



Central Illinois Lincoln Logs

National Weather Service, Lincoln, IL

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Open House a Success!

The staff of the National Weather Service office in Lincoln would like to thank those of you who attended our open house on September 29! Approximately 700 people took advantage of the beautiful weather conditions to tour our facilities, and meet the staff.



Senior meteorologist Patrick Bak leads a tour of the operations area.



A large crowd gathers to watch a weather balloon launch.

This was the first open house we have conducted since 1998. As you can imagine, this was a large undertaking. Led by Chris Miller (Warning Coordination Meteorologist) and Heather Stanley (meteorologist), the entire staff of 23 (along with several family members and student volunteers) pitched in before and during the open house to help create the displays and brochures, conduct tours, welcome the visitors, direct the parking areas, and answer questions. Several of our volunteer weather observers joined us to give their perspectives as part of our operations, and we were joined by several of our partners in emergency management and the private sector. We were able to learn from our experiences during the 1998 open house to better organize the tours and activities.

To see more of the pictures from that day, we have a special section of our homepage set up at <http://www.weather.gov/lincoln/?n=openhouse> .

Cooperative Observer Awards

During our Open House, we took time to acknowledge several of our cooperative weather observers:



George and Betty Becker of Petersburg were presented with a 35-year Length of Service Award by Billy Ousley



Bill and Dorothy Bullard of Morrisonville received the Dick Hagemeyer Award for 45 years of service, presented by Billy Ousley

New Service Hydrologist Joins the Lincoln NWS



The Central Illinois National Weather Service welcomes its first Service Hydrologist, Darrin Hansing, to the office. Darrin comes to us from the Milwaukee, WI NWS office, where he had worked for the past 6 years. For 2 years prior to that, he was a civilian meteorologist with the Air Force Weather Agency at Offutt Air Force Base near Omaha, NE. Oddly enough, Darrin started here at the office in late August, just as flooding along the Illinois River began. What a way to welcome him to his new job!

The service hydrologist serves as the hydrology program manager for the office. In coordination with the warning coordination meteorologist (WCM), the service hydrologist reviews requirements of partners and other users, assesses hydrologic forecast and warning services, and makes improvements to hydrologic operations and services to meet requirements and recommendations. In coordination with the science and operations officer (SOO), the service hydrologist also provides training to the staff on operational hydrologic responsibilities such as issuance of river forecasts and flood warnings.



Until this time, the Hydrology Program at the office was well managed and maintained by two Hydrology Focal Points, Dan Smith (Lead Forecaster) and Dan Kelly (intern). They were supported by Bill Morris, Service Hydrologist at the Chicago NWS office. Over the coming months they will be training Darrin and transitioning program responsibilities over to him.

What Happened to the Tornadoes?

By: Ed Shimon, Senior Meteorologist



The severe weather season of 2007 is below normal in terms of tornado development, and is well behind the severe season of 2006. Last year we totaled 72 tornadoes in central and southeast Illinois, but this year (through the end of September) we have had only 6 tornadoes so far, all of them rated EF0. The question many people are asking is, what happened?

El Niño and La Niña seem to be blamed for much of the weather that occurs in the United States. However, El Niño and La Niña primarily affect the weather during the winter season in North America, and not as much during the spring and summer months. So that solution is not quite viable. Global warming is also a common culprit to get the blame for weather changes. It is also very difficult to pinpoint any effects on year to year weather fluctuations, because global warming is on a time scale of hundreds of years. So



Glen Oest, retired Havana observer, received a Special Service Award for over 25 years of service, presented by Billy Ousley



Joe Armstrong of Springfield received a Special Service Award from John Parr



In addition, a Special Service Award was presented in June to **Chuck and Debbie Cisney of Hidalgo.** Presenting the award were Chris Geelhart, Alyssa Halm, Megan Mulford, and Billy Ousley

we need to try to focus on what happened more locally.

Mother Nature works in mysterious ways, so it is difficult to pinpoint the exact cause. However, after comparing some meteorological data from the last 2 severe weather seasons, we have a couple of ideas about contributing factors.

One of the primary ingredients to thunderstorm development is the availability of moisture. During the late winter and spring of 2006, we received 125% of normal precipitation. Not only did that help with providing abundant ground moisture, but it also was a signal that surface dewpoints were routinely higher than normal. This year, we had an abnormally dry spring, with 75% of normal precipitation in much of the area. That lack of moisture helped to suppress thunderstorm development this year. Without that key ingredient, any thunderstorms that developed did not have the chance to become severe storms.

Additionally, when the dewpoints are high, the air mass is much more likely to be unstable; in other words, the air has a tendency to accelerate upward when initially forced up. The strength of an updraft is directly related to the ability of a thunderstorm to stretch a rotating column of air into a potential tornado. Last year we had plenty of instability, especially in the March and April time frame. This year, when storms did develop in the Plains, they tended to lose their strength as they entered our relatively dry air mass, with lower dewpoints.

The jet stream flow was most likely a contributor as well. Last year the jet stream was one with significant periods of southwest flow into central Illinois. That allowed numerous storm systems to track from the southern plains into Illinois, and were able to tap into moisture from the Gulf of Mexico. This year, we have seen more significant periods of west or northwest flow, which tends to send drier air into Illinois and also keep our area cut off from Gulf moisture more often than not.

Most likely a combination of factors came together to create such a drastic change in tornado development from last year to this year. The factors discussed here are just a few that seem to highlight the major points that probably had the biggest effect. However, this year is not over, and the fall season can become active in terms of severe weather, so stay tuned...

Illinois Rainfall Extremes in August: Rainfall Records in North and Drought in South

By: Illinois State Water Survey

"Rainfall amounts in northeastern Illinois established this as the wettest August and wettest summer since regional records began in 1895. Rainfall for northeastern Illinois (including those counties from Boone to LaSalle and eastward) averaged 11.47 inches, 7.33 inches above normal, and beat the 1987 record of 11.02 inches. June–August totals thus far in this area averaged 20.05 inches, 8.02 inches above normal, and beat the 1972 record of 19.26 inches. Northwestern Illinois received 8.45 inches in August, 4.05 inches above normal and the 5th wettest on record. Its June–August total was 19.18 inches, 6.69 inches above normal and the 4th wettest on record," says State Climatologist Jim

Angel of the Illinois State Water Survey.

"Many individual stations also set all-time August records, noteworthy because climate records for these locations go back more than 50 years. The list includes Elgin (15.12 inches), Peotone (14.00 inches), Rockford (13.82 inches), Peru (13.48 inches), Freeport (12.09 inches), Morris (11.94 inches), Antioch (11.41 inches), and Joliet (10.53 inches). Several other stations with much shorter records also reported impressive rainfall totals, including Genoa (15.71 inches), McHenry (12.65 inches), Chicago Botanic Garden (12.61 inches), Streamwood (11.62 inches), and Yorkville (11.17 inches)," says Angel.

Summer 2007 Climate Statistics:

Peoria:

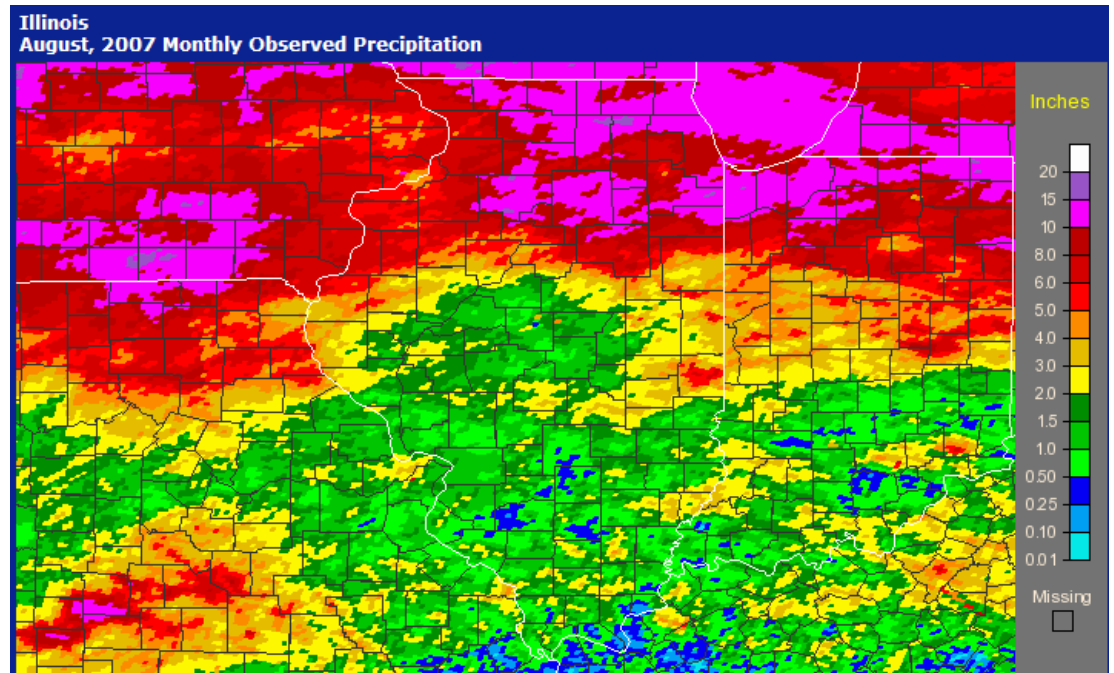
- Average Temperature 75°F (1.9°F above normal)
- Rainfall 10.59" (0.43" below normal)

Springfield:

- Average Temperature 75°F (0.6°F above normal)
- Rainfall 9.59" (1.12" below normal)

Lincoln:

- Average Temperature 73.3°F (0.1°F above normal)
- Rainfall 8.88" (3.44" below normal)



Parts of southern and west-central Illinois, however, struggled with a lack of rainfall in August and were classified as either abnormally dry or in moderate drought according to the *U.S. Drought Monitor*. Far southern Illinois south of I-64 received only 1.40 inches, 1.91 inches below normal. "The contrast between northern and southern Illinois was one of the strongest I have ever seen," says Angel.

August was unusually warm as well with a statewide temperature of 78.3 degrees, 4.6 degrees above normal and the 6th warmest on record. "The combination of dry conditions and hot weather really stressed crops in parts of southern and central Illinois," says Angel.

Spotters - An Important Part of the NWS Team

By: Patrick Bak, Senior Meteorologist

Spotter reports are an important component of the National Weather Service's forecast and warning operations. Area volunteers, including county spotters, SKYWARN spotters, SWOP observers, and COOP observers provide the NWS with specific weather reports at their location. These observations may include reports of severe wind, hail, flooding, and tornadoes, as well as rainfall, snowfall and snow depth reports.

These reports serve two important purposes:

The first purpose of the reports is real time forecast and warning verification. When reports come in during an event, they help us fine tune our thinking on the evolution of a weather event. If our forecasts or warnings are doing well, an affirmative spotter report helps us maintain our current course. If our forecasts or warnings are not doing as well, spotter reports help us adjust our forecast and warning decisions for current and future events. These adjustments allow us to provide you and other residents of central and southeast Illinois with better forecast and warning services. Near real time storm reports are available on the Lincoln NWS' web site at the following location:

<http://www.crh.noaa.gov/product.php?site=ilx&product=LSR&issuedby=ILX>

The second purpose of the reports, in the case of severe weather events, is to help develop a permanent storm record. After spotter reports are collected and quality controlled, they are entered into the Storm Data publication. The Storm Data publication is the permanent severe weather record of the United States. There is usually at least a two month delay between an event and its addition to the Storm Data database. Preliminary Storm Data entries are available on the Lincoln NWS' web site at the following location:

<http://www.crh.noaa.gov/ilx/svrclimo.php>

Lincoln Balloon Festival



Hot air balloons pass behind the Doppler radar and upper air tracking dome at the National Weather Service office on August 25. The staff and families of the NWS gathered on the office grounds for our annual picnic, and watched the balloons take off in our backyard. In the photo below, the banner notes the 200th anniversary of the founding of NOAA's predecessor agency, the U.S. Coast and Geodetic Survey.

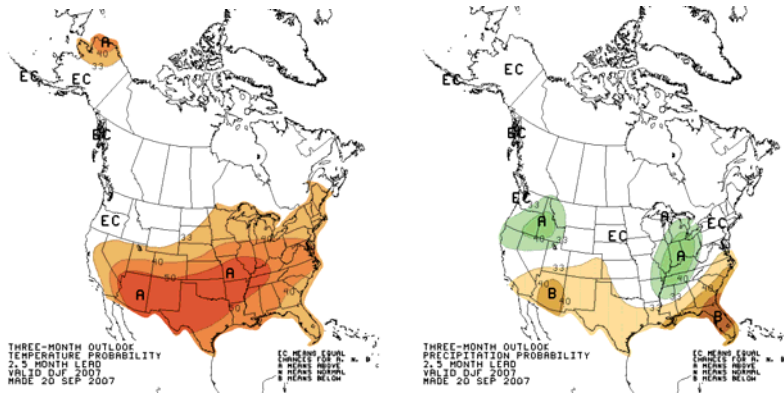


Winter Weather Outlook

First Freeze Information



The map above, by the Illinois State Climatologist, shows the average date of the first fall freeze (low temperature below 32°F). The contour across the center of the state shows an average date of October 14. Areas south of this line have an average date between the 14th and 21st, with areas to the north between the 7th and 14th.



The latest outlooks from the Climate Prediction Center indicate that much of the nation is expected to average warmer than normal for the upcoming winter season. In the map on the top left, the darker orange shades indicate the highest likelihood of warmer than normal conditions. The Midwest and the Pacific Northwest are expected to be wetter than normal (green shades), while drier than normal conditions prevail across the southern states (brown shades).

According to the NWS's Local 3-Month Temperature Outlook (http://www.weather.gov/climate/calendar_outlook.php?wfo=ilx), the following probabilities have been determined for cities in central and southeast Illinois:

Location	Above Normal Chances	Near Normal Chances	Below Normal Chances
Decatur	47%	32%	26%
Effingham	48%	32%	20%
Galesburg	48%	31%	21%
Havana	47%	32%	21%
Normal	48%	31%	21%
Olney	48%	31%	21%
Paris	48%	31%	21%
Peoria	48%	31%	21%
Springfield	55%	29%	16%
Urbana	48%	32%	20%

The possibility of a La Niña later this year is the cause of the expected warmer than normal conditions.

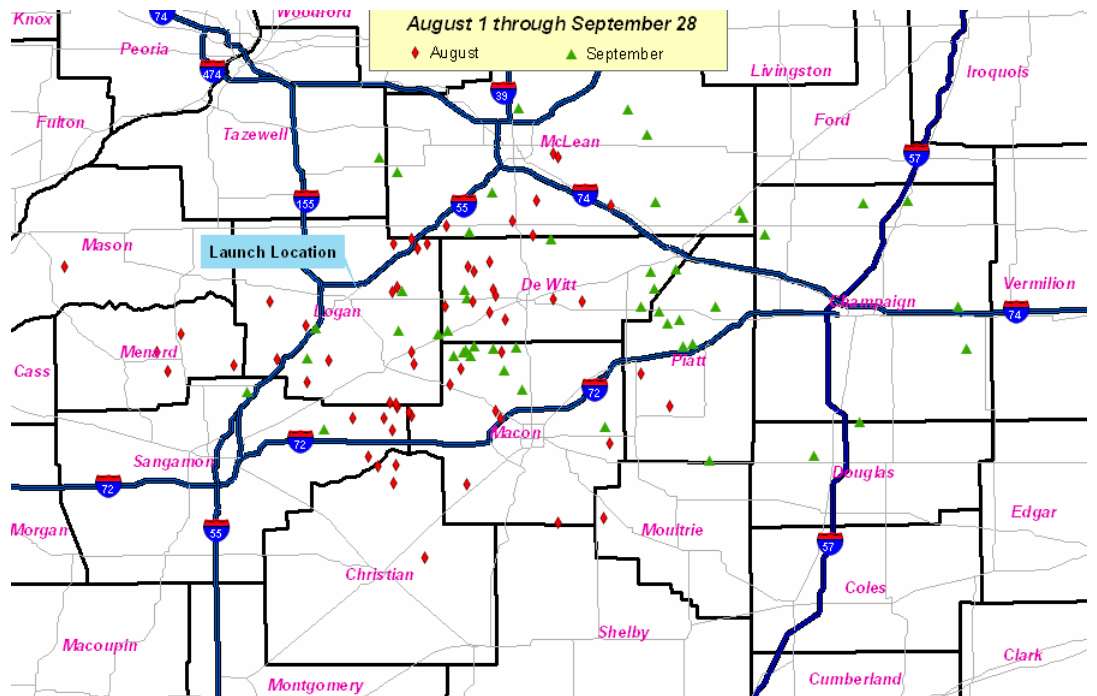
Radiosonde Replacement System Installation



As reported in the last edition of the *Central Illinois Lincoln Logs*, the National Weather Service office in Lincoln was transitioned to the new Radiosonde Replacement System this summer. The old balloon tracking system, dating back to the 1950's, was dismantled during the second half of July, and the new system was installed. This was followed by several days of training for the Lincoln NWS staff, on operation of the new system.

The new system uses Global Positioning System tracking. This has allowed us to find out more specifically where the balloons themselves ultimately track. The map below shows the locations of where the weather balloons burst during August and September. This is generally not where the balloon actually lands, as there is still some horizontal drift as the balloons descend. Still, it gives a general idea of where the balloon itself ends up, as the old system only indicated the azimuth (direction) from the base station.

Should you find one of these balloons, there is a postage-paid mailing bag inside the radiosonde (weather instrument) package. You can disconnect the battery and the balloon from the weather instrument, and put the radiosonde in the bag and mail it to our reconditioning center. This allows us to reuse the sonde (or parts of it), saving taxpayer dollars.



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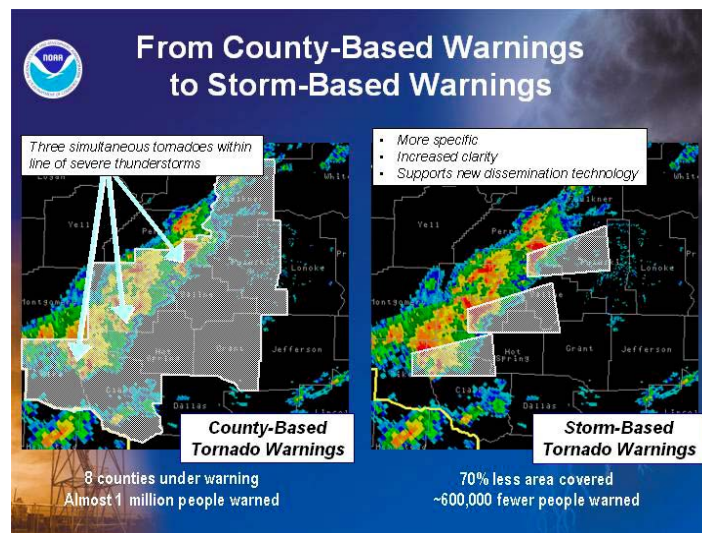


NWS Now Provides More Specific Warning Information for Severe Weather

The National Weather Service began issuing more geographically specific warnings for tornadoes, severe thunderstorms, floods, and marine hazards on October 1. The new “storm-based warnings” will allow forecasters to pinpoint the specific area where the threats are highest, reducing the area warned by as much as 70 percent when compared to the old county-by-county system.

“These are potentially deadly, short duration events that can develop very rapidly,” said Vickie Nadolski, acting deputy director of NOAA’s National Weather Service. “Our technology has evolved to support better warnings, and we are adapting to meet public expectation to receive weather information on demand.”

“By focusing the threat, we can reduce the warned area by as much as 70 percent, which equates to more than \$100 million in savings to the public,” said Vice Admiral Conrad C. Lautenbacher Jr., under secretary of commerce for oceans and atmosphere and NOAA administrator. “The real bottom line is that this will potentially save more lives. Eliminating areas needlessly warned builds confidence that you do indeed need to take action when a warning is issued.”



Storm-based warnings are displayed graphically and are extremely adaptable to cell phones, PDAs, and the Web. The Emergency Alert System is geared toward counties and NOAA Weather Radio All Hazards will still alarm if there is a warning anywhere in the county. However, text and audio messages will provide more specific information about where in the county the storm is, and the direction

the storm is moving. Storm-based warnings will reference landmarks such as highways, shopping centers, and parks, and will use directional delimiters to indicate county location.

The Lincoln National Weather Service office was one of the test sites for the storm-based warning concept. Tornado and severe thunderstorm warnings for the last few years have been issued for portions of counties and specific sectors in the storm’s path. As a result, users of our office’s products should be accustomed to the storm-based warning concept.