CHICAGO

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Winter 2009

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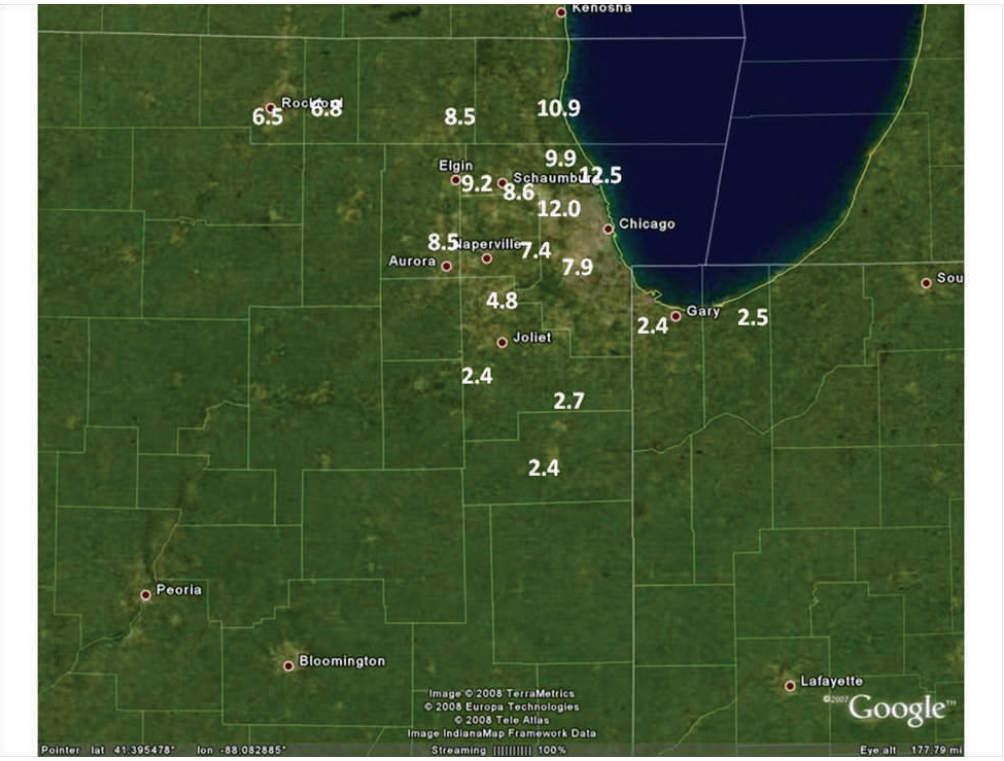
Top Weather Stories for 2009 for Northern Illinois and Northwest Indiana

by Jim Allsopp, Warning Coordination Meteorologist

January 9-10 Heavy Snow over the Northern Chicago Metro Area

Six inches to a foot of snow fell over parts of north central and northeast Illinois from Winnebago County to Lake County, southward to parts of Kane, Du Page, and Cook Counties. The heaviest snowfall included 12 inches at Evanston, 11.1 inches at Beach Park, and 10.2 inches at O'Hare Airport.



Map of heavy snow January 9-10, 2009 from NOAA/NWS

More on the January 9-10 snow here.

January 15-16 Bitter Cold

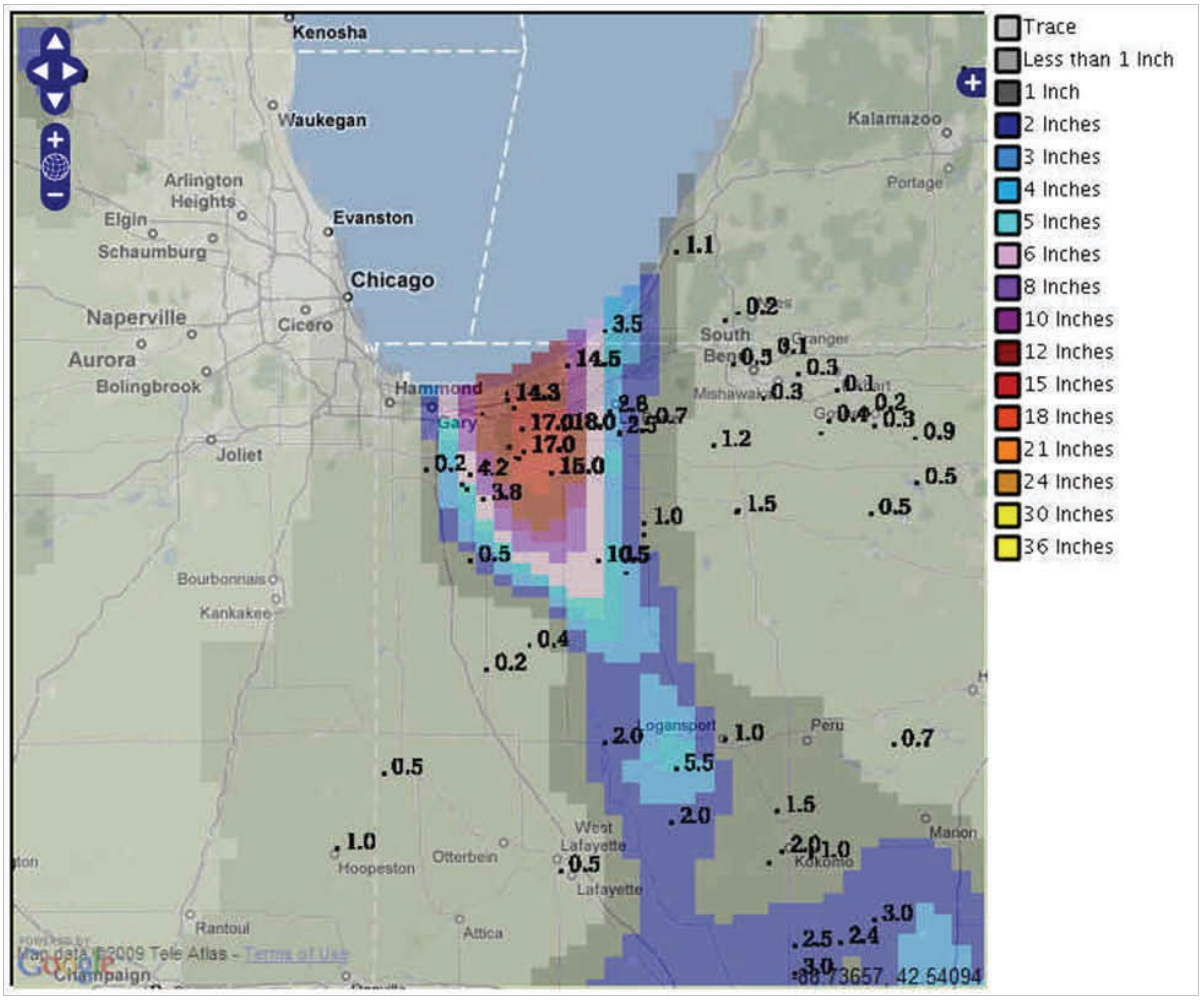
Northern Illinois and northwest Indiana experienced brutally cold weather. Low temperatures were around 15 to 30 below zero and winds chills dropped to 30 to 50 below zero. The coldest temperatures occurred the morning of the 16th, including -32 at Dixon, and -31 at Aurora. Officially at Chicago O'Hare, the low was -18. This was the coldest temperature recorded since 1996. Rockford set an all time record for the date with -25. This was the third coldest temperature ever recorded at Rockford. Wind chills peaked at -53 in Rochelle, -51 at Aurora, -35 at Rockford and -34 at O'Hare.

January 2009 ended up being the 10th coldest January on record for Chicago, with an average temperature of 15.9 degrees. That was more than 6 degrees below normal. Rockford had its 16th coldest January with an average temperature of 13.8.

More on the cold weather here and here.

February 2-3 Lake Effect Snow Northwest Indiana

Heavy lake effect snow fell over Porter County. Snowfall was mostly 10 to 20 inches but Burdick, just east of Chesterton measured 29 inches of snow.



Map of heavy lake effect snow February 2-3, 2009 from NOAA/NWS

More on the lake effect snow here.

March 8 Tornado Outbreak

Three tornadoes were documented over Livingston and Kankakee Counties. The first twister struck rural Livingston County about 5 miles southwest of Pontiac. It caused EF0 damage to a garage and a barn. Another tornado developed in Kankakee County about 5 miles northwest of Momence. This tornado caused EF1 damage to farm buildings and trees. A third tornado damaged farm buildings just west of Grant Park. It was rated EF1. Other storms over northern Illinois and northwest Indiana produced heavy rain and localized flooding, damaging wind gusts, and hail to the size of nickels. The storms occurred along a strong cold front. Behind the front winds gusted to 50 to 60 mph.

More on the March 8 tornadoes here.

March 28-29 Spring Snow Far North Suburbs

Heavy wet snow fell across the far north suburbs with up to 7 inches at Gurnee, Lindenhurst, and Bull Valley.

More on the March 28-29 snow here.

Heavy snow photo by Penny Latona

February through April - Soggy Late Winter/Early Spring

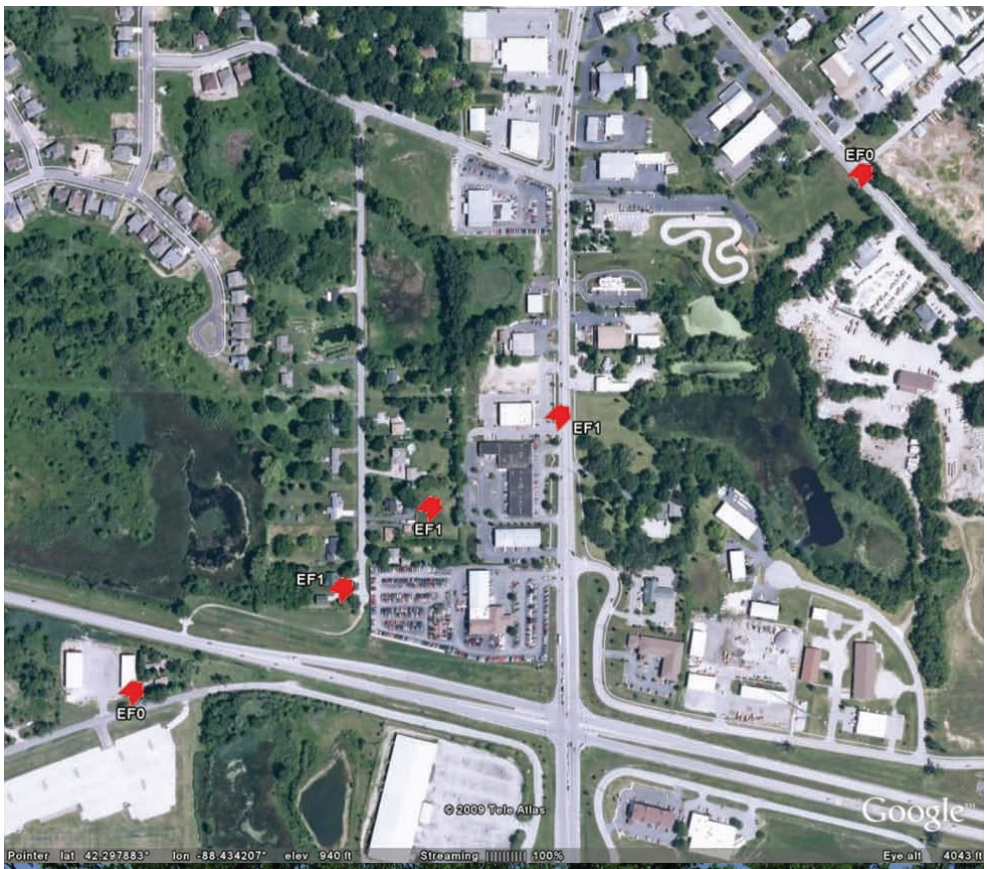
Chicago had 3.39 inches of rain in February, 5.20 inches in March, and 5.19 inches in April. February was the twelfth wettest on record, March was the fifth wettest, and April was the eighteenth wettest. The three month rainfall total of 13.78 inches was the wettest February through April ever, surpassing the 13.31 inches that fell in 1983.

Rockford had 5.80 inches of rain in March, making it the second wettest March of all time. February and April were also wetter than normal, but did not rank in the top twenty all time wet months.

As a result of the wet weather, many streams were in flood for extended periods of time well into spring. The wet weather also delayed many farmers from getting into fields to plant crops.

June 19 Severe Storms, Tornado, and Flash Flooding

Thunderstorms brought heavy downpours and hail to northern Illinois and the northern Chicago metro area during the morning. O'Hare Airport had 3.48 inches of rain. Streets, underpasses, and basements were flooded. Hail from penny size to golf ball size pelted the area. Later in the evening more thunderstorms produced winds gusts of 50 to 70 mph across northern Illinois, damaging trees, and farm buildings. An EF1 tornado struck just southeast of Woodstock, where a garage was destroyed, two commercial buildings were heavily damaged, and many trees were damaged or uprooted.



Map of tornado path near Woodstock June 19, 2009 from NOAA/NWS

Garage destroyed near Woodstock – photo from NOAA/ NWS

Trees uprooted near Woodstock – photo from NOAA/NWS

In addition, heavy rain caused flash flooding in Ogle County where campers were evacuated and some roads were closed or damaged by flood waters. Flash flooding also occurred in Rockford. The flooding may have contributed to a train derailment and explosion on the southeast side of the city.

AP photo of train derailment and explosion southeast of Rockford

More on the June 19 storms here. More on the Woodstock tornado here.

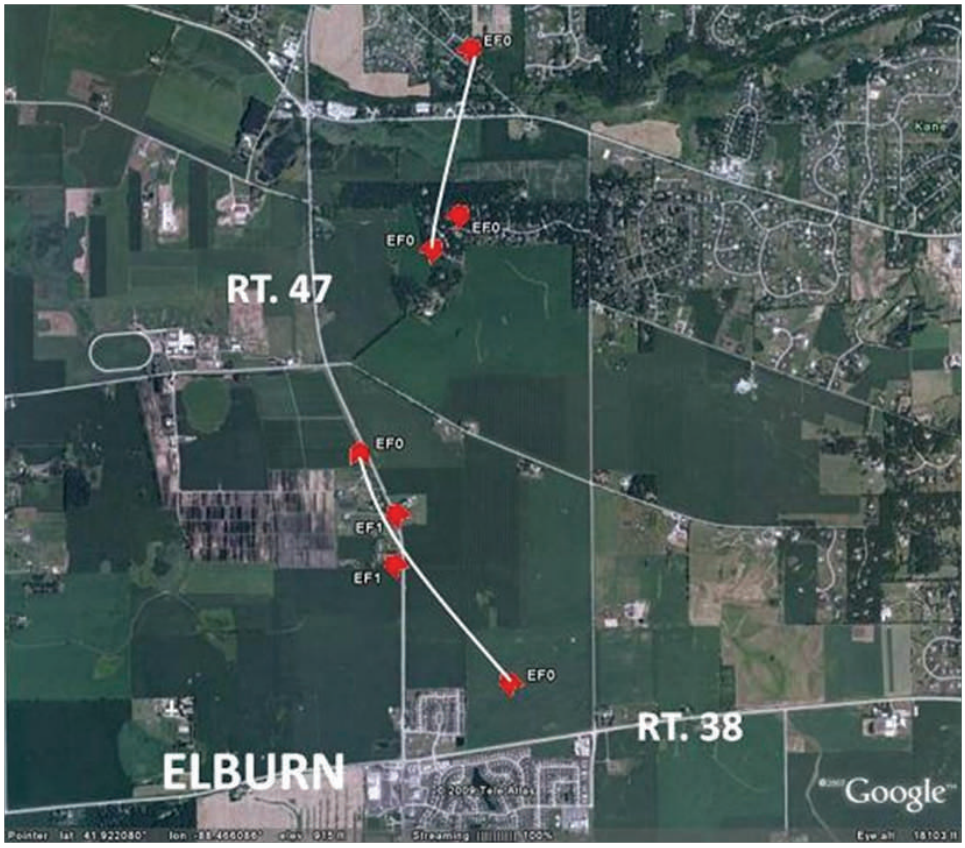
Late June Hot Spell

Overall it was a cool summer over northern Illinois and northwest Indiana. Chicago only had four days in with temperatures in the 90s for the whole summer. Three of them came back to back to back from June 23rd through June 25th. The temperature hit 94 on all three days. There were several more days in the mid to upper 80s in late June. Rockford had four straight days in the lower 90s from the 22nd to the 25th of June. There were five heat related deaths in the Chicago metro area as a result of the intense heat.

August 19 Tornado Outbreak

Severe thunderstorms developed in the afternoon and several tornadoes were reported. An EF1 tornado struck near Pittwood in Iroquois County. The twister flattened corn, damaged garages, sheds and other farm structures, as well as knocking down large trees and limbs. Two more tornadoes occurred near Elburn and Lilly Lake in northern Kane County. One was rated EF1 with most of the damage to trees and crops. The other was EF0 with damage to trees in a subdivision.

The most destructive tornado of the day struck Chesterton, Indiana. The tornado was rated EF2. It damaged the roof of a school, unroofed a warehouse and an apartment building. Altogether, more than 200 buildings and homes were damaged. Numerous trees and limbs were also blown down.



Map of tornadoes near Elburn from NOAA/NWS

Map of damage path of Chesterton tornado by NOAA/NWS

Photo of Chesterton tornado by Ian Covert

Apartment building unroofed in Chesterton – photo by NOAA/NWS

House damaged near Elburn – photo by NOAA/NWS

Corn flattened by tornado in Iroquois County – photo by NOAA/NWS

More info on the Chesterton tornado here.

More on the Kane County tornadoes here.

More on the Iroquois County tornado here.

June through August - Cool Summer

Chicago had its fifth coolest summer since 1942. There were only four days in the 90s but a record 30 days with a temperature that failed to climb above 75. Rockford had its third coolest summer on record. Rockford also only had four days in the 90s but 25 days of 75 or under.

Cool, Cloudy, Wet October

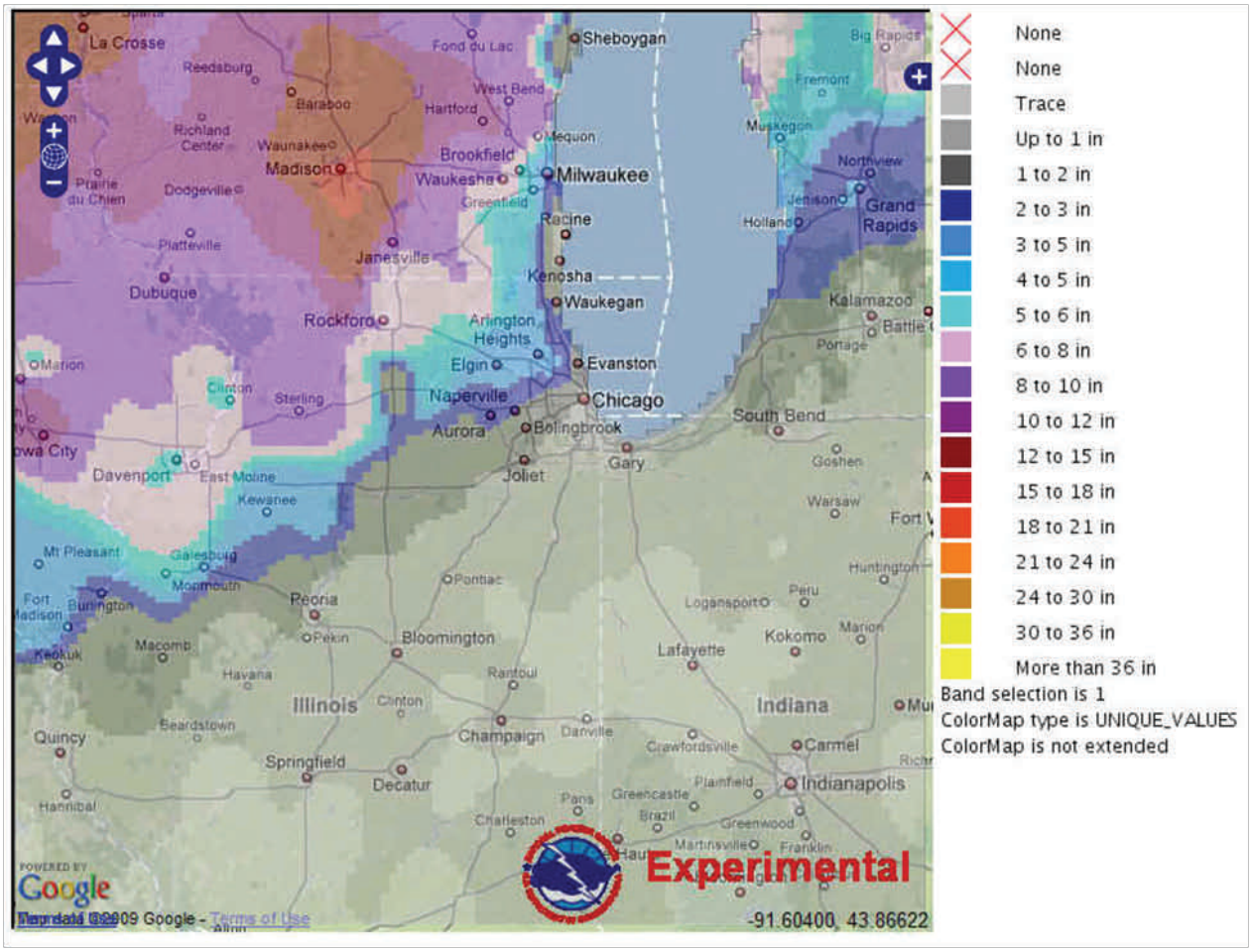
Chicago had the second lowest amount of sunshine ever recorded for the month of October. Only 33% of the possible sunshine was received. It was the eleventh coolest October on record with an average temperature of 48.9, which was 3.2 degrees below normal. It was the ninth wettest with 6.04 inches of rain, which was 3.33 inches above normal. There was measurable rain on 19 days, which tied a record for the most rainy days in the month of October.

Rockford had its seventh coolest October with an average temperature of 47.2, which was 3.8 degrees below normal. It was Rockford's fifth wettest October with 5.94 inches, which was 3.42 inches above normal.

In contrast, November was the 8th warmest on record in Chicago, with an average temperature of 45.4 degrees, which was 6.1 degrees above normal. Rainfall was below normal and sunshine was above normal. Rockford had the 6th warmest November on record with an average of 43.7 degrees, which was 6.5 degrees above normal. Rainfall was also below normal.

December 8-10 Early Winter Storm

An intense low pressure system moved from Missouri to near Chicago to Lower Michigan on December 8 and 9. The atmospheric pressure dropped to 28.91 inches of mercury at O'Hare Airport the morning of the 9th. The storm produced 6 to 9 inches of snow across north central Illinois and the far northwest suburbs of Chicago, including 9.5 inches at Dixon, 8.2 inches at Rockford and 7.8 inches at Bull Valley. Much of the Chicago metro area received a mix of snow, sleet, and rain. In the wake of the low, winds gusted to 40 to 50 mph. By the morning of the 10th, temperatures plummeted to zero to 5 below zero with wind chills of 20 to 25 below zero.



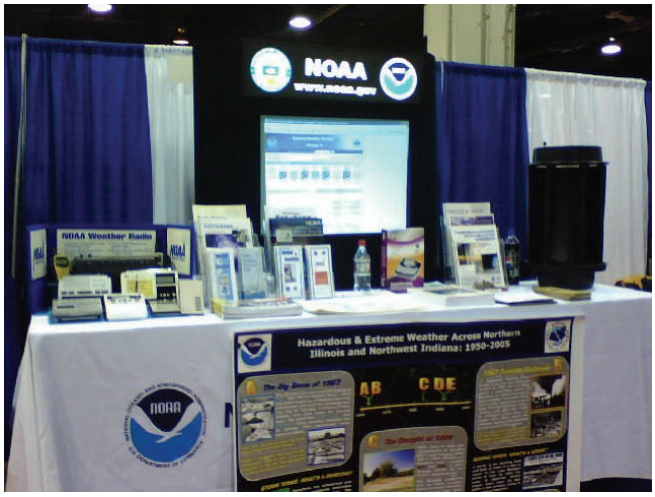
Map of 48 hour snowfall ending the morning of December 9

For more on the winter storm, click here, and here.

NWS Chicago to be at the Chicago Boat Show

by Amy Seeley, Hydro Meteorological Technician/Webmaster

January 13-17, 2010



If you are headed out to the Chicago Boat, RV & Outdoors Show, why not stop by the Chicago National Weather Service booth! We will be handing out lots of pamphlets on weather and safety, talking about NOAA All Hazards Radio, and showing off our webpage. Find out the latest on the newest weather products and services we are offering.

Hope to see you there!

Skywarn Recognition Day 2009 was fun and successful!

by Bill Wilson, Lead Forecaster

Skywarn Recognition Day was developed in 1999 by the National Weather Service and the American Radio Relay League. It celebrates the contributions that volunteer Skywarn spotters and Amateur Radio Operators (Hams) make to the National Weather Service for public safety. Spotters, using radio in the Amateur Radio frequencies report severe weather such as flash floods, tornadoes and damaging wind to local county network control radio operators. Then the reports are relayed by radio to the National Weather Service Office here in Romeoville. The meteorologists use these reports in preparing warnings for Illinois and Indiana.

The Skywarn Recognition Day 2009 at the Chicago, Illinois Weather Service Forecast Office was fun and successful. There were 13 Amateur Radio operators who manned the radios and made contacts across most of the United States, Canada, Latvia and Australia. We made a total of 421 contacts on the 70 centimeter, 2 meter, 20 meter, 40 meter bands as well as Echolink. We made contacts in 44 states and 3 provinces in Canada.

Skywarn Storm Spotting

by Jim Allsopp, Warning Coordination Meteorologist

National Weather Service (NWS) will offer a series of basic severe thunderstorm and tornado spotting classes throughout northern Illinois and northwest Indiana from February through April. The classes are free and open to the public, and they take about 2 hours. NWS is currently working with county and community emergency management agencies, and amateur radio clubs to develop a schedule of classes. A complete schedule of classes will be posted on the NWS Chicago webpage, weather.gov/chicago by mid or late January. It will be found under the “Top News of the Day” headlines above the main map on the homepage.

Here is more information about spotting;

Spotter FAQ

Q. What is a storm spotter?

A.The National Weather Service's (NWS) primary mission is to save lives and protect property through the issuance of warnings for hazardous weather. The WSR-88D Doppler Weather Radar is a great tool for detecting and tracking potentially severe storms and most strong and violent tornadoes. However, NWS meteorologists also depend on real-time reports from trained spotters to know exactly what is occurring on the ground under a storm. The NWS trains people to identify severe storms and tornadoes and report them via organized communications networks (primarily local and county emergency management, law enforcement and amateur radio).

Q. What is the difference between a storm spotter and a storm chaser?

A. A storm spotter is volunteer or paid county or municipal employee who is spotting as a community service. Most spotters work as part of an organized network and are in communication with their community or organization, which is in turn in communication with the NWS. Some spotters are "mobile" spotters in vehicles, but most spot from fixed, strategic locations around the community or county. The purpose of spotting is to alert community officials and the NWS and assist them in warning the public. Schools, hospitals, and other facilities are encouraged to have spotters to alert people in their care of impending severe weather.

Storm chasing involves following a developing thunderstorm to view or photograph severe weather phenomena. Chasing may be done for educational purposes or scientific research but is mostly done for personal fulfillment.

Q. I want to be a storm chaser. What should I do?

A. College of DuPage in Glen Ellen offers storm chasing field trips that are open to students and the public. The Valparaiso University Meteorology Department offers storm chasing as an educational tool to meteorology students. There are private firms, mostly in the Great Plains, that offer storm chase tours/ vacations. Many can be found through an internet search.

Q. How do I become a spotter?

A. Attend a basic tornado and severe weather spotter class. Classes are held throughout the area, they are free and open to the public. The class takes about 1 ½ to 2 hours. Most classes are held weekday evenings, but there are a few daytime and Saturday classes. The training is generally done in late winter and early spring - before severe weather season. The training consists of a slide and video program which teaches potential spotters about severe storm structure, and how to identify cloud features and other environmental clues to identify severe storms and tornadoes. Communications systems and spotter networks are explained so the spotter knows where to report, and how that information is used by the NWS and local officials. A complete schedule of classes can be found on our website from about late January through April.

Q. Is there a minimum age requirement to become a spotter?

A. Because of the complexity of severe thunderstorm structure and development, and the potential danger involved, spotting is recommended for adults. High School and Junior High School or Middle School students are welcome to attend the class with a parent or other adult.

Q. I have already taken a spotter class. Where can I learn more?

A. The National Weather Service encourages spotters to be retrained every 2 years. In addition, spotters can attend the Advanced Severe Weather Spotter Workshop at Wheaton College. The Advanced Spotter class is usually held on a Saturday in early March. It is an all-day class. There is a registration fee that covers the cost of the facility, lunch and speakers.

Q. I have a few people at my office/school/community group that would like to become spotters. Can the NWS come out and give us training?

A. The NWS office in Romeoville serves about 9 million people across a 23 county area. Because of limited staffing and resources for spotter training, we try to conduct one or two classes per county in rural counties outside of Chicago, and 4 to 6 classes per county in the more densely populated counties of Chicago metro area. The most efficient way to provide the training is by working with our primary partners in severe weather operations – county and local emergency management agencies, law enforcement agencies, fire departments, and amateur radio clubs. Please check our schedule to find a class that is convenient to you.

Sunshine Sensor Data Discontinued October 1, 2009 at 33 National Weather Service Offices

by Bill Nelson, Observation Program Leader

The decision to discontinue the collection sunshine data on October 1, 2009, was made based on the following facts:

- The Foster Foskett sunshine sensor is early 1950's technology and difficult to maintain and keep calibrated.
- WMO standard for bright sun is 120 watts per meters squared, yet the Foster Foskett indicates sunshine above 87 watts per meters squared.
- NWS no longer has chart recorders to ensure accurate count of the sun minutes, especially at sunrise and sunset, where the low angle of the sun requires adding minutes to the count. The NWS no longer has dedicated observers to accomplish this manual task of observation.
- Measuring incoming solar radiation is far more useful than measuring sunshine minutes. Here is why:
    - One can determine sunshine minutes from a trace of measured solar radiation.
    - Solar radiation is physically realistic. Sunshine minutes are semi realistic.
    - Solar radiation is an important component in the surface energy balance equation; sunshine is not.
    - Solar radiation can help estimate evapotranspiration, a better approach than pan evaporation measurements; sunshine minutes do not address this very important problem.
- NOAA US Climate Reference Network has solar radiation sensors on all of their 100+ stations http://www.ncdc.noaa.gov/crn/crnmap.html
- NOAA Earth System Research Laboratory Surface Radiation Network http://www.srrb.noaa.gov/surfrad/

Most states have their own Mesonet weather stations that include solar radiation which may be accessed by contacting the American Association of State Climatologists at http://www.stateclimate.org/ . At a minimum, Michigan, Illinois, Indiana, Iowa, Missouri, Kentucky, the Dakotas, Nebraska, Colorado and Kansas all have state networks which measure solar radiation. While not the same as minutes of sunshine, their data can be used for the same purpose.

Effective October 1, 2009, 33 sites turned off the Foster Foskett Sunshine sensors.

ABERDEEN, SD	GAYLORD, MI
BISMARCK, ND	DENVER, CO (FORMER LCD SITE)
CHEYENNE, WY	DODGE CITY, KS
JOHNSTON, IA	WHITE LAKE, MI
DAVENPORT, IA	PLEASANT HILL, MO
GRAND FORKS, ND	SIOUX FALLS, SD
HASTINGS, NE	GRAND JUCTION, CO
GOODLAND, KS	GREEN BAY, WI

WICHITA, KS
INDIANAPOLIS, IN
NORTH PLATTE, NE
ROMEOVILLE, IL
DOUSMAN, WI
VALLEY, NE
PUEBLO, CO
TOPEKA, KS
WILLISTON, ND
LINCOLN, IL
JACKSON, KY
LOUISVILLE, KY
ST. CHARLES, MO
CHANHASSEN, MN
PADUCAH, KY
SPRINGFIELD, MO
RAPID CITY, SD

Coldest Day in Chicago History 25 Years Ago

by Jim Allsopp, Warning Coordination Meteorologist

January 20, 2010 will mark the 25th anniversary of Chicago's coldest day. On January 19, 1985 an arctic blast hit northern Illinois. Temperatures fell all day reaching a low of -23F by midnight. The temperature continued falling after midnight on January 20, eventually setting an all-time low temperature record for Chicago of -27F at 618 in the morning. The temperature began a slow recovery later in the day, reaching a high of -4F before midnight. The frigid weather was accompanied by 15 to 30 mph west to northwest winds, creating wind chill equivalent temperatures of -60F to -80F. The wind chill dropped to -77F at O'Hare Airport at 550 AM on January 20 when the temperature was -26 with a 21 mph wind.

Although the National Weather Service does not keep records of wind chill values, that is one of the coldest wind chills ever experienced in Chicago. The wind chill formula was changed in 2001. Using today's table, the wind chill would be around -57F. Frostbite can occur on exposed flesh in five minutes under those extreme conditions. The coldest known wind chill equivalent temperature for Chicago was -82F on December 24, 1983 when the temperature was -23F and the wind was 29 mph.

The January 20, 1985 arctic blast also set a record for the all-time lowest dew point temperature for Chicago. The dew point dropped to -39F at 450 AM and again at 618 AM.

The low temperature at Midway Airport was -25F, while Rockford dropped to -26F. This was the second coldest temperature recorded at Rockford. The coldest was -27F on January 10, 1982.