National Weather Service Quad Cities IA/IL

Weather Home Companion

Volume 7 Issue 2

Fall/Winter 2010

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Weather Home Companion is a semiannual publication of the National Weather Service office in the Quad Cities.

If you have an idea for an article or a question you would like to see answered, please write to us.

Contact information can be found on page 8.

Flood Impacts—What's in a Category

The Difference Between Minor, Moderate, and Major Flood Categories

Maren Stoflet

The National Weather Service keeps a vigilant weather watch, but did you know that the same is done for rivers throughout the country? The NWS monitors river levels, and issues official river forecasts and warnings to protect life and property when there is a threat of flooding. Timely hydrologic forecasts allow communities and individuals to take appropriate actions to reduce flood losses.

(Continued on page 2)

Flooding on the Wapsipinicon River in Jones County, April 30, 2008.

Strong La Niña Expected This Winter

John Haase

El Niño and La Niña are extreme phases of a naturally occurring climate cycle referred to as El Niño/Southern Oscillation (ENSO). Both El Niño and La Niña refer to large-scale changes in sea-surface temperatures (SSTs) across the central and eastern tropical Pacific Ocean.

ENSO Neutral

During ENSO neutral years, SSTs off of South America's tropical west coast are in the 60s and 70s due to upwelling along the coast. Meanwhile, further west, SSTs warm into the 80s across the central and western Pacific.

El Niño

During the positive phase of ENSO, known as El Niño, this "warm pool" of water in the western and central equatorial Pacific expands eastward to the South American coast.

La Niña

During the negative phase of ENSO, known as La Niña, upwelling is stronger than normal, causing below normal SSTs to expand westward into the central equatorial Pacific Ocean.

This Winter: La Niña

During La Niña events, colder than normal water exists over the central and eastern portions of the Pacific Ocean. This reduces the temperature difference of the ocean in this region which makes the likelihood of a persistent jet stream over the eastern portion of the Pacific Ocean less likely.

As can be seen in the diagram on page 2, high pressure typically builds over the Gulf of Alaska. This sends the jet stream well north into Alaska and then southward into the Midwest of the United States. This allows for

(Continued on page 2)

Flood Impacts—What's in a Category

(continued from page 1)

Individual river forecast locations are unique, and so are the local impacts of flooding. For each NWS river forecast location, a flood stage is established. River levels above flood stage are then categorized by severity as minor, moderate, and major flooding. A certain river level in one location may have an entirely different impact than the same level above flood stage at another location. Therefore, the level of the flood categories also varies from one river location to another.

You may have heard mention of minor, moderate, or even major flooding for an area river. What do these minor, moderate, or major categories mean? Each of these three impact categories has a definition of flood severity, based on property damage and public threat.

Minor Flooding:
Minimal or no property damage, but possibly some public threat or inconvenience.

Moderate Flooding:
Some inundation of structures and roads near streams. Some evacuations of people and/or transfer of property to higher elevations may be necessary.

Major Flooding:
Extensive inundation of structures and roads. Significant evacuations of people and/or transfer of property to higher elevations are likely.

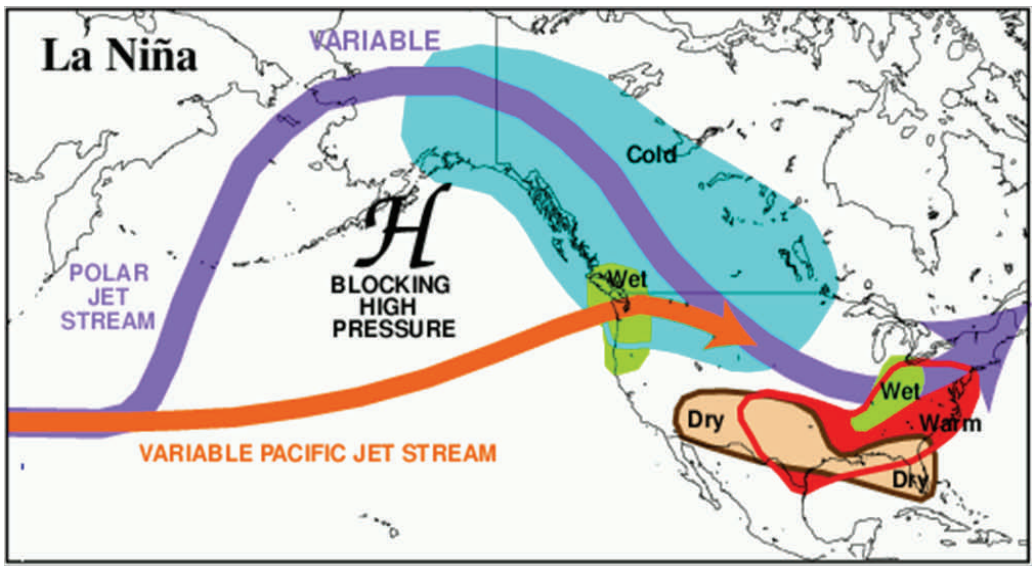
More information on the web:

www.floodsafety.noaa.gov

water.weather.gov

Strong La Niña Expected This Winter

(continued from page 1)



Typical winter pattern during La Niña.

...This allows for frequent arctic air intrusions...a higher potential for ice and snow storms...

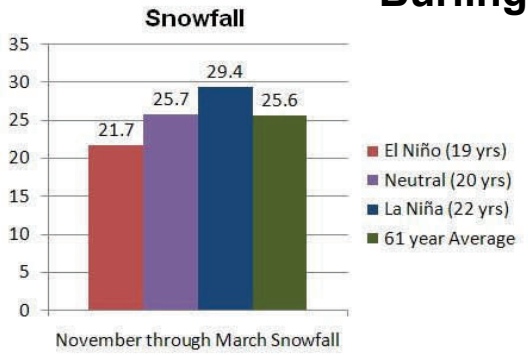
frequent arctic air intrusions, and with the jet stream across the Midwest, a higher potential for ice and snow storms.

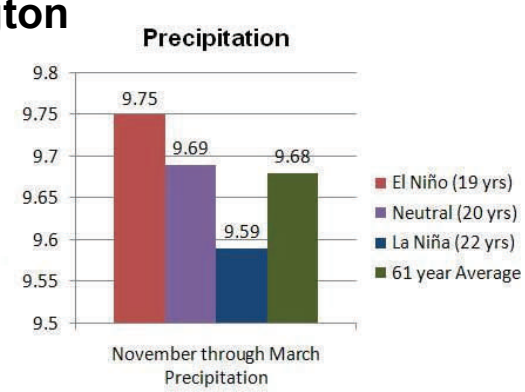
There have been 22 La Niña events since reliable records began in 1949. On the following pages, several graphs and tables show how snowfall, precipitation and temperatures observed during these La Niña events compare to other winters. This data was complied for the cool season months of November through March.

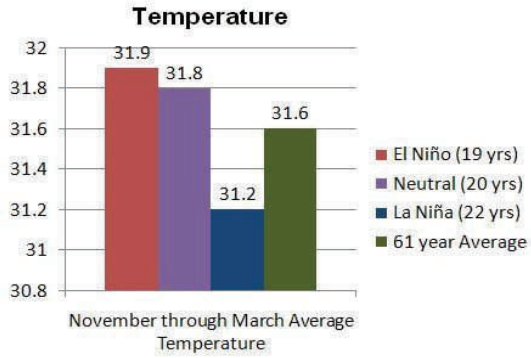
Strong La Niña Expected This Winter

(continued from page 2)

Burlington



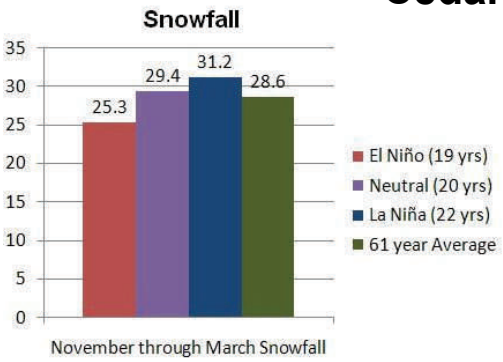


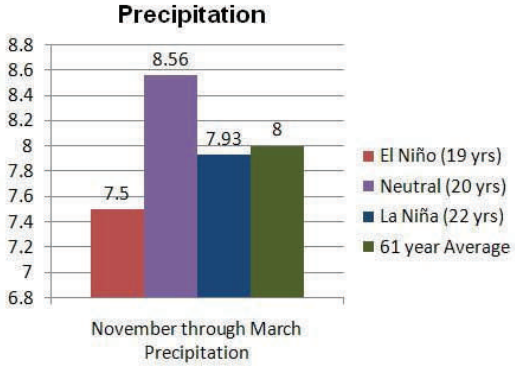


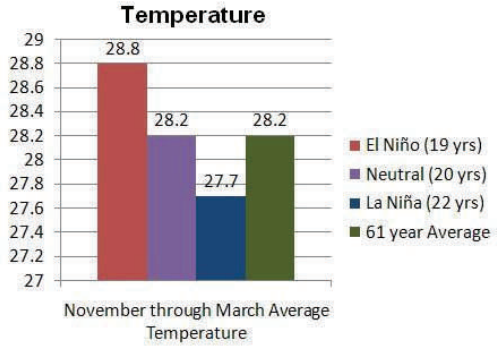
Burlington:

* On average, experiences several more inches of snow during La Niña seasons, compared to neutral or El Niño years.
* Precipitation, however, averages slightly lower than neutral or El Niño seasons.
* Temperatures average slightly cooler during La Niña seasons.

Cedar Rapids







Cedar Rapids:

* On average, experiences several more inches of snow during La Niña seasons, compared to El Niño years, but only slightly greater than neutral years.
* Precipitation averages much lower than neutral seasons, but slightly greater than El Niño seasons.
* Temperatures average slightly cooler during La Niña seasons.

Burlington Iowa

Winter Season (Nov-Mar)	Winter Snowfall (Nov-Mar)	Winter Precipitation (Nov-Mar)
1949-1950	11.2"	8.53"
1950-1951	37.6"	9.74"
1954-1955	28.8"	7.77"
1955-1956	18.3"	4.23"
1956-1957	29.8"	7.44"
1961-1962	50.1"	10.67"
1964-1965	39.6"	9.75"
1967-1968	8.1"	5.35"
1970-1971	17.9"	8.21"
1971-1972	31.5"	11.24"
1973-1974	20.9"	13.09"
1974-1975	48.8"	10.17"
1975-1976	18.0"	11.47"
1983-1984	35.3"	11.14"
1984-1985	20.6"	12.95"
1988-1989	14.6"	7.90"
1995-1996	21.2"	7.51"
1998-1999	39.3"	11.43"
1999-2000	19.4"	7.92"
2000-2001	60.9"	10.22"
2007-2008	42.7"	10.62"
2008-2009	31.4"	13.67"

Cedar Rapids Iowa

Winter Season (Nov-Mar)	Winter Snowfall (Nov-Mar)	Winter Precipitation (Nov-Mar)
1949-1950	26.4"	6.35"
1950-1951	58.8"	11.34"
1954-1955	25.0"	5.10"
1955-1956	15.9"	1.88"
1956-1957	22.3"	4.98"
1961-1962	60.2"	15.83"
1964-1965	38.4"	8.54"
1967-1968	7.4"	3.70"
1970-1971	23.2"	5.58"
1971-1972	29.5"	11.10"
1973-1974	22.8"	11.95"
1974-1975	51.1"	9.39"
1975-1976	12.4"	8.91"
1983-1984	39.8"	9.61"
1984-1985	22.8"	8.82"
1988-1989	11.7"	5.02"
1995-1996	30.3"	6.76"
1998-1999	24.0"	5.56"
1999-2000	24.5"	5.46"
2000-2001	40.8"	10.24"
2007-2008	59.9"	9.65"
2008-2009	39.4"	8.73"

Strong La Niña Expected This Winter

(continued from page 3)

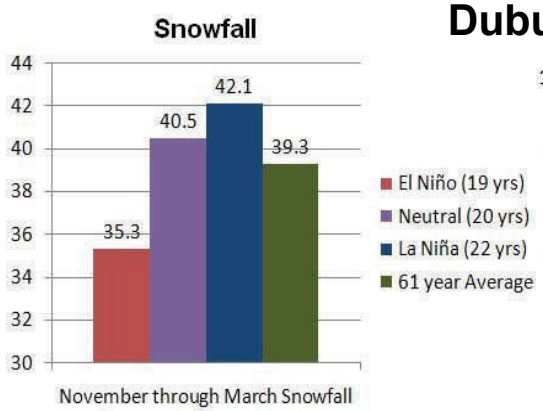
Dubuque Iowa

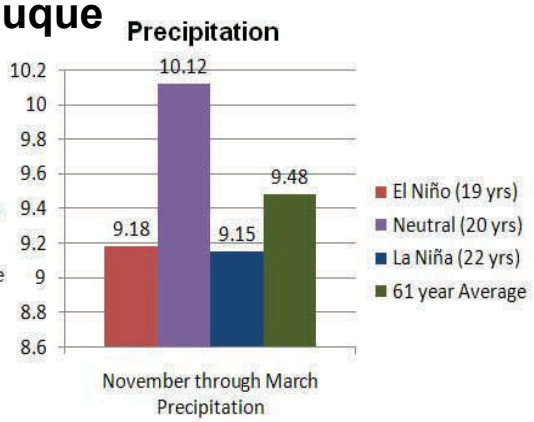
Winter Season (Nov-Mar)	Winter Snowfall (Nov-Mar)	Winter Precipitation (Nov-Mar)
1949-1950	38.6"	7.01"
1950-1951	59.1"	10.74"
1954-1955	29.0"	5.47"
1955-1956	22.6"	3.50'
1956-1957	32.3"	5.95"
1961-1962	67.9"	15.97"
1964-1965	49.3"	10.72"
1967-1968	14.2"	8.24"
1970-1971	46.5"	9.31"
1971-1972	49.9"	12.74"
1973-1974	32.4"	10.90"
1974-1975	66.3"	10.00'
1975-1976	27.4"	11.38"
1983-1984	42.8"	9.86"
1984-1985	43.4"	12.57"
1988-1989	23.8"	7.37"
1995-1996	27.1"	6.55"
1998-1999	32.9"	5.48"
1999-2000	38.0"	5.20"
2000-2001	52.7"	8.90"
2007-2008	76.2"	12.58"
2008-2009	53.1"	10.90"

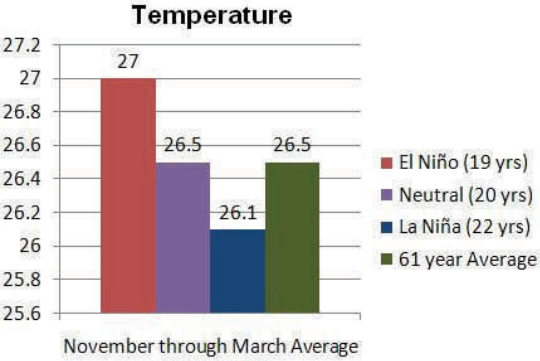
Moline Illinois

Winter Season (Nov-Mar)	Winter Snowfall (Nov-Mar)	Winter Precipitation (Nov-Mar)
1949-1950	14.9"	10.03"
1950-1951	38.4"	10.41"
1954-1955	46.0"	7.88"
1955-1956	15.3"	3.38"
1956-1957	28.0"	9.47"
1961-1962	47.7"	12.86"
1964-1965	47.6"	12.24"
1967-1968	16.0"	6.90"
1970-1971	30.5"	8.55"
1971-1972	51.5"	13.14"
1973-1974	34.5"	13.79"
1974-1975	63.5"	10.97"
1975-1976	21.7"	9.62"
1983-1984	45.2"	13.41"
1984-1985	30.4"	14.97"
1988-1989	17.7"	8.98"
1995-1996	27.8"	8.53"
1998-1999	38.1"	9.55"
1999-2000	39.1"	8.30"
2000-2001	46.0"	11.26"
2007-2008	51.5"	10.73"
2008-2009	46.2"	14.25"

Dubuque



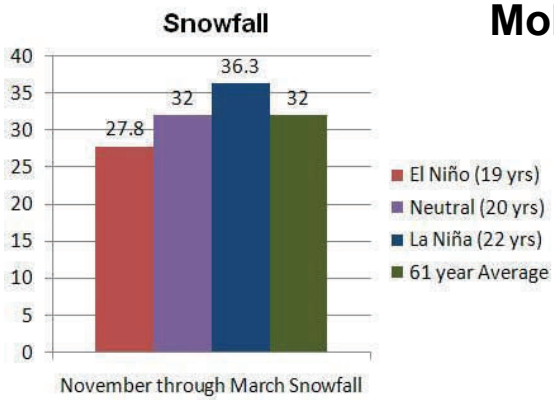


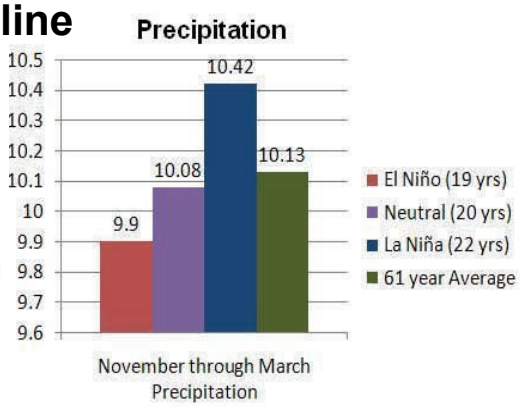


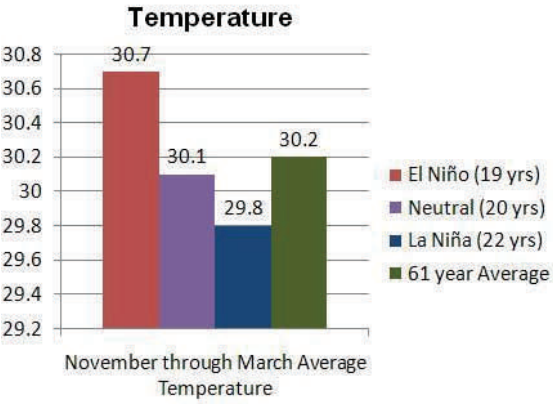
Dubuque:

* On average, experiences much greater snowfall during La Niña seasons, compared to El Niño years, but only slightly greater than neutral years.
* Precipitation averages much lower than neutral seasons, but is nearly the same as El Niño seasons.
* Temperatures average slightly cooler during La Niña seasons.

Moline







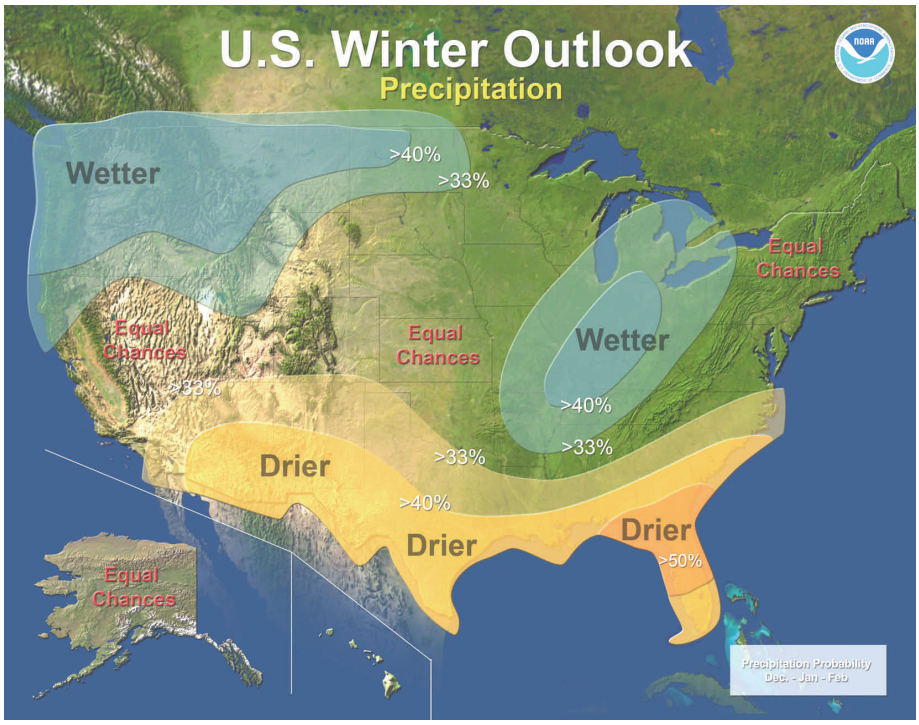
Moline:

* On average, experiences several more inches of snow during La Niña seasons, compared to both neutral and El Niño years.
* Precipitation averages slightly higher than both neutral and El Niño seasons.
* Temperatures average slightly cooler during La Niña seasons.

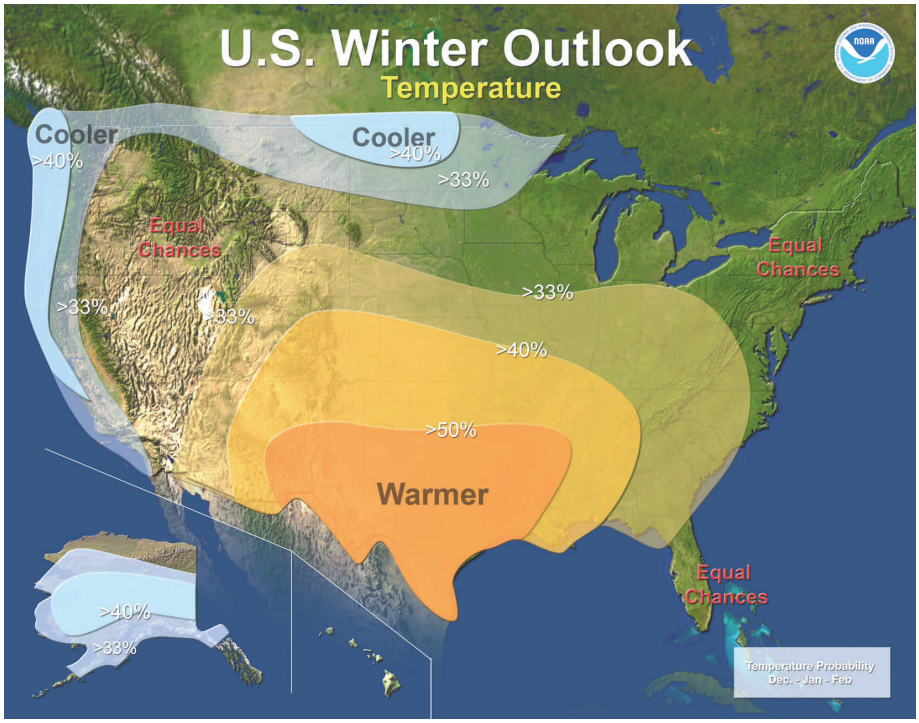
Strong La Niña Expected This Winter

(continued from page 4)

National Weather Service Winter Outlooks



Precipitation probability forecast – December through February. Percentages are the probability of greater than normal or less than normal precipitation for these winter months.



Temperature probability forecast – December through February. Percentages are the probability of warmer or cooler than normal temperatures for these winter months.

How does a "La Niña Winter" compare to all other winters?

Burlington:
Snowfall: +5.7 inches
Temperature: -0.7 degrees

Cedar Rapids:
Snowfall: +3.8 inches
Temperature: -0.8 degrees

Dubuque:
Snowfall: +4.2 inches
Temperature: -0.7 degrees

Moline:
Snowfall: +6.4 inches
Temperature: -0.6 degrees

75 Year Length of Service Awards

Tim Gross

Gladstone Lock and Dam 18 employees were presented a 75 year Institutional Length of Service Award and High Water Mark Sign on September 23, 2010 by Maren Stoflet, Hydrologist (far left), Terry Simmons, DAPM (second from left), and Steve Kuhl, MIC (far right).

Co-Op awards were presented to employees at three lock and dams along the Mississippi River during the fall months. Observers at these locations take daily observations for the weather service and are greatly appreciated.

A New Boston Lock and Dam 17 employee was presented a 75 year Institutional Length of Service Award on September 23, 2010 by Steve Kuhl, MIC (far left), Terry Simmons, DAPM (second from left), and Tim Gross, Meteorologist Intern (far right).

Illinois City Lock and Dam 16 lockmaster, Jim Headley, was presented a 75 year Institutional Length of Service Award on September 23, 2010 by Terry Simmons, DAPM (second from left), Tim Gross, Meteorologist Intern (second from right), and Steve Kuhl, MIC (far right).

NWS Quad Cities Welcomes Tim Gross

Tim Gross, a new employee at the NWS Quad Cities Office, began working on June 21, 2010. He was formerly a Student Career Experience Program (SCEP) appointee in the National Weather Service. SCEP offers valuable work experience and formal periods of work and study while attending school.

Tim graduated with a B.S. in Meteorology with high honors (summa cum laude and department scholar) from Western Illinois University in May 2010. Tim was married on May 29, 2010 and resides in Moline, IL.

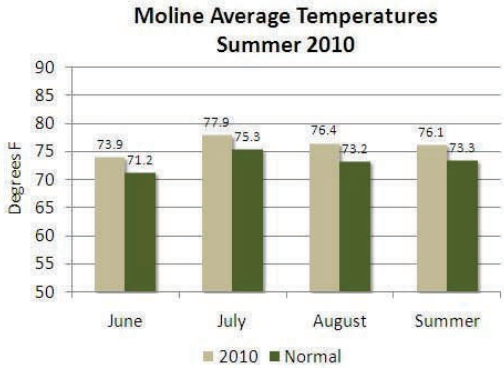
Tim is already involved with many programs at the NWS Quad Cities office. He is currently the Co-Op program focal point, overseeing the quality control of Co-Op observations, training of new observers, carrying out end-of-the-month tasks, and performing routine and emergency visits to each site in the Quad Cities County Warning Area. This includes over 75 sites in 36 counties. He has carried out some site visits this fall. He is also a member of the climate team and a county coordinator with the Community Collaborative Rain, Hail and Snow (CoCoRaHS) program in Northwest Illinois.

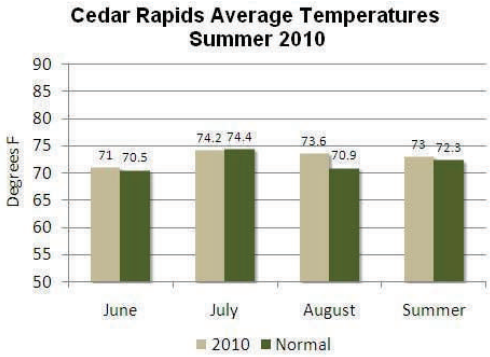
When Tim is not visiting sites, he works operational shifts, which includes answering phone calls, monitoring NOAA weather radio broadcasts, launching upper air balloons, providing support during severe weather, and performing quality control of weather observations. He is more than willing to answer any questions regarding the Co-Op program and can be contacted via email at tim.gross@noaa.gov .

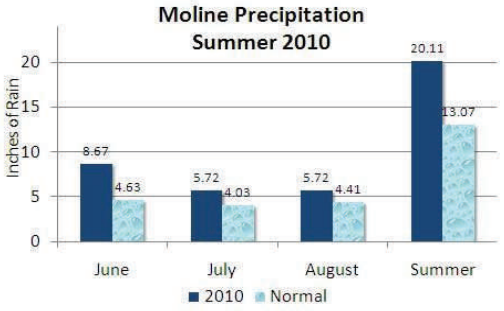
Co-Op questions? Contact Tim at: tim.gross@noaa.gov

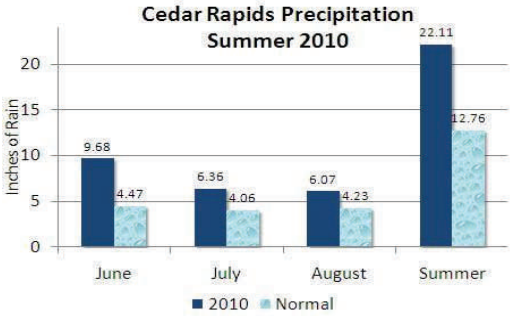
Wet Weather Continued in Summer 2010

David Sheets









A trend of wetter than normal summer weather, that began back in 2006, continued in 2010. This past summer, both Moline and Cedar Rapids had precipitation well above normal. June was by far the wettest month, with nearly double the typical monthly totals at Cedar Rapids and Moline.

Summer 2010 was warmer than normal at both Cedar Rapids and Moline. This was a significant change, as it followed two consecutive cool summer seasons. At Moline, a trend of above normal monthly temperatures began in March, and continued through November. Cedar Rapids has experienced warmer than normal monthly temperatures nearly every month through the same period.

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Weather Home Companion

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