National Weather Service Forecast Office Chicago

CHICAGO

Weather Currents

Winter 2012

Volume 10, Issue 4

Inside this issue:

Top Ten Weather Events for Northern Illinois and Northwest Indiana for 2012

by Jim Allsopp, Warning Coordination Meteorologist

In a typical year, this annual list of weather events would include entries such as heavy snows, tornado outbreaks, giant hail, damaging thunderstorms, high winds, and floods. But 2012 was not a typical year. Persistent warm and dry weather brought far fewer hazardous weather events to the local area. So this year's list will primarily focus on the unusually warm and dry weather.

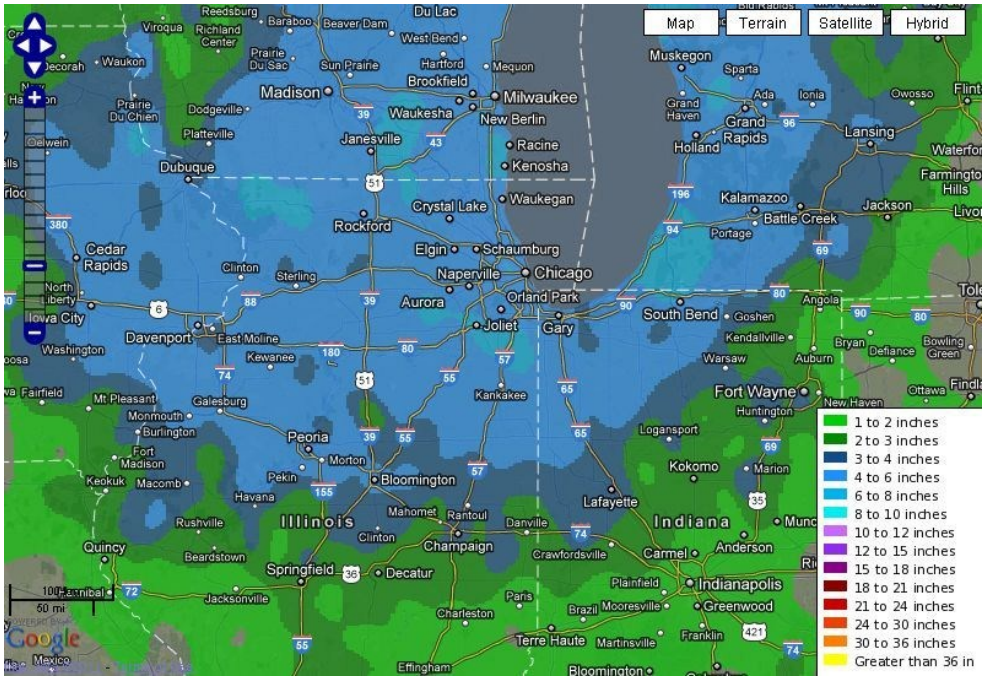
Many of the listed events refer to normal and record temperatures in Chicago and Rockford. In Chicago, official temperature records date back to 1871. The official Chicago weather observatory has moved to several locations over the years. Currently O'Hare International Airport is the official observation site. For Rockford, weather data goes back to 1906. The Chicago-Rockford International Airport is currently the official observatory. Normal temperatures and precipitation are computed using the 30 year period from 1981 to 2010.

Mild Winter

After four consecutive 50 inch snow seasons, Chicago had only 19.8 inches for the 2011-2012 winter season. It was the 10th least snowy season on record. The average temperature for the winter months of December through February was 32.8F, which was 6.4 degrees above the normal of 26.4F. It was the ninth warmest winter of all time. Rockford had 24.3 inches of snow for the season, which was 12.4 inches below normal. Temperatures averaged 30.2F for the winter months, which was 6 degrees above normal. It was the third warmest winter on record.

In addition, the temperature never went to 0F or below at Chicago. The coldest temperature was 5F on three dates in January. There have only been nine other winters in Chicago history without a temperature of 0F or colder. Rockford had a low temperature of 0F on two dates in January, but the temperature never dipped below zero, a first for Rockford.

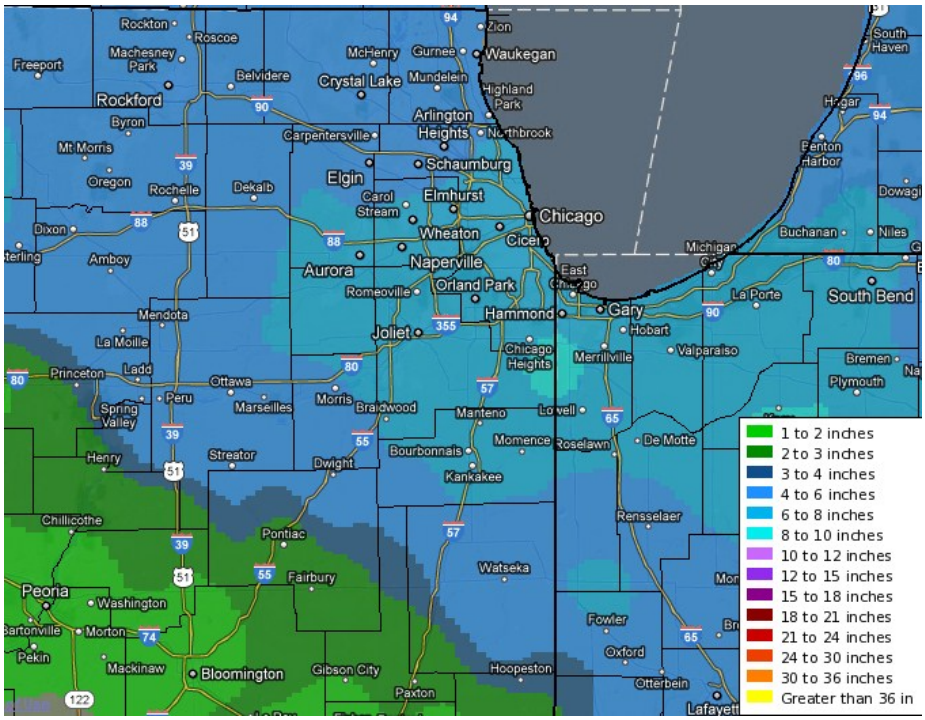
Top Weather Events of 2012 (cont)



There were only two snow storms of note in January. From mid morning on January 12 through early morning of January 13, four to eight inches of snow fell across northern Illinois, including 8.1 inches near Lincolnwood, 8.0 inches at New Lenox and officially 4.9 inches at O'Hare. Around 500 flights were canceled at O'Hare and 100 at Midway.

January 12, 2012 Snowfall Totals

On January 20, from noon through late evening, another five to eight inches of snow fell over northern Illinois and northwest Indiana. Totals included 5.4 inches at O'Hare, 5.1 inches at Rockford, and around 8 inches in Plainfield, Joliet, Downers Grove, Park Forest and St. John, IN.



January 20, 2012 Snowfall Totals

Top Weather Events of 2012 (cont)

Unprecented March Warmth

The stretch of incredible warmth from March 14 through March 22 was probably the most anomalous weather event of any kind over northern Illinois and northwest Indiana in several decades, rivaling the incredible Rockford heat wave of July 1936 or the Chicago heat wave of late August-early September 1953. Here are some of the statistics;

The average March temperature in Chicago was 53.5F, which was 15.6 degrees above normal and almost 5 degrees warmer than the warmest March ever! High temperatures March 14 through 22 were 81, 81, 82, 82, 81, 78, 85, 87, and 83 – all records. In the previous 140 years only ten 80 degree temperatures were ever recorded in Chicago in March. There were eight days with temperatures in the 80s in March 2012. Chicago broke or tied daily high temperature records on nine consecutive days. This was the second longest stretch of standing daily temperature records of any type for Chicago dating back to 1871. The record for standing consecutive temperature records is ten from August 25-September 3, 1953.

Date	Record	Previous Record (Year)
3 / 7	Warm Low: 54°	53° (2000)
3 / 14	High: 81°	77° (1995)
3 / 15	High: 81°	74° (1995)
3 / 16	High: 82°	78° (1945)
3 / 17	High: 82° / Warm Low: 52°	74° (1894, 2009) / 49° (1894)
3 / 18	High: 81°	74° (1903, 1918, 1969)
3 / 19	Tied High: 78° / Warm Low: 61°	Tied 1921 / 59° (1903)
3 / 20	High: 85° / Warm Low: 63°	76° (1921) / 53° (1918)
3 / 21	High: 87° / Warm Low: 61°	77° (1938) / 54° (1918)
3 / 22	High: 83°/ Warm Low: 60°	79° (1938) / 59° (1938)
3 / 23	Warm Low: 55°	50° (1936)

Top Weather Events of 2012 (cont)

Rockford also had the warmest March ever. The average temperature was 52.4F, which was 15.2 degrees above normal, and the warmest March on record by almost four degrees. Highs March 14 through 22 were 89, 82, 80, 82, 81, 77, 83, 84, 79. Rockford broke daily high temperature records on eight of nine days from March 14 to 22. Only March 19th did not reach a record high. In Rockford, prior to March 2012, there had been a total of twelve days in the 80s in March dating back to 1906, which means Rockford averages an 80 degree day in March approximately once every eleven years. There were six days at or above 80 in March 2012. At Rockford, the daily records for warm lows were broken for nine consecutive days between March 14 and 23. Dating back to 1906, no other stretch of standing warm low records is of this duration for Rockford. There were eight straight days (and ten of eleven) of record highs in the 100s in July, 1936.

Date	Record	Previous Record (Year)
3 / 7	Tied Warm Low: 47°	Tied 1992
3 / 14	High: 79°	74° (1995)
3 / 15	High: 82° / Warm Low: 54°	73° (1995) / 49° (1945)
3 / 16	High: 80° / Warm Low: 48°	75° (1945) / 43° (1946)
3 / 17	High: 82° / Warm Low: 57°	75° (2009) / 45° (2003)
3 / 18	High: 81° / Warm Low: 54°	73° (1945) / 42° (1968)
3 / 19	Warm Low: 62°	54 ° (1945)
3 / 20	High: 83° / Warm Low: 61°	79° (1921) / 53° (1921)
3 / 21	High: 84° / Warm Low: 62°	78° (1938) / 53° (1918)
3 / 22	High: 79° / Warm Low: 61°	76° (1938) / 59° (1938)
3 / 23	Warm Low: 53°	49° (1935)

For more on the March warmth go to:
Reflecting on the Historic and Unprecedented Warmth of March 2012
A Meteorological Retrospective of the March 2012 Heat Wave

Top Weather Events of 2012 (cont)

Warm Spring
Chicago experienced its warmest spring ever with an average temperature of 56.6F, which was 8 degrees above the normal of 48.6F. Record highs of 97 and 95 were recorded on May 27 and 28, respectively. It was the warmest ever so early in the year. There were 26 days in spring 2012 with a maximum temperature of 80 or greater, second only to 28 days in the spring of 1977.

Rockford also had its warmest spring ever. The average temperature was 55.8F, which was 6.9 degrees above the normal of 48.9F. Rockford had 19 days with a maximum temperature of at least 80, third behind 28 days in 1977 and 23 days in 1934.

For more on the warm spring go to:
Climate Statistics for the Record Warm Spring of 2012 at Chicago and Rockford

May 6 Tornado, Hail, Wind, Flash Flooding
Severe thunderstorms hit areas well south of Chicagoland, along the US 24 corridor during the late evening of May 6 and early morning of May 7. Golfball hail fell at Chebanse and baseball hail was reported at Clifton, both in Iroquois County. An EF1 tornado touched down southeast of Watseka, damaging two farms. Thunderstorm winds, estimated to 100 mph, blew down about 50 power poles on US 24 between Crescent City and Watseka. Large trees were also blown down along the highway and in Watseka. Power poles and tree limbs were downed near Otterbein in Benton County Indiana. Heavy rain caused flash flooding across the area and many creeks, fields, and roads were inundated.


Baseball sized hail from Clifton, IL

Hot, Dry June and July
In Chicago, the average June temperature was 74.0F which was 5.1 degrees above normal, and the sixth warmest June ever. The temperature hit 100 on June 28, the first 100 degree day in Chicago since 2005. There was only 0.90 inches of rain, which was 2.55 inches below normal, making it the fifth driest June on record. This was followed by the third hottest July ever. The average temperature for July was 81.1F, which was 7.1 degrees above normal. By the end of July, Chicago had reached 90 degrees or greater 35 times, surpassing the 32 days of 90 degree weather in the record setting year of 1988. Every day in the month of July was at least 80 degrees and every day's average temperature was normal or above normal. There was officially 3.66 inches of rain at the O'Hare Airport, but much of the Chicago metro area received much less rainfall.

Top Weather Events of 2012 (cont)

In Rockford, the average June temperature was 72.9F, or 3.1 degrees above normal, and twelfth warmest on record. There was only 0.66 inches of rain, making it the third driest June on record. The temperature hit 100 on June 28. The hot dry weather continued in July. The average temperature in July was 80.8F, or 7.0 degrees above normal. It was the hottest July ever recorded in Rockford. Rockford received 2.68 inches of rain in July, which was 1.27 inches below normal.

By mid to late July, large portions of northern Illinois and northwest Indiana, especially towards the Wisconsin state line and south of Interstate 80, suffered from severe to extreme drought.

The most intense heat wave of the summer occurred July 4 through 6. Highs in Chicago were 102, 103, and 103 – all records. It was the second warmest 3 day period in history and only the third time ever that Chicago hit 100 degrees for three straight days. In Rockford, there were four straight days over 100 from July 4 through 7. Highs were 102, 102, 104, 105. The 105 on July 7 was the warmest temperature in Rockford since 1936. It was also the first time the city hit 100 on four straight days since 1936.

The intense heat may have caused railroad tracks to expand and buckle on a bridge over Shermer Road in north suburban Glenview. There was a train derailment and bridge collapse, which left two motorists dead. There were 23 heat related fatalities reported by the Cook County Medical Examiner's office.

Severe Weather June 28 through July 1.
On June 28, severe storms dropped ping pong ball size hail near Elgin and golf ball size hail in southern Cook County near Alsip, Crestwood, South Holland and Lansing. Hail the size of tennis balls fell at Dyer, IN.

The following night an intense squall line produced wind gusts of 90 mph across Kendall and Will Counties. Trees and power lines were blown down. The hardest hit area was Romeoville. A wind gust to 87 mph was measured at the NWS office.

A line of less intense thunderstorms that moved across northern Illinois and northwest Indiana the morning of June 29th continued east southeast through the afternoon and evening, damaging trees and knocking out power across Indiana, Ohio, West Virginia, the Washington DC area and eventually reaching the east coast around midnight.

Another squall line produced a swath of wind damage across parts of Kane and northern DuPage Counties on July 1. Hardest hit areas were from West Chicago eastward across Carol Stream, Wheaton, Glen Ellyn, and Villa Park. Many trees and power lines were blown down by wind gusts of 70 to 90 mph, leaving about 250,000 customers without power.

Severe Weather Shuts Down Lollapalooza
On Saturday August 4, a line of severe thunderstorms downed trees throughout the Chicago metro area. Morris, in Grundy County, was especially hard hit with many large trees uprooted, some falling on car or homes. The line of storms continued east into Cook County, causing Chicago officials to shut down the Lollapalooza concert at Grant Park for three hours, forcing the evacuation of about 100,000 attendees.

More information on gusty thunderstorm winds can be found here:
Gusty Thunderstorms Have Been Frequent Despite Drought

Top Weather Events of 2012 (cont)

Grundy County EMA Communications Tower in Morris

Lollapalloza Rain Event —Sitthixay Ditthavong, AP

Rare August Gale

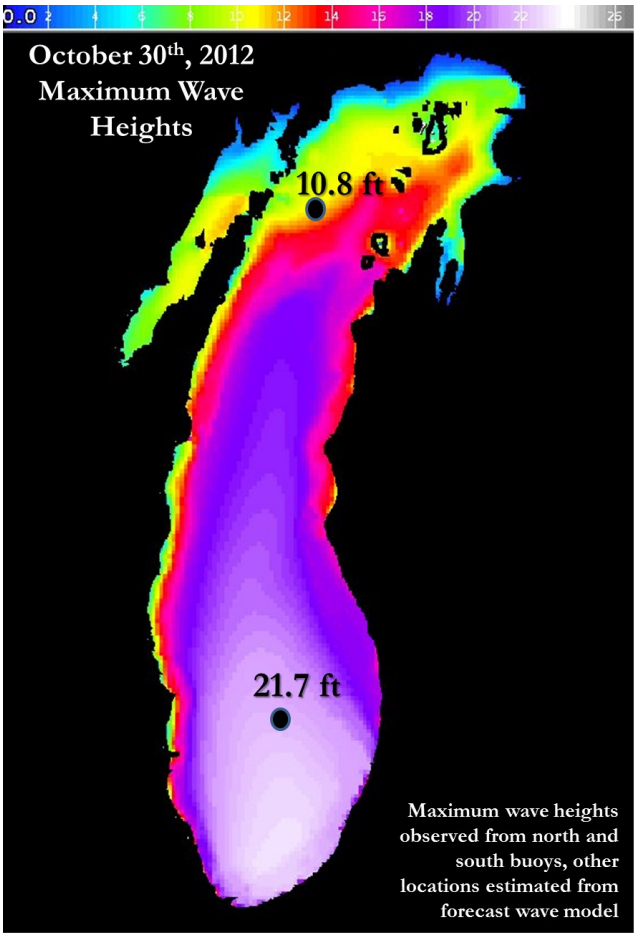
On August 9 and 10, an unseasonably strong low pressure system moved from the Lower Ohio Valley to the central Great Lakes while strong high pressure built over the northwestern Great Lakes and Upper Mississippi Valley. This brought unseasonably cool air down across a very warm Lake Michigan, resulting in heavy lake effect and lake enhanced showers and thunderstorms, a few waterspouts, gale force winds, and large waves. A weather buoy in southern Lake Michigan, which has been recording weather and water data since 1981, recorded the strongest winds and largest waves ever for the month of August. Winds peaked at 37 knots and waves reached 13.5 feet. Ship reports estimated waves to 18 feet, and Indiana Dunes officials estimated 12 to 16 foot waves.

Beverly Shores, IN—photo by Mike Bardou

Sandy Impacts Lake Michigan

As remnants of Hurricane/Superstorm Sandy drifted into western Pennsylvania and New York on October 30, strong north winds developed over Lake Michigan and the immediate Illinois and Indiana shoreline. Winds gusted to 69 mph at Michigan City, 60 mph at Gary Airport, 58 mph at Chicago's Harrison-Dever Crib, and 56 mph at the southern Lake Michigan buoy. The strong and persistent north winds caused waves to build to 21.7 feet at the buoy. This was the second largest peak wave ever recorded in the buoy's 31 year existence. A section of the Chicago lakefront bike path was shut down, and high winds damaged trees and a building at

Top Weather Events of 2012: (cont)



Chicago Lakeshore—photo provided by Gino Izzi

Maximum wave heights from Lake Michigan buoys on October 30, 2012

Early December Unusual Warmth and Lack of Snow

The high temperatures in Chicago December 1 through 4 were 59, 63, 70 and 59. The 70 degree high on December 3 was one short of the record for the date and month. The record of 71 was set in 1970. The other 71 degree December reading occurred on December 2, 1982. It was only the third 70 degree reading ever in the month of December and only one of six 70 degree days ever recorded during the winter months of December, January, and February.

In Rockford, the high temperatures were 58, 64, 69, and 58. The 64 on the second tied a record set in 1982. The 69 on December 3 broke the record of 65 set in 1970. It was also the warmest temperature ever recorded in Rockford in the month of December, breaking the record of 67 set on December 5, 2001.

No measurable snow fell through December 19 at Chicago or Rockford. At Chicago and Rockford, a record was set for the longest period without measurable snow, 290 days. The old record for Chicago was 280 days set in 1994. The record at Rockford was 287 days set in 1922. It was also the latest in the season without measurable snow for Chicago. The previous record was December 16.

More information on the warm December weather go to:
Spring in December; All-Time December High Set at Rockford

There hasn't been measurable snow in both Chicago and Rockford into mid December. *What has happened in other years that had a very late start to the snow season?*

by Kevin Birk, Forecaster

There have only been a handful of years in Chicago and Rockford in which the first accumulating snowfall of at least a tenth of an inch has occurred on or later than December 10th. A look back at the records for both Chicago and Rockford show that there have only been 4 such years at Chicago, and only 10 years at Rockford. As of this writing on December 13th 2012, there has yet to be any accumulating snowfall at either site and none is expected over the next few days. The latest date on record of the first accumulating snowfall in Chicago and Rockford is December 16th and January 7th, respectfully. So, although the record for the latest snowfall could be broken in Chicago, we still have a few weeks to go in order for Rockford's record to be in jeopardy.

The tables below display the top 12 to 13 dates of the latest first snowfall events on record at both Chicago (top) and Rockford (bottom). Also shown, is the total amount of snowfall during the following January through March period. Overall, although there is a considerable amount of snowfall variability at each site for the remainder of the winter season, snowfall during the January through March period was below the long term average by around 4 inches at both Chicago and Rockford. So what does this mean for the January through March 2013 time period? Well, overall not much. However, although snowfall did tend to end up below the long term average for the months following, there are a few that did turn out fairly snowy. This was especially true in Chicago during the January through March periods in 2002, 1974 and 1985. There were also several years with near average snowfall, which is around 25" in Chicago and 21.5" in Rockford for the January through March period.

So in summary, although we have not seen any white stuff yet this winter, history tells us that we could still see some decent snowfall amounts. In fact, climatologically January is the snowiest month of the year in Chicago with average snowfall amounts of 10.8". February is a close second with 9.1" on average. In Rockford January is the second snowiest month of the year at 10.2" on average. The season is still very young and those who like snow could still see plenty of it before the winter is over.

Skywarn Recognition Day

by Ben Deubelbeiss, Forecaster

The National Weather Service (NWS) and the American Radio Relay League (ARRL) celebrated the 14th annual SKYWARN Recognition Day on November 30th and December 1st. Amateur Radio Operators set up several stations and for 24 hours tried to make contacts with other NWS offices across the country, as well as other radio enthusiasts. This year, the team made just over 400 contacts across 44 states, Canada, and the Caribbean. The team contacted 43 NWS offices. This annual event celebrates contributions that the amateur radio community and SKYWARN spotters make to NWS warning operations. If you'd like to become a licensed HAM operator or become active with a SKYWARN net, check out the ARRL website, www.arrl.org, and look for a radio club in your area. More information about our local amateur radio SKYWARN reporting procedures can be found on our website, www.crh.noaa.gov/lot/?n=am_radio.

Photo from the NWS Chicago office during Skywarn Recognition Day

NWS Chicago to be at the Chicago Boat Show

By Amy Seeley, Hydro Meteorological Technician

If you are headed out to the Chicago Boat, Sports & RV at McCormick Place in January, why not stop by the Chicago National Weather Service booth!

We will be handing out pamphlets on weather and safety, talking about NOAA All Hazards Radio, answering your questions, and showing off our webpage.

If you would like help in programming your NOAA Weather Radio, feel free to bring it with you and we will help with that. Find out the latest on the newest weather products and services we are offering.

Hope to see you there!

Photo of Jamie Enderlen and Charles Mott at the NWS Chicago booth at the Chicago Boat, Sports & RV Show

Spotter Training 2013

by Jim Allsopp, Warning Coordination Meteorologist

The local National Weather Service (NWS) office, in cooperation with county and local emergency management agencies, law enforcement and fire departments, as well as local amateur radio clubs, provides severe storm spotter training classes across northern Illinois and northwest Indiana each year. The classes are offered from February through April, before severe weather season. The classes are free and open to anyone, and they take about 2 hours. The NWS is currently working with local officials to set up the spotter training schedule for spring 2013. The schedule will be posted on the NWS Chicago web page by mid January.

In the classes, attendees learn;

- about the NWS watch and warning process and the role of spotters
- basic thunderstorm structure and processes
- spotting and identifying cloud features and other environmental clues
- monitoring and reporting severe weather
- severe weather safety

This year, due to budget and staffing limitations, there will be a reduced number of traditional NWS spotter training classes offered. This will be supplemented by online training and spotter training webinars. More details will be posted on the NWS Chicago web page soon. You can also contact your municipal or county emergency management agency for other training opportunities.

NWS Winter Weather Headlines: Definitions and Future Plans

by Matt Friedlein, Forecaster

In advance of higher impact often hazardous weather, the National Weather Service (NWS) issues headlines (warnings, watches, and advisories) to express the likelihood of the weather event(s) and associated impacts with a mission to protect life and property and enhance the national economy. NWS Weather Forecast Offices issue a consistent set of headlines, although criteria can vary across the nation based on the certain phenomena's frequency of occurrence. Recently, our office has created a page that lists the local criteria of our headlines based on requests from the Emergency Management community. This can be found linked on our Preparedness page, or directly at this link: http://www.crh.noaa.gov/lot/?n=wwadef.

Winter storms regularly span a huge region and can include heavy snow, blowing snow, ice, and low wind chills and more, thus prompting the issuance of numerous headlines. Surveys and partnership interactions have shown that the terms "watch", "warning", and "advisory" can be confusing to the public. With that and a Weather-Ready Nation in mind, the NWS has 26 of its offices partaking in an online demonstration that depicts different headline wording in an attempt for more clarity as well as having the wording more impact-based. This demonstration will run through the winter. While this does not include our office in Chicago, the feedback and results obtained will influence the future path of headlines across the entire agency.

For more information, examples, and to comment on this demonstration, please visit the Winter Hazards Simplification Demonstration Page.