



Central Illinois Lincoln Logs

Volume 18, Issue 1

Spring 2015

Lincoln NWS 20th Anniversary Retrospective

By: Chris Geelhart, Meteorologist

Editor's Note: This is Part 1 of a 3-part series on the history of the National Weather Service in Lincoln, which marks its 20th year of operation in 2015.

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Preparing for the Move

Plans to modernize the National Weather Service began in the 1980's. Public Law 102-567, known as the Weather Service Modernization Act, was passed by Congress in the fall of 1992 and signed by President George H.W. Bush. It implemented the NWS Modernization and Associated Restructuring, which would reconfigure the office network from 52 Weather Service Forecast Offices (WSFO's, which provided forecast responsibility for roughly a state-size area) and 204 Weather Service Offices (WSO's, which were primarily responsible for local observations and severe weather warnings), to a network of 116 (now 122) Weather Forecast Offices which generally provide similar services to each other (forecasts and warnings). In central Illinois, the NWS operated WSO's at Peoria and Springfield, and the WSFO at Chicago provided forecasts for the state of Illinois.

The analysis for the Modernization concluded that Lincoln was the best location for a new Weather Forecast Office (WFO) that would serve central Illinois. Locating the new Doppler radar in Lincoln would provide the best low-level coverage of several major population centers (Peoria, Bloomington, Decatur, and Springfield), each of which are roughly the same distance from Lincoln. Operating the radar and office in separate locations, while more feasible with today's technology, was a significant expense, so most offices built during the modernization were co-located



A mapping of Weather Service Forecast Offices and associated coverage areas, before the start of the NWS modernization.

(cont. on page 2)

Lincoln NWS 20th Anniversary Retrospective (cont.)



Construction of the new Weather Forecast Office in Lincoln during 1994.

with their associated radar. Thus, operations of the Peoria and Springfield offices would be merged into the Lincoln WFO, at which time the former offices would close. It was determined to construct the office on property along Highway 10, adjacent to the south edge of the Logan County Airport.

Construction of the WFO began in December 1993, and the office was completed in October 1994. At this time, the Meteorologist in Charge (Ernie Goetsch, who is still in the same position) reported for duty. Additional staffing was soon added, which included electronics technicians and an administrative support assistant. Meteorological technicians reported in early 1995 in preparation for upper-air (weather balloon) responsibility, which began in

mid-February. Five meteorologists reported in mid-May and began training on use and interpretation of the new Doppler radar system. Additional staffing also included a Science Operations Officer and a Warning Coordination Meteorologist, making a total of 8 meteorologists on station.

Construction of the Doppler radar began in April, and testing soon began. Due to the testing, the radar was not in operation when a tornado passed about 2 miles south of the office on May 9. There were fears the radar would be destroyed before we even had a chance to use it, but luckily the tornado missed the office. Actual commissioning of the radar would occur January 3 of the following year.

Aside from the balloon launches, the spring and summer of 1995 saw mainly administrative operations, as the forecasters trained on the Doppler radar. Training included 4 weeks at a training facility in Norman, OK. The staff would also help cover shifts at the Peoria and Springfield offices, as some of its staff was lost by personnel transferring to Lincoln and other new WFO's.

Meanwhile, preparations were made at the Peoria and Springfield offices for the new office's responsibilities. On March 1, warning responsibility for 6 counties in west central Illinois was transferred from Peoria to the new WFO in Davenport, IA, leaving them with 10 counties in their coverage area. The Springfield office transferred two of their 20 counties to the St. Louis office soon afterward. As the NWS would no longer be taking hourly weather observations at those two offices, testing and evaluation of the new Automated Surface Observing System was ongoing to prepare for the planned departure date of October 1. Several pieces of equipment and furniture would be relocated to Lincoln, requiring movers to be hired. The actual move was scheduled for September 27th.

(continued in next issue)

Tornado passing southeast of the Doppler radar, May 9, 1995. Photo courtesy Jeff Hedges.



Construction of the Doppler radar during the spring of 1995.



Visualizing Tornado Safety Rules



Tornado Safety in Pictures

Why we tell you to:

Get to the lowest floor



Find a small interior room or stairwell



Never ride out a tornado in a mobile home



Never ride out a tornado in a car or truck



Our sister office in Kansas City recently put together this graphic for social media. While you may be familiar with the rules for tornado safety, it can be difficult to visualize the reasoning.

It is important to know ahead of time what to do when a tornado threatens. Not only should you have a plan of action when you are at home, don't forget about when you are at work, school, or out on the road.

Severe Weather Trivia: A Pop Quiz

Severe weather season has arrived. To mark the occasion, we've put together a short quiz on severe weather related trivia. How many of these do you know?

- 1) Approximately how many tornado fatalities occur in mobile homes?
 - A) 15%
 - B) 30%
 - C) 50%
- 2) True or False: Hail can cause fatalities.
- 3) When a tornado threatens, where should you go if you are at home and you have a basement available?
 - A) In the corner of the basement opposite of the approaching tornado.
 - B) Underneath the stairwell.
 - C) Outside; how else am I going to get video of the tornado?
- 4) Which month has seen the highest number of tornadoes in Illinois (from 1950 to 2014)?
 - A) March
 - B) April
 - C) May
- 5) If you had hail of 2-1/2 inches denting the roof of your car, about what size object would be a good comparison?
 - A) Tennis ball
 - B) Baseball
 - C) Golf ball
- 6) True or False: If you are in a high-rise building when a tornado is approaching, any interior windowless hallway will provide good shelter, regardless of floor.
- 7) How far down to the ground does a funnel cloud have to extend for it to be considered a "tornado"?
 - A) 50%
 - B) 75%
 - C) It must be in contact with the ground

Did You Know?

The minimum wind speed for a thunderstorm to be considered severe is 58 mph. This dates back to the 1950s and 1960s, when Severe Thunderstorm Watches were first issued. There were two types of these watches; one issued for the public used a wind speed threshold of 75 mph, while one for aviation purposes used 50 mph. After discussions with the Air Force, the aviation watch was set to 50 knots (58 mph). When the two watch types were merged in 1970, the 58 mph speed was retained.

Source: National Severe Storms Laboratory

Answers: 1=C; 2=True; 3=B; 4=B; 5=A; 6=False; 7=C

Lincoln NWS Receives Dept. of Commerce Bronze Medal

The National Weather Service in Lincoln was a recent recipient of the Department of Commerce Bronze Medal. This award, shared with the NWS offices in St. Louis, Chicago, Indianapolis, Paducah, and Northern Indiana, was given in recognition of the services provided during the historic November 17, 2013 tornado outbreak. Senior meteorologist Patrick Bak (center) represented our office at the award ceremony, held in February at NOAA Headquarters in Silver Spring, Maryland.



(left to right):

Dr. Kathryn Sullivan, NOAA Director; Christopher Strager, NWS Central Region Director; Jim Sieveking, NWS St. Louis; Matt Friedlein, NWS Chicago; Patrick Bak, NWS Lincoln; Mike York, NWS Paducah; Mike Ryan, NWS Indianapolis; Dr. Louis Uccellini, NWS Director.

Winter Climate Statistics

(December 1 through February 28)

Peoria:

- Average temperature: 26°F (1.6°F below normal)
- Total precipitation: 4.95" (1.04" below normal)
- Total snowfall: 23" (2.8" above normal)
- Coldest temperature: -8°F on January 8

Lincoln:

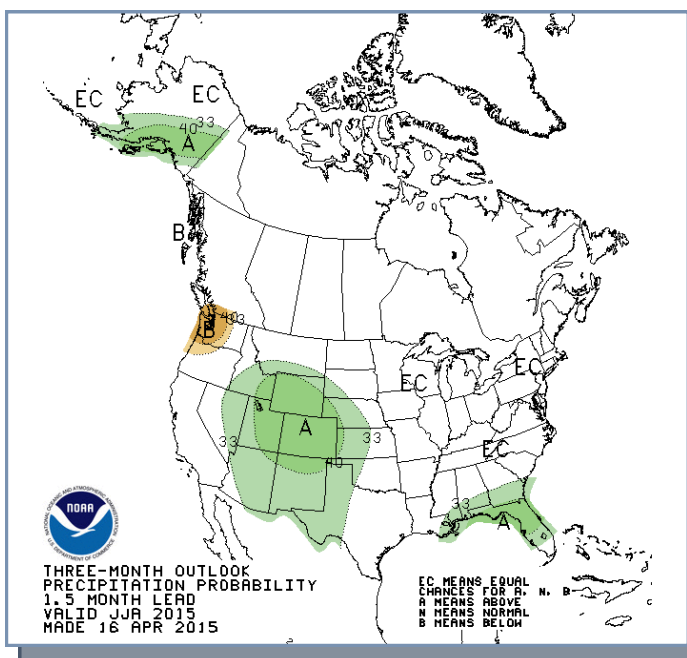
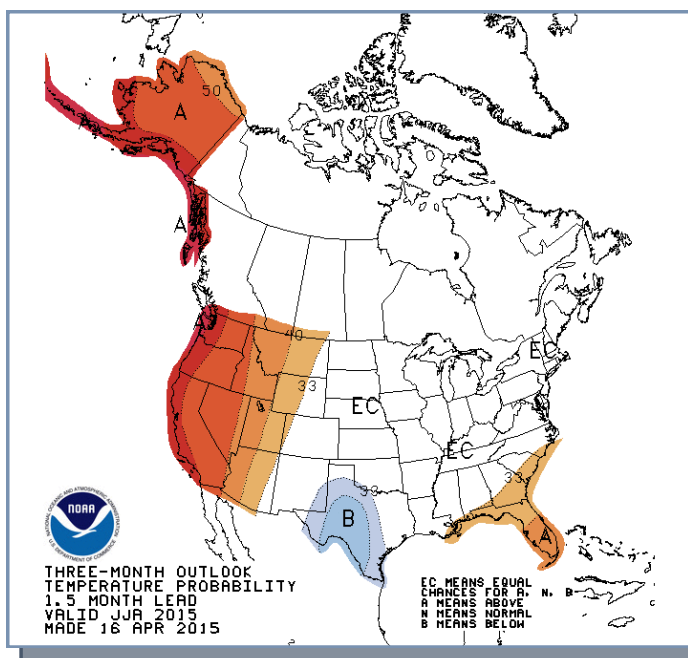
- Average temperature: 25.2°F (3.3°F below normal)
- Total precipitation: 4.21" (2.18" below normal)
- Total snowfall: 17.2" (0.7" below normal)
- Coldest temperature: -8°F on January 8

Springfield:

- Average temperature: 27.5°F (1.9°F below normal)
- Total precipitation: 5.23" (0.92" below normal)
- Total snowfall: 26.5" (9" above normal)
- Coldest temperature: -14°F on February 27

No Major Trends Expected for Summer

The latest summer outlooks, issued April 16th by the NWS's [Climate Prediction Center](#), are below. The temperature outlook is on the left, and the precipitation outlook is on the right. No significant trends are shown over the Midwest, with equal chances of above normal, near normal, or below normal tempera-



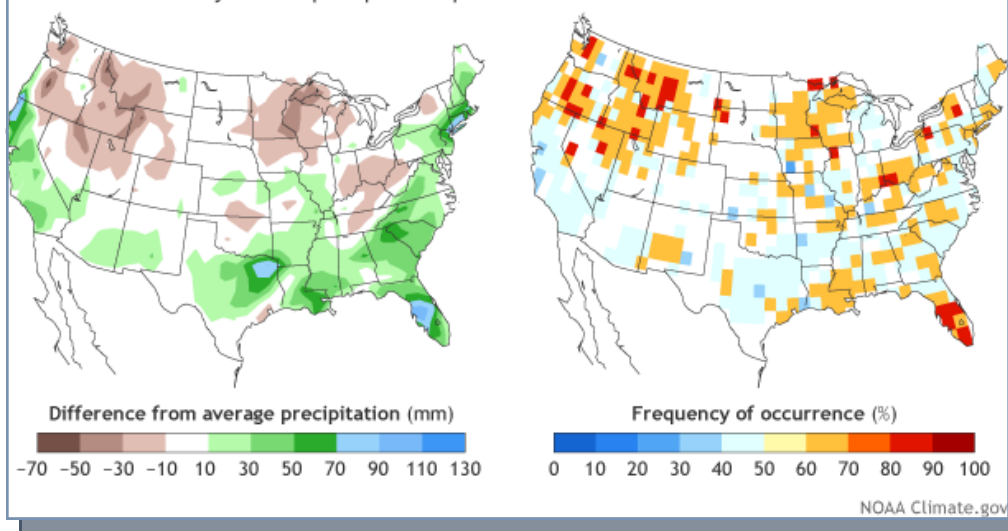
tures and rainfall. The West Coast and the far southeast U.S. are most likely to be warmer than normal, while much of the Rockies and the far southeast U.S. are most likely to be wetter than normal.

The long-advertised development of El Niño, which was originally expected several months prior, finally occurred by early March. A weak El Niño is expected to persist into the summer. However, this does not necessarily mean there will be a significant impact in our area. In the images below, courtesy of the

[Climate.gov](#) web site, the 10

most recent occurrences of El Niño (dating back to 1953) were analyzed. In central Illinois, a trend toward wetter conditions was detected (green shades on the left map), but the chance of this occurring was only around 40% (light blue shades on the right map).

Historical March–May El Niño precipitation patterns



Weather Phobias

By: *Chris Geelhart, Meteorologist*

New research indicates that 1 in 10 Americans suffer from severe weather phobia.

A 1996 article in the *Journal of Clinical Psychology* defined “severe weather phobia” as “persons with an intense, debilitating, and unreasonable fear of severe weather.” Physiological responses to such phobia include sleeplessness, panic, nausea, dizziness, heart pounding, rise in blood pressure, and a sense of helplessness. Behavioral responses may include confinement to a person’s home, loss of appetite, excessive monitoring of weather reports via TV, radio or the Internet, or even moving to a different region to avoid the weather in question.

Research into these phobias was published in 2006. Recently, researchers from Ball State University and the University of Kansas have taken this a step further, using a larger and more demographically and geographically diverse sample to determine the extent of weather phobias. The findings were published in the August 2014 edition of the *Bulletin of the American Meteorological Society*.¹

A survey was conducted of 300 people as part of this research. They were questioned on several items:

- ◆ Overall fear of severe weather
- ◆ Frequency of physical and psychological responses to severe weather
- ◆ Personal experience with various weather phenomena
- ◆ Whether treatment was sought for their phobias
- ◆ Whether they knew someone who had such phobias
- ◆ Knowledge of meteorology and severe weather definitions

As one might expect, the responses corresponded to the weather phenomenon more common to a given region (for example, feature of hurricanes along the East Coast or Gulf Coast). Also, people with more weather knowledge were more likely to experience anxiety symptoms and behaviors.

Some Weather Phobias:

- **Astraphobia:** Fear of thunderstorms
- **Nephophobia:** Fear of clouds
- **Lilapsophobia:** Fear of hurricanes
- **Chionophobia:** Fear of snow
- **Cryophobia:** Fear of cold
- **Ancraophobia:** Fear of wind
- **Ombrophobia:** Fear of rain
- **Homichlophobia:** Fear of fog
- **Iridophobia:** Fear of rainbows

(cont. on page 8)

¹ Jill S.M. Coleman, Kaylee D. Newby, Karen D. Multon, and Cynthia D. Taylor, 2014: Weathering the Storm: Revisiting Severe-Weather Phobia. *Bulletin of the American Meteorological Society*, 95, 1179-1183.



Central Illinois Lincoln Logs

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The *Central Illinois Lincoln Logs* is a quarterly publication of the National Weather Service office in Lincoln, Illinois. It is available on our Internet page at

www.weather.gov/lincoln

Facebook Page:

www.facebook.com/NWSLincoln

Twitter Handle:

@NWSLincolnIL

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Weather Phobias (cont.)

Results of the researchers' survey are shown below:

TABLE 2. Frequency distribution of responses to phobia questions and overall fear question, in a total of 298 subjects.

Variable	Never	Occasionally	Sometimes	Frequently	Always
Dizziness	240	35	16	5	2
Shortness of breath	213	51	27	5	1
Nausea	227	44	22	5	0
Heart pounding	110	100	63	22	2
Panic	152	89	36	17	1
Sweating	205	56	23	12	2
Feel helpless	117	92	53	28	6
Obsessiveness	187	63	26	13	8
Control	153	45	47	37	14
Monitor TV	39	36	67	105	50
Anxious	84	90	70	41	12
Unable to sleep	130	89	53	16	7
Change schedule	116	88	55	28	9
Unable to eat	227	41	14	10	3
	None	A little bit	Moderate	Quite a bit	Extreme
Overall fear of severe weather	44	137	85	24	7

St. Patrick's Day Northern Lights



One of our weather observers, Shae Cohan, took this photo near Pana of the Northern Lights on St. Patrick's Day. A geomagnetic storm the previous day caused the lights to form.