are the greatest, and relative humidity is at a minimum. Prairie grasses, considered fine fuels because they can absorb and release moisture quickly, make up the majority of combustible material across the region. However there are a few areas that have larger fuels available for burning including the McKelvie and Halsey Nebraska National Forests, the Niobrara River valley and the Loess Plain region across portions of southwest Nebraska.

The National Weather Service (NWS) is partnered with federal land managers, including the U.S. Fish and Wildlife Service and the U.S. Forest Service, with the main goal of protecting life and property, as well as fire fighter safety. In Western and North Central Nebraska the partnership includes the Fire Management Officers (FMOs) at the National Forests and Wildlife Refuges. The FMOs collect the fuel status, take local observations and are responsible for all fire activity, including wildfires and prescribed burns. NWS North Platte provides fire weather information in support of all these activities, in the form of Spot Forecasts and Fire Weather Planning Forecasts. The Fire Weather program at NWS North Platte has increased significantly in the past two years, and will be adding additional responsibilities to support the local land managers in years to come.

June is Wildfire Awareness Month– Nebraska Fire Service

Cub Scout Weather Definitions Humor

Flood…
When a river gets too big for it's bridges.

Spring…
A root awakening.

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

Weather Awareness Weeks

By Deb Blondin – Warning Coordination Meteorologist

Spring is just around the corner which means it is time to prepare for the severe weather season. **Nebraska Severe Weather Awareness Week is March 28th through April 1st**. The Test Tornado Warning is scheduled for 1035 am CST (935 am MST) Wednesday, March 30th. An evening test will also be done so businesses with evening shifts can participate in the drill and also so families can practice their safety measures at home. The evening Test Tornado Warning will be issued on Wednesday, March 30th, at 645 pm CST (545 pm MST).
Here are some tips for tornado safety:

- In a home or building, move to a pre-designated shelter, such as a basement. If an underground shelter is not available, move to a small interior room or hallway on the lowest floor and get under a sturdy piece of furniture. Put as many walls as possible between you and the outside.
- Stay away from windows.
- Get out of automobiles. Do not try to outrun a tornado in your car; instead, leave it immediately for safe shelter.
- If caught outside or in a vehicle, lie flat in a nearby ditch or depression and cover your head with your hands.

In addition to Severe Weather Awareness Week, the National Weather Service will concentrate on flood safety during **Flood Safety Awareness Week March 21st through March 25th**. Because flash floods cause more deaths than tornadoes or hurricanes each year, it is important to highlight safety measures that all people need to be aware of. Here are a few flood safety tips:

- Do not attempt to drive through a flooded road. The road bed may be washed out under the water, and you could be stranded or trapped.
- Do not drive around a barricade. Barricades are there for your protection. Turn around and go another way!
- If the vehicle stalls, leave it immediately and move to higher ground. Rapidly rising water may engulf the vehicle and its occupants sweeping them away. Vehicles can be swept away by as little as 2 feet of water.

More information on flood safety can be found on the web page www.weather.gov/floodsafety.

Each day during Flood Safety Awareness Week and Severe Weather Awareness Week, the National Weather Service will concentrate on one safety topic and have this information on our web page at www.crh.noaa.gov/lbf and on NOAA All-Hazards Weather Radio.

New Weather Precipitation Rain Gage

The Automated Surface Observation System (ASOS) in North Platte and Valentine has had an upgrade. The Present Weather Precipitation Gage, a heated tipping bucket, has been replaced. The old gauge was prone to under reporting frozen and freezing precipitation.

A more accurate All Weather Precipitation Accumulation Gauge (AWPAG) is the replacement. This precipitation gauge is similar to the Fisher Porter Rain gauges as the AWPAG is also a cumulative weighing precipitation gauge. One of the main differences between the Fisher Porter and the AWPAG is that the AWPAG is heated.

WATER—CURSE OR BLESSING

By Teresa Keck – Meteorologist

Today reservoir water levels are at the forefront for agricultural and hydrological interests. Unfortunately reservoir levels remain low, although the Climate Prediction Center is forecasting some improvements to the drought over the Nebraska Panhandle into Central Nebraska through May 2005. Despite this long term drought, significant rainfall events have occurred during the past six years.

When reflecting on heavy rainfall events during the previous six years, two events stand out. The events occurred during the summers of 1999 in Hayes County and 2002 in Keith County. The flash flooding occurred as rainfall amounts reached or exceeded 10 inches. The images of flooding were headlined on television and in newspapers as communities were brought to a standstill as flooding washed out or made primary roadways impassable. The events evolved from what is considered backward propagating Mesoscale Convective Systems (MCS).

The term MCS is used broadly, but can include single, multicellular, and supercell thunderstorms, and squall lines. MCS's can be forward or backward propagating. However, backward propagating systems are events where rainfall amounts can be much higher than anticipated by computer models used by forecasters. Once backward propagating MCS's form, they can evolve into an excessive rainfall producer that can generate devastation where rainfall otherwise would be a blessing.

In 2001, Kelsch derived a graphic that displays the common ingredients for flash flooding.

The graphic shown in Figure 1 details how new thunderstorm cells form on the western flank of a convective area and weaken while moving east before dissipating. The regenerative nature of the storms results in a prolonged period of rainfall generally focused on a narrow area. The 'training' of thunderstorms can result in flash flooding as experienced in 1999 and 2002.

Research has shown MCS's are most common during the months of July and August. However MCS's can occur from April through November. As spring approaches, attention will turn to severe weather season and the threat for flash flooding. As the rain falls, the water can be a curse or blessing!

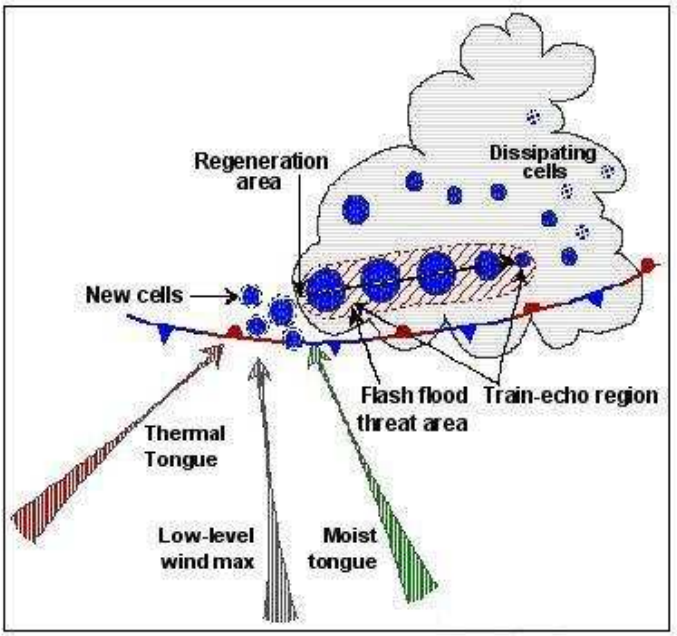


Figure 1, Kelsch 2001 Backward Propagating Convection

Preparing Fisher Porter Rain Gages for Summer

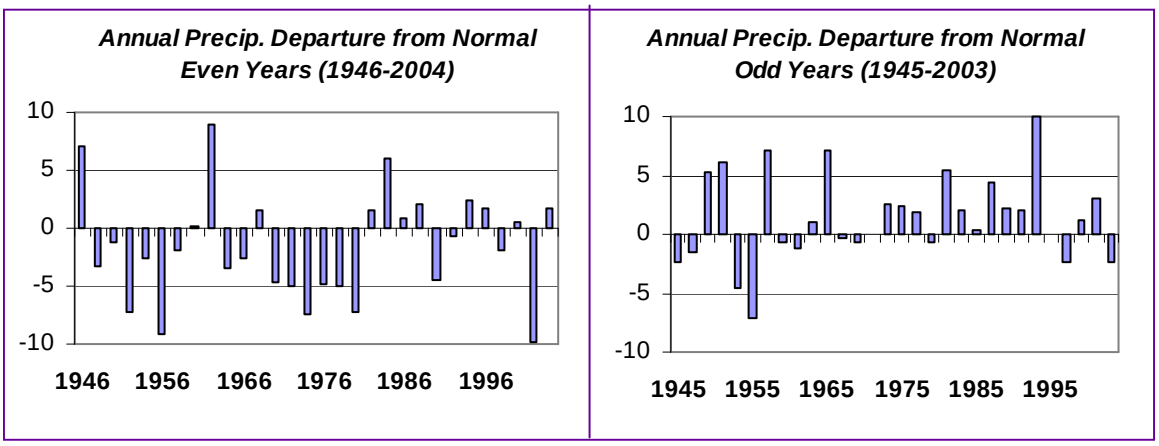
It is that time again to change the oil and anti-freeze in the Fisher Porter Rain Gages. For those who have these rain gages, we will begin this process around the first of April.

Please remember to send in your B-91 or B-92 forms at the **beginning of each month**. This is regardless of whether you report daily or not. Please make sure the form is in the mail by the **5th of the month** so we get them in time to send on for archival.

Eustis Precipitation

By Christina Hannon – Meteorological Intern

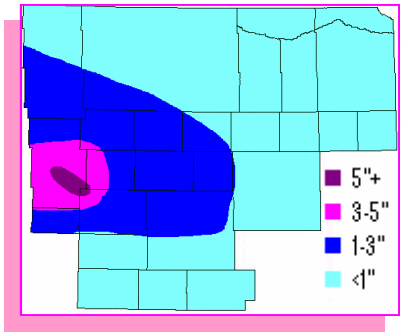
I was given a theory from Gilbert Koch, the Cooperative Observer in Eustis and decided to investigate it. Mr. Koch wrote that he thought that even years were drier than normal and odd years were wetter than normal. Is Mr. Koch's theory consistent with what the years of data show? Graphed below are the difference between the annual precipitation reported from Eustis 2NW and the normal value for the annual precipitation for the same location. The graph of the even years is on the left and the odd years is on the right. The graphs depict roughly 2/3 of even years are drier than normal and 2/3 of odd years are wetter than normal. I have no scientific explanation why this would be, but it is interesting nonetheless. This is another great observation from our cooperative observers. **Thanks Gilbert for sharing your observation!**



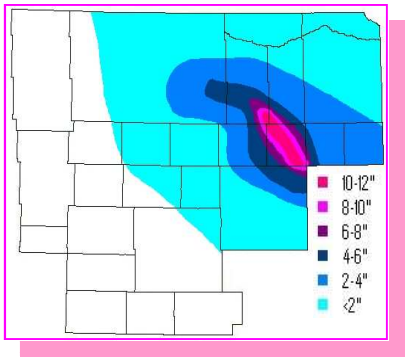
February Snowfalls

TUESDAY, FEB. 15, 2005

LOCATION	COUNTY	SNOWFALL (IN)
OSHKOSH 10NE	GARDEN	6.0
LISCO	GARDEN	4.0
CRESCENT LAKE NWR	GARDEN	4.0
CHAPPELL	DEUEL	4.0
ARTHUR	ARTHUR	3.0
HYANNIS	GRANT	2.0
ELLSWORTH	SHERIDAN	2.0
STAPLETON	LOGAN	2.0
NORTH PLATTE	LINCOLN	2.0
KINGSLEY DAM	KEITH	2.0
OGALLALA	KEITH	1.0
VALENTINE	CHERRY	TRACE
AINSWORTH	BROWN	TRACE
PURDUM	BLAINE	TRACE
ARNOLD	CUSTER	TRACE



Feb 15, 2005 Snowfall Map



Feb 22, 2005 Snowfall Map

TUESDAY, FEB. 22, 2005

COUNTY	LOCATION	AMOUNT (INCHES)
ROCK	6 SW ROSE	12.0
LOUP	TAYLOR	10.5
BROWN	22 S LONG PINE	8.0
BROWN	22 S AINSWORTH	6.0
BLAINE	7 N BREWSTER	6.0
BLAINE	5 NE BREWSTER	5.0
CUSTER	1 N SARGENT	6.0
CUSTER	ANSELMO	2.0
CUSTER	ARNOLD	TRACE
WHEELER	ERICSON	2.0
LOGAN	STAPLETON	TRACE
CHERRY	VALENTINE	TRACE

Graphics By Jim Connolly – Meteorologist

WALLACE 2W

By Mark Byrd – Observing Program Leader

The Cooperative Observation Station 2 miles west of Wallace, in Lincoln County has a long history of service. Initially established in 1890, 13 miles to the west of it's present location. During the first decade of it's existence, several observers were noted in the historical record, with an A. Bardon being listed as the first official observer. B.L. Patten became the observer in 1948 at the time the station was moved and Welby C. Allison served from 1949 until 1954. Glenn Farmer became the observer at that time, recording daily temperatures and precipitation until September of 1958, when Fred. S. Evans assumed the role. In 1988, Conrad and Jodi Nelson began the daily tasks of recording the weather and they are still serving with distinction to the present day. In April of 2003 they were presented with a 15 year Length of Service Award by the National Weather Service.

Situated in southwestern Lincoln County, Wallace has gently rolling hills and farm land and is located in the Republican River Basin.

Conrad and Jodi Nelson, with daughter Jackie receiving their 10 year Length of Service Award, March 1998

All Time Records	
High	107 ºF on June 30, 1963 and July 4, 1990
Low	-26.7 ºF on Dec 24, 1989
Precipitation	4.9 inches on Sept 16-17, 1963
Snow	20 inches on March 12-13, 1977

Monthly and Yearly Averages (1971-2000)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High	37.2	42.8	51.6	63.2	72.5	82.6	88.9	87.0	78.4	66.4	49.6	39.7
Low	11.1	15.6	22.8	32.8	43.7	53.5	59.4	57.2	46.8	34.1	21.8	13.3
Precip	0.33	0.46	1.00	1.69	3.01	3.04	2.83	2.02	1.50	1.00	0.53	0.31

	High	Low	Mean	Precip	Snow
30 Year Avg	63.3	31.5	47.4	17.72	24.2

Cooperative Weather Observer Awards

On Friday, March 13, 2005, **Doris Thompson** of **Stockville, NE** was honored by the National Weather Service for her 30 years of service as a cooperative observer. Mrs. Thompson's **30 year Length of Service Award** was presented by Mark Byrd (OPL) and Christina Hannon (MIT) for the North Platte Weather Service Office. Mrs. Thompson began observing at Cambridge Dam. She has been providing precipitation data in Stockville since January 1, 1975.

IV-ROCS and Weather Coder

By Mark Byrd – Observing Program Leader

The National Weather Service is phasing out the current ROSA data entry system that is in use by many of our observers who send daily weather information. Luckily, there are two alternative systems that are now available that make daily weather reporting much easier and efficient. You may choose which of the two methods is most convenient for you to use. The National Weather Service would like to phase out the Form B-91 which observers currently record their observations on, although this will be at a much later date, yet to be determined. Until instructed otherwise, your B-91 form is still vital and should be mailed to the North Platte weather office each month. An ultimate goal of the Cooperative Observer Program is to have each observer to submit their observations daily. Daily reporting allows our office to pass the most current information to our customers.

IV-ROCS is a phone reporting system that resembles ROSA but is much more efficient. After calling a toll-free phone number**(1-877-266-7627)**, you enter your 6-digit station ID number. Then the voice prompts you to enter your data using the keypad. From your station number, the system knows what you regularly report based on our records and will only ask for those items. With the new system, you are no longer required to pre-program the codes and data on your speed-dial phone. You enter the data on the keypad once the voice prompts you to do so. Please keep the phone we issued you for backup purposes. Details on using the system will be provided once your IV-ROCS account is set up.

Wx-Coder II is a computer-based reporting system that offers several extra features. This system is recommended for those who have regular access to the internet and are familiar with using a web browser and email. If you are interested in using the Wx-Coder II, we need your active email address so we can set up an account for you. After we have set up an account for your site, an email will be sent to you with instructions on using the system including the web link. This system has the advantage of allowing users to view past data and print their monthly form automatically.

If you are interested in using either **IV-ROCS** or **Wx-Coder II**, please contact Mark Byrd, Observation Program Leader, here at the National Weather Service office in North Platte at 1-800-603-3562.

Climatological Calender

Climatological Data for December 2004, January and February 2005

prepared by Christina Hannon, Meteorological Intern

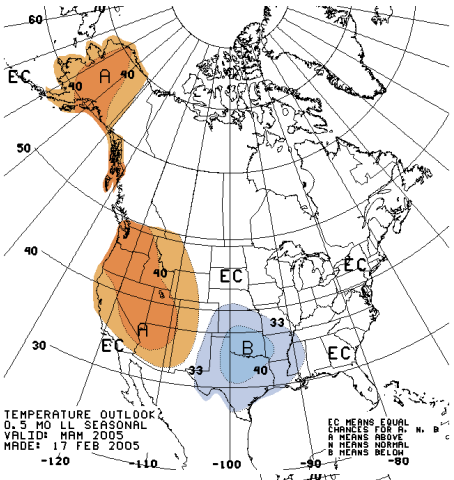
Location	Month	Average	Departure	Rain	Departure	Highest	Lowest
North Platte	December	30.5 F	+4.8º F	0.06 inches	-0.34 inches	63º F (11th)	-2º (24th)
	January	23.8º F	+0.6º F	0.41 inches	+0.02 inches	68º F (24th)	-16º F (6th)
	February	34.2º F	+4.8º F	0.17 inches	-0.34 inches	69º F (14th)	10º (9th and 16th)
Valentine	December	30.6º F	+7.0º F	0.01 inches	-0.32 inches	63º (11th and 29th)	-8º (23rd)
	January	21.1º F	+0.3º F	0.56 inches	+0.26 inches	68º F (24th)	-22º F (5th)
	February	33.0º F	+6.4º F	0.20 inches	-0.28 inches	69º F (4th)	8º (9th)

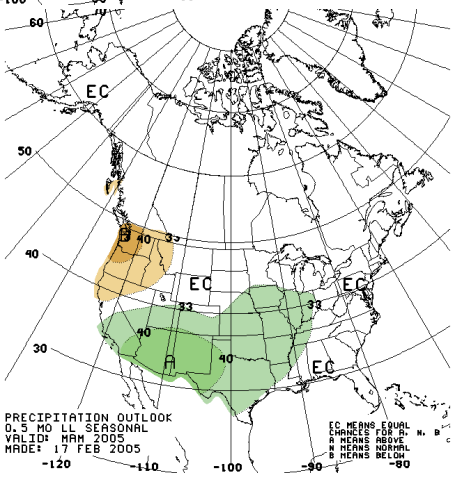
Normal High/Low Temperatures

Location	Apr 1	May 1	June 1	July 1
North Platte	58/29	67/39	78/50	87/58
Valentine	54/27	66/38	77/49	86/57

March- April-May Outlook

Seasonal rain and snow could provide limited drought relief across central and eastern Montana as well as southern Wyoming, the western Dakotas, and western Nebraska. Because drought has persisted so long over the High Plains, normal precipitation would tend to ameliorate conditions but not lead to full recovery. Above-normal precipitation would be needed for major improvement. An active storm track should bring improving drought conditions to southern Nebraska and northern Kansas.



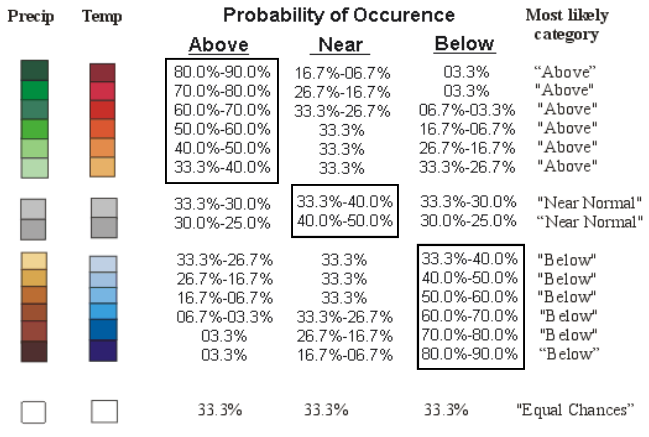


Temperature (above) and Precipitation (right) outlooks for the spring season of 2005.

CLIMATE OUTLOOK KEY

The key below is used to interpret each of the color versions of the ***Climate Outlook*** products. In areas where confidence in predictive skill has been established, the probabilities of the normal, near normal or below normal categories are increased accordingly above the Climatology level of 1/3 (33.3%) for each category. These probabilities are contoured using colors as depicted in the key below.

In those area where the skill of our present prediction tools is not sufficient, the default is equal chances (white color). The probabilities of experiencing each of the three categories (above normal, near normal or below normal) remain equally likely (1/3) n the white areas on the maps to the left. The outlined percentages below correspond to the values on the map.



Lead Forecasters
Chris Buttler Cliff Cole
Kenny Roberg Mitch Power
John Springer

General Forecasters
Teresa Keck Matt Masek
Dennis Phillips Jim Connolly

Electronic Technicians
Alan Johnson Ernie Vasina

Meteorological Interns
Christina Hannon Angela Oder

Our Office Staff

Meteorologist in Charge
Brian Hirsch

Warning Coordination Meteorologist
Deb Blondin

Science & Operations Officer
John Stoppkotte

Electronics Systems Analyst
Arthur Patrick

Information Technology Officer
Dennis Blondin

Administrative Support Assistant
Mary White

Observing Program Leader
Mark Byrd

Hydrometeorological Technicians
Ron Burns Jim Sweet

5250 E. Lee Bird Field
North Platte, NE 69101
National Weather Service

Phone: 308-532-4936
Fax: 308-532-9557
Email: Christina.Hannon@noaa.gov

Check out our website at www.crh.noaa.gov/lbf