



NATIONAL WEATHER SERVICE
DES MOINES IA

- Winter Weather Awareness
- Be Prepared



Inside this issue:

Winter Weather Preparedness 2

Review of Last Winter's Storms 3

Cooperative Observer Awards 4

Meet the National Weather Service Employees 5

Iowa State Fair booth 5

Summer 2007 in Review 6

Outlook for Winter 2007-2008 7

NWS Connects with Emergency Personnel 9



Volume 1, Issue 3

Fall/Winter 2007/2008

Winter Weather Awareness Day In Iowa — Nov 8th

The National Weather Service in conjunction with the Iowa Homeland Security and Emergency Management declared November 8, 2007 as Winter Weather Awareness Day in Iowa. Each year, winter returns to Iowa and can produce snow storms, blizzards, ice storms and periods of extremely cold temperatures and dangerous wind chills.

Winter Weather Facts

- Each year, dozens of Americans die due to exposure to cold. Add to that number, vehicle accidents and fatalities, fires due to dangerous use of heaters and other winter weather fatalities and you have a significant threat.
- Threats, such as hypothermia and frostbite, can lead to loss of fingers and toes or cause permanent kidney, pancreas and liver injury and even death. You must prepare properly to avoid these extreme dangers. You also need to know what to do if you see symptoms of these threats.
- A major winter storm can last for several days and be accompanied by high winds, freezing rain or sleet, heavy snowfall and cold temperatures.
- People can become trapped at home or in a car, without utilities or other assistance.
- Attempting to walk for help in a winter storm can be a deadly decision.
- The aftermath of a winter storm can have an impact on a community or region for days, weeks or even months.
- Extremely cold temperatures, heavy snow and coastal flooding can cause hazardous conditions and hidden problems.



Photo Courtesy of Iowa DOT

Winter Weather Preparedness— Before the Storm Hits

At Home and Work: Have available

- Extra flashlights and batteries
- Battery powered weather radio
- Extra food and water
- Extra medicine and baby items
- First-aid supplies
- Heating fuel
- Emergency heat source
- Fire extinguisher /smoke alarm

On the Farm or with Pets:

- Move animals to sheltered areas if possible
- Haul extra feed/hay
- Make sure plenty of water will be available
- Pets should have plenty of food, water, and shelter too.
- If it's going to be extremely cold, consider bringing pets inside or into garage.

Continued on next page

Winter Weather Preparedness *continued*

In Vehicles:

- Winterize vehicle before the winter
- Carry a Winter Storm Survival Kit, including:
 - Mobile phone and charger or extra batteries
 - Blankets
 - Flashlight and extra batteries
 - First-aid kit
 - Knife
 - High-calorie, non-perishable food
 - Extra clothing
 - Sack of sand or kitty litter
 - Shovel
 - Ice scraper
- Battery booster cables
- Keep gas tank near full



Van de Graff generator at the Iowa State Fair 2007—NOAA NWS & Iowa Emergency Management Booth

Iowa new state record rainfall total for the month of August 2007 was established with around 9 inches of rainfall across the state. An incredible 12.34 inches fell at Lake Rathbun Dam on the night of the 23rd into early morning of the 24th. The site went on to end up with a total of 19.43 inches of rain for the month, breaking the August record of 17.74 inches which fell at Woodburn in August of 1903.

When Caught in a Winter Storm...

Outside	<ul style="list-style-type: none"> ● Find shelter ● Stay dry ● Cover all exposed body parts
Inside	<ul style="list-style-type: none"> ● Remain inside if possible, and stay warm using an alternative heat source, if needed. ● Close off unneeded rooms if your heat is off ● Cover windows at night. ● Wear layers of clothing
In Vehicles	<ul style="list-style-type: none"> ● Stay in vehicle ● Run engine about 10 minutes each hour for heat ● Crack the window a little bit when running the engine to avoid carbon monoxide poisoning ● Make sure exhaust isn't blocked by snow ● Be visible to rescuers by turning on dome light when running engine ● Exercise to keep warm



Photo courtesy of Jim Moreland

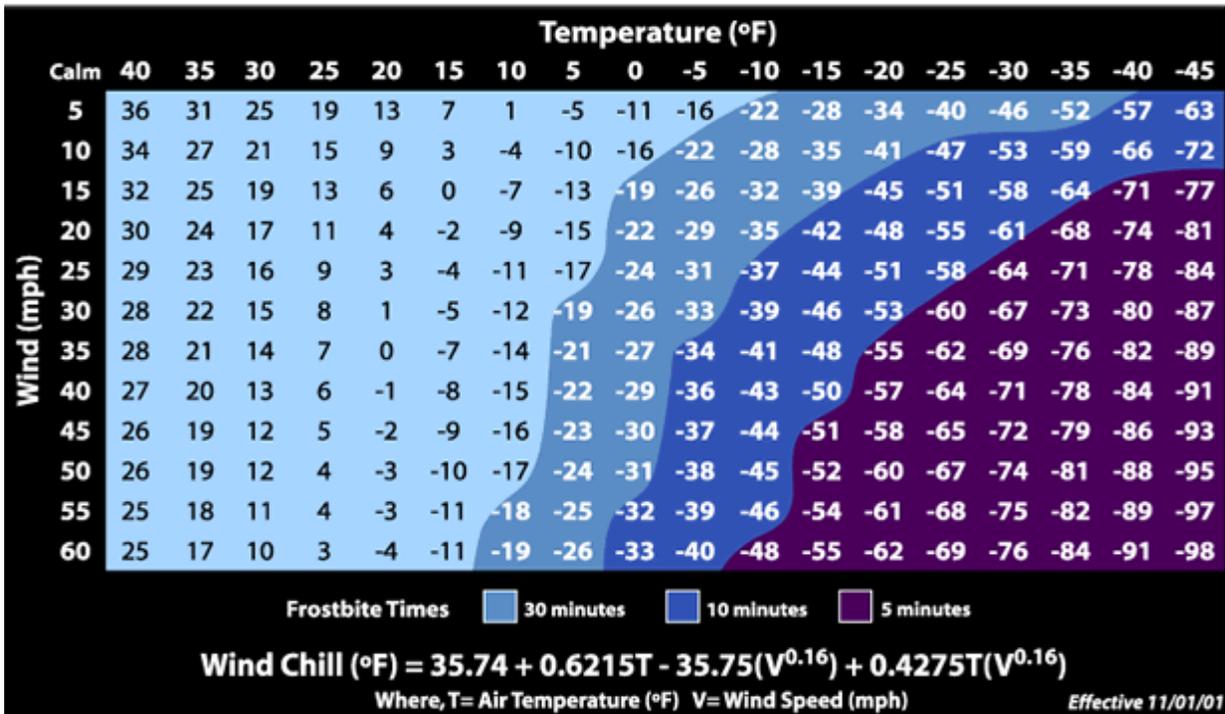


Photo courtesy of Jim Moreland

Photos courtesy of Iowa DOT



NWS Windchill Chart



Even without snow and ice, winter can bring hazardous temperatures and dangerous wind chills to Iowa. You can always find the current temperature and wind chills around the state by clicking on **Observations**, found in our left-hand navigational menu under Current Conditions. The wind chill chart below depicts a scientifically derived length of time before frostbite occurs based upon temperature and wind speed on a human.

Additional winter safety information is available on the National Weather Service Des Moines website (<http://www.crh.noaa.gov/dmx/?n=winter>).

A Review of Last Winter’s Major Storms by Jeff Johnson, Warning Coordination Meteorologist

Two major winter weather events occurred late last winter which had a significant impact across Iowa. The events happened within several days of each other.

February 24-26, 2007 Snow and Ice Storm

A major snow and ice storm struck the state on February 24th and continued into the 25th. Widespread icing occurred which resulted in significant impacts. Damage included widespread power outages due to thousands of downed power lines. At the height of the storm, at least 265,000 customers were without power. Some areas were without power for well over a week. The hardest hit areas were northeast and east of Des Moines in Poweshiek, Marshall, Tama and Black Hawk counties. In addition to the ice, heavy snow also fell during this storm with 6 to 12 inches common across western Iowa. Strong winds combined with the snow to produce near blizzard conditions. The February 24-26, 2007 storm was one of the worst ice storms to impact Iowa in the past 40 years.



Photo courtesy of Ron Collum, MidAmerican Energy

Northeast Iowa

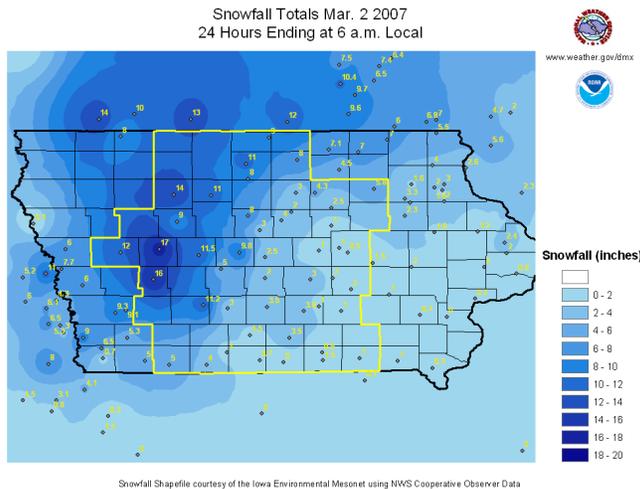
Photo courtesy Mid American Energy

Continued on next page

A Review of Last Winter's Major Storms *continued*

March 1-2, 2007 Blizzard

Within a week of the February 24-26 ice and snow storm, a major blizzard occurred over western Iowa. Heavy snow and very strong northwest winds combined to produce widespread blizzard conditions. The combination of heavy falling snow, a deep snowpack from the storm a week before and very strong winds resulted in almost all rural roads over western Iowa becoming impassible in a short amount of time. Hundreds of people became stranded and the National Guard was called out to perform rescue missions.



A large area of northwest Iowa received over 10 inches of snow with the heaviest totals at 17 inches in Estherville and Carroll. Drifts of 5 to 10 feet were common with 16 foot drifts reported in Carroll. The blizzard was considered the worst blizzard in decades over western Iowa. In Carroll for example, the blizzard was the worst since the blizzard of 1947.

The significant storms last winter clearly show the need for Iowa's to take winter weather safety seriously. Please visit the winter weather safety website to learn how to protect yourself and your family from the dangers of winter weather. Another excellent website for family safety is www.bereadyiowa.org.

From the Electronics Technicians

by David Reese, Electronics Systems Analyst

Freezing rain sensors at ASOS sites all across the country are being restored to service. Each year the sensors are de-configured and turned off in late spring to save energy. In the fall they are restored to service. The sensors are calibrated and tested before being fully restored to service. All 8 of the ASOS sites we maintain in central Iowa have Freezing Rain sensors. These are located at the Des Moines, Waterloo, Mason City, Marshalltown, Ames, Estherville, Ottumwa, and Lamoni airports.

Freezing Rain Sensor



ASOS Equipment



Stratford Cooperative Observer 15 Year Service Award



Brad Fillbach, Hydrometeorological Technician, NWS Des Moines presented Cooperative Observer, Marvin Sorber of Stratford, IA with a 15-year Length of Service Award on September 25th. The National Weather Service greatly appreciates Marvin's dedicated service.

Meet the National Weather Service's Employees

NWS Des Moines Welcomes Our Newest Employee

Hi! My name is Gail Boeff. I am the new Administrative Services Assistant at WFO Des Moines. I previously worked at another civil service job in Oklahoma - as a medical clerk in an Army hospital. I was there for 7 years, and had previously been in other various jobs at the post. I have been a civil service worker for over 30 years. I enjoy walking, shopping, and being outside doing activities. I moved to Iowa to be closer to my family and I'm very happy to be here.



Craig Cogil, NWS Des Moines' Newest Senior Meteorologist

I was born and lived for several years in Fairbury, Nebraska before moving to Clinton, Iowa. The variety of weather I experienced in these locations during the early years of my life made a deep impression on me. These experiences in combination with my general interest in the earth sciences led me to Iowa State University where I graduated in 1994 with a degree in Meteorology.



I started working for the National Weather Service in Waterloo, IA upon graduation. At that time, we still took manual weather observations where we actually went outside and looked at the sky to determine cloud coverage and type. We also read various instruments to come up with a complete observation including temperature, pressure, precipitation, clouds and winds. Most of this became automated by the mid 1990s; about the same time the Waterloo office closed. At that time, I transferred to North Platte, Nebraska Weather Forecast Office and had the opportunity to launch upper air balloons. These launches were quite the experience, especially with 35 mph winds that skipped the 5 foot diameter balloons along the ground when launched.

I moved to the Des Moines Weather Forecast Office in November 1997 and became a General Forecaster the following summer. I was recently promoted to Senior Meteorologist as of October 2007. I have been involved in several different areas within the office including the weather radar, climate services, outreach activities, and local research. I also enjoy helping in the local communities where I live through the Lions Club, a local youth support organization, and various church activities.

NOAA and IEMA Team up during the Iowa State Fair



Pictured (from left): Jim Girardi, President of Conceptual Visions (Terri's Owner); Brenda Brock, MIC Des Moines, IA; Brad Fillbach, HMT Des Moines; Jeff Johnson, WCM Des Moines; Terri the robot; Thomas Cox, NOS Chief of Communications and Education; Lynn Maximuk, NWS Central Region Director; Mario Bory, Conceptual Visions; Craig Cogil, Forecaster Des Moines; and Bridget Moe, Floyd County, IA, Emergency Manager.

The National Oceanic and Atmospheric Organization's (NOAA) National Weather Service (NWS) and National Ocean Service (NOS), and the Iowa Emergency Management Association (IEMA) teamed up during the Iowa State Fair 2007. They organized and manned a booth that included educational information from each organization, two LCD TVs with a continuous video of radar imagery, tornado footage, a NOAA 200th Anniversary highlights reel, and an artificial intelligence robot named Terri. The booth also involved a touch screen TV that displayed the Mississippi River Basin, a Van de Graff generator (pictured on page 2), a lightning tube, and a NOAA weather radio giveaway.

The Des Moines National Weather Service would like to extend a special thank you to NOAA's NWS and NOS employees involved with creating and organizing the booth during the Iowa State Fair 2007. Those heavily involved with creating the booth from the National Weather Service office in Des Moines were Craig Cogil, Jeff Johnson, Brad Small, Robert DeRoy, Drew Bouvette, Darren Gregory and Shane Searcy. Peggy Reelitz, Olivia Sommerlot, Steve Noland and A.J. Mumm from the Polk County Emergency Management Agency also significantly contributed in the preparation of the booth.

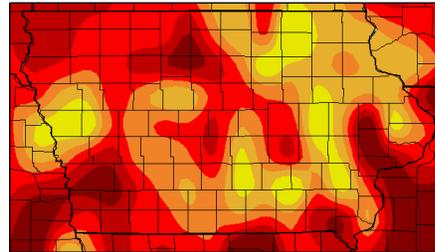
In addition to those that worked hard in preparing the State Fair booth, a great appreciation goes out to the employees from NWS Des Moines, NWS Quad Cities, NWS Omaha/Valley, NWS La Crosse, and all the Iowa county emergency managers and/or staff who spent time in the booth.

Summer 2007 in Review - Still Warm and Wet Late by Craig Cogil, Senior Meteorologist

Temperatures

The summer continued many of the trends from the springtime with above normal temperatures as all months had warmer than normal readings. Temperatures generally ranged from one to two degrees above normal throughout the state with the warmest departure across the west and the south. However, only three locations reached 100 degrees this year and all were in the far southeast Iowa. Keokuk, Keosauqua and Fort Madison all broke the century mark in the middle of August with the highest reading of 103 in Keokuk on August 15th.

Departure from Normal Temperature (F)
7/1/2007 - 9/30/2007

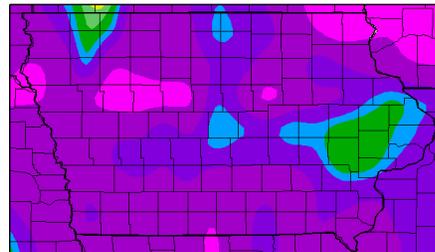


Generated 10/11/2007 at HPRCC using provisional data. NOAA Regional Climate Centers

Precipitation

Precipitation was quite variable during the period from June through September across Iowa. June and July saw very low precipitation totals across northwest Iowa with some locations having the driest months ever. However, August reversed the trend of drier weather with extremely heavy rain during the month. In fact, all reporting stations in the state had above normal precipitation with most locations from 150 to 300 percent of normal rainfall.

Percent of Normal Precipitation (%)
8/1/2007 - 8/31/2007



Generated 9/20/2007 at HPRCC using provisional data. NOAA Regional Climate Centers

Climatological Data for July, August, September, October 2007

Location	Month	Average Temp	Departure	Highest	Lowest	Rain / Snow	Departure
Des Moines	Jul	76.8°	+0.7°	96° (17 th)	58° (13 th)	2.56" / 0"	-1.62" / 0"
	Aug	77.4°	+3.5°	93° (14 th)	59° (31 st)	7.08" / 0"	+2.57" / 0"
	Sep	66.7°	+1.6°	89° (4 th)	37° (15 th)	3.53" / 0"	+0.38" / 0"
	Oct	57.2°	+4.4°	85° (5 th , 6 th)	31° (28 th)	5.49" / 0"	+2.87" / 0"
Mason City	Jul	72.1°	-0.3°	97° (8 th)	49° (20 th , 13 th)	4.99" / 0"	+0.65" / 0"
	Aug	71.0°	+1.2°	90° (11 th)	50° (30 th)	10.04" / 0"	+5.52" / 0"
	Sep	62.8°	+1.8°	90° (17 th)	28° (15 th)	3.12" / 0"	-0.16" / 0"
	Oct	53.5°	+4.8°	86° (6 th)	25° (28 th)	4.70" / 0"	+2.20" / 0"
Waterloo	Jul	73.0°	-0.6°	95° (8 th)	51° (13 th)	4.64" / 0"	+0.44" / 0"
	Aug	73.1°	+1.9°	90° (11 th , 28 th)	52° (31 st)	10.33" / 0"	+6.25" / 0"
	Sep	64.5°	+1.9°	90° (4 th)	30° (15 th)	4.18" / 0"	+1.23" / 0"
	Oct	54.8°	+4.6°	87° (6 th)	25° (28 th)	3.76" / 0"	+1.27" / 0"
Ottumwa	Jul	74.1°	-2.6°	91° (8 th)	54° (13 th , 22 nd)	3.84" / 0"	-0.61" / 0"
	Aug	76.2°	+2.0°	93° (7 th)	53° (31 st)	9.76" / 0"	+5.73" / 0"
	Sep	65.8°	+0.2°	88° (3 rd , 4 th)	32° (15 th)	3.23" / 0"	-0.84" / 0"
	Oct	56.8°	+3.1°	87° (5 th , 7 th)	29° (28 th)	3.74" / 0"	+0.99" / 0"

Summer 2007 Statewide Monthly Averages and Rankings

135 years of records (September numbers are preliminary)

Month	Temperature	Departure from Normal	Rainfall	Departure from Normal	Temperature Ranking	Precipitation Ranking
June	70.6	+0.8	3.49	-1.15	48th warmest	34th driest
July	73.9	+0.1	3.50	-0.75	65th coolest	66th wettest
August	74.5	+3.2	9.78	+5.59	17th warmest	1st wettest
September	65.1	+2.2	2.80	-0.61	43rd warmest	55th driest

Outlook for the Winter by Miles Schumacher, Senior Meteorologist

As temperatures cool during September and August, many people begin to think about the upcoming winter season. There are two major players in the eventual outcome of this winter. One of them is the development of La Niña across the tropical Pacific. The strength of the La Niña is expected to be at least moderate and possibly strengthen into the strong category over the winter months. La Niña conditions are expected to last through the winter. The development of La Niña is quite evident when looking at a map of sea surface temperature departure from normal (Fig. 1).

BMRC/NMC Global SST Anomaly
Week Ending 14 Oct 2007

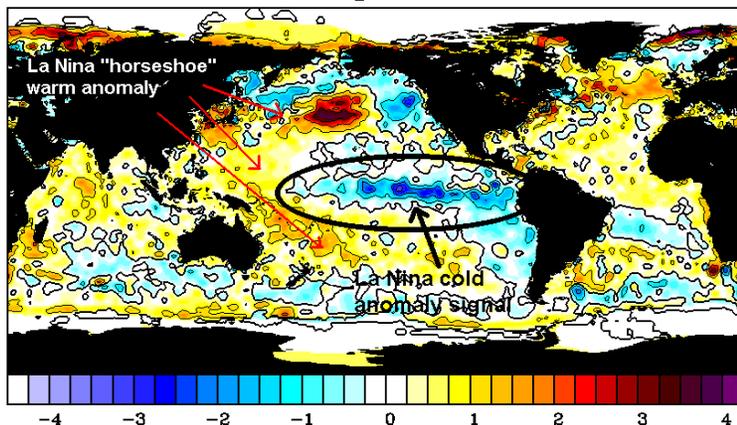


Figure 1: Sea Surface temperatures departure from normal.

Typically, the effects of La Niña are the opposite those of El Niño. In a weak La Niña, it is typically cooler than normal from the Great Lakes into the central Rockies and areas northwest, and warmer over the southern and eastern U.S. Interestingly, with a strong La Niña, temperatures tend to be warmer than normal over a large part of the U.S., especially in the central states. The La Niña this year has developed earlier than normal, which leads to the possibility it may also weaken DURING the upcoming winter, affecting the last half of the winter season.

The second factor to consider this winter deals with the meltdown that took place of the North Polar ice cap. Significant melting took place this summer owing to a record being set for the least amount of ice cover on record across the Arctic Basin. This may well have an effect on the weather in Iowa this winter. The vast amount of open water will take longer than normal to refreeze. Another consideration is the eventual thickness of the ice when it does freeze. Though the ocean freezing over will allow cold air to spill across the North Pole, thinner ice will allow more heat to transfer from the ocean beneath the ice to the atmosphere. The map below shows the state of the sea ice near its minimum extent. The pink line denotes the normal position of the ice cover at the seasonal minimum (Fig. 2). Of significance is the area that melted in the part of the ocean where much of the cold air that affects Iowa during the winter season traverses before entering the U.S.

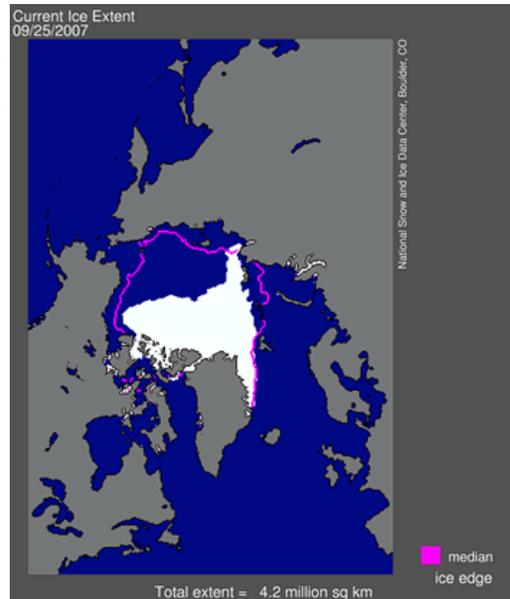
Although meteorologically, no two years are the same, a look at weather patterns of the recent past can give some indications of near term weather trends in the future. Based on the best fit from several of the years that were similar to the summer and early fall just past, and considering the state of La Niña, the month of November is likely to be above normal across Iowa. The coolest weather will likely be over the northeast corner of the state. Statistically, the chance of November being warmer than normal is about 70%. As for precipitation, it is typically drier than normal during the month of November over a large part of the central and eastern U.S. Based on the analysis of similar years, the chances are good that this November will be a drier than normal month in Iowa. See Fig. 3 and Fig. 4.

Continued on next page

Outlook for the Winter *continued*

The winter season can be quite tricky during a La Niña pattern. There is a substantial amount of volatility in the record of La Niña winters. At present, it does appear that this winter will be characterized as a moderate to strong La Niña winter. The odds would favor a warmer than normal winter season if that is indeed the case. However, the current La Niña appears to be approaching maturity earlier than it normally does and should the La Niña break down or weaken mid-season, the effects would be quite different. Recall that a weak La Niña is typically cooler than normal. With that being said, the winter is likely to start out warmer than normal through at least December into January, but may very well turn colder than normal in February.

Figure 2: Recent sea ice cover minimum in white, median minimum in pink.



In fact, whether La Niña remains strong or weakens, the odds favor March turning out to be a cold month; more on that later. The chance of the winter being warmer than normal is greater than 50%. There is a chance the winter will end up colder than normal, but the odds are only 1 in 7 based on years similar to this year. Fig. 5 shows the most likely outcome probabilistically.

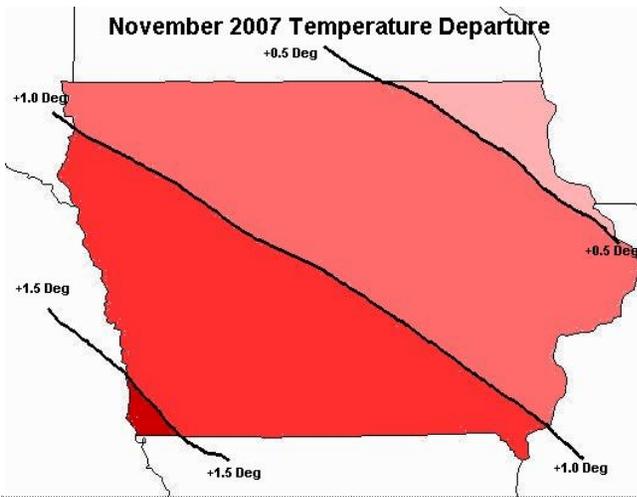


Figure 3: Mean Temperature departure for the month of November.

The second consideration for this winter is the condition of the polar sea ice pack. The lack of ice cover in the Arctic Ocean is unprecedented in modern times. Therefore, no analog year is available to take into account what effect that will have on the upcoming winter. As long as the ocean remains either open or only has a thin ice cover, it will likely have a moderating effect on Siberian air masses on their trek to the U.S.

As for precipitation for the winter season, there is not a strong indication toward either above or below normal precipitation. It does appear that there will be an active storm track across the U.S. this winter. It is likely there will be a band of above normal precipitation along the storm track. Indications are that most of the heavy precipitation from these storms will be to the south of Iowa. For that reason, there is an indication that precipitation will be just a little above normal for the winter season, but not by a great deal. Fig. 6 shows the cumulative departure from normal for precipitation for the months of December, January, and February.

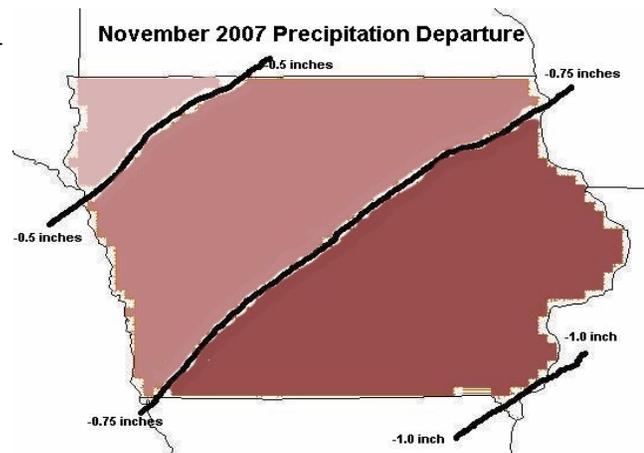


Figure 4: Precipitation departure from normal for the month of November.

As anybody knows that has lived in Iowa for more than just a few years, "winter" isn't over at the end of February. Even though temperatures are warmer and any snow that does fall is not likely to last, the first two weeks of March are the climatological maximum for snowstorms in Iowa. Early indications are that March will likely end up colder than normal for Iowa. On the positive side, assuming La Niña remains intact that long, precipitation is also typically below normal in the March

Continued on next page

Outlook for the Winter *continued*

following a La Niña.

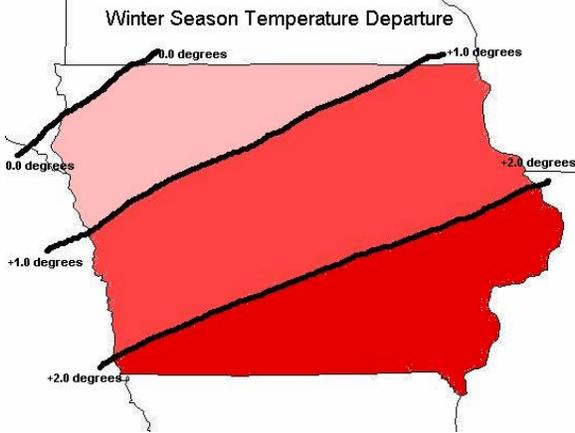


Figure 5: Temperature departures for December 2007 through February 2008.

These outlooks are based more heavily on statistics than many of the methods used by the Climate Prediction Center (<http://www.cpc.ncep.noaa.gov>). The complete set of official forecasts from the Climate Prediction Center can be found on our website (http://www.weather.gov/climate/climate_prediction.php?wfo=dmx).

There was record low June precipitation at several northwest Iowa locations including Cherokee with 0.57 inches (old record 0.90 in 1933 among 88 years of records).

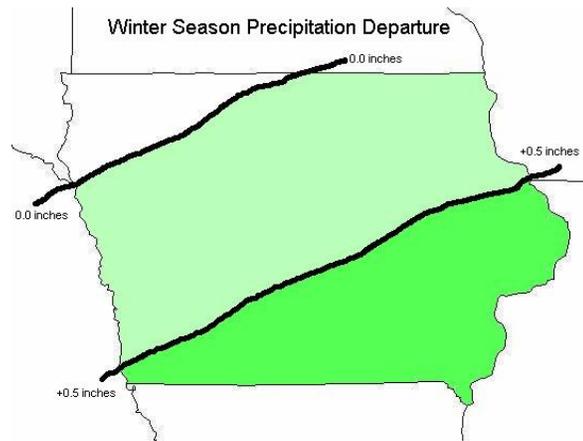


Figure 6: Cumulative precipitation departure for December 2007 through February 2008.

Normal High/Low Temperatures				
Location	Nov 1	Dec 1	Jan 1	Feb 1
Des Moines	55 / 35	39 / 22	29 / 12	31 / 14
Mason City	51 / 31	33 / 17	23 / 6	25 / 7
Waterloo	53 / 32	37 / 18	26 / 7	28 / 8
Ottumwa	56 / 37	40 / 24	30 / 15	32 / 16

Seasonal Snowfall Normals (July 1- June 30)		
Location	Normal	2006-2007 Season Total
Des Moines	36.2"	39.3"
Mason City	39.4"	53.1"
Waterloo	34.1"	29.2"
Ottumwa	26.9"	18.6"

NWS Connects with Emergency Personnel by Brad Small, Senior Meteorologist

The National Weather Service (NWS) in Des Moines has initiated an exciting new project that can connect itself to all dispatch offices and emergency managers in its 51 county area. The system developed by the Iowa State University Iowa Environmental Mesonet is called the IEMChat Project and is essentially a secure private internet chatroom in which all participating public safety agencies can collaborate and share information. The room is an ideal place to pass along severe weather reports and coordinate during active weather events. Emergency managers and 911 dispatch offices can all see activity in adjacent counties and be prepared for what's to come as well as keeping the NWS informed. The chatroom also has the added feature of having all NWS severe weather watches, warning and advisories automatically appear in the room. Clickable links instantly display applicable text, radar imagery and storm based warning information which is a great decision-making tool for dispatch offices with siren activation responsibility.

NATIONAL
WEATHER SERVICE
DES MOINES IA

9607 NW Beaver
Johnston IA 50131-1908

Phone: 515-270-4501
Fax: 515-270-3850

Visit us at:
www.weather.gov/dmx

Central Iowa
The Weather Whisper

Editors:
Ben Moyer
Ken Podrazik



Winter Weather Information Flow and Availability

You can and should take responsibility to be prepared for hazardous winter weather by becoming familiar with the flow and types of information available from your National Weather Service office. This information is shared through local media outlets, the internet, NOAA All Hazards Weather Radio, and increasingly through wireless communication. Various types of informational products will flow from your local NWS office, depending upon the time frame of when the winter weather will occur. Specifically, you should listen for and be aware of:

Outlooks: This information is shared in our daily **Hazardous Weather Outlooks** (<http://www.crh.noaa.gov/dmx/?n=outlooks>) for weather that will occur from two to seven days out.

Watches: This information is sent out when winter storm conditions are possible within the next 36 to 48 hours.

Warnings: Life-threatening severe winter conditions have begun or will begin within 24 hours. Using the information found in this newsletter and on associated links, take action now to make potentially life-saving decisions.

Advisories: Winter weather conditions are expected to cause significant inconveniences and may be hazardous, especially for automobiles or early in the winter season. If you are cautious, these situations should not be life-threatening.

Watch, Warning and Advisory information can all be found on the front page of the NWS Des Moines website (<http://www.crh.noaa.gov/dmx>) or in our Watches/Warnings link (<http://www.crh.noaa.gov/hazards/dmx>) underneath "Current Hazards" on the left-hand menu.