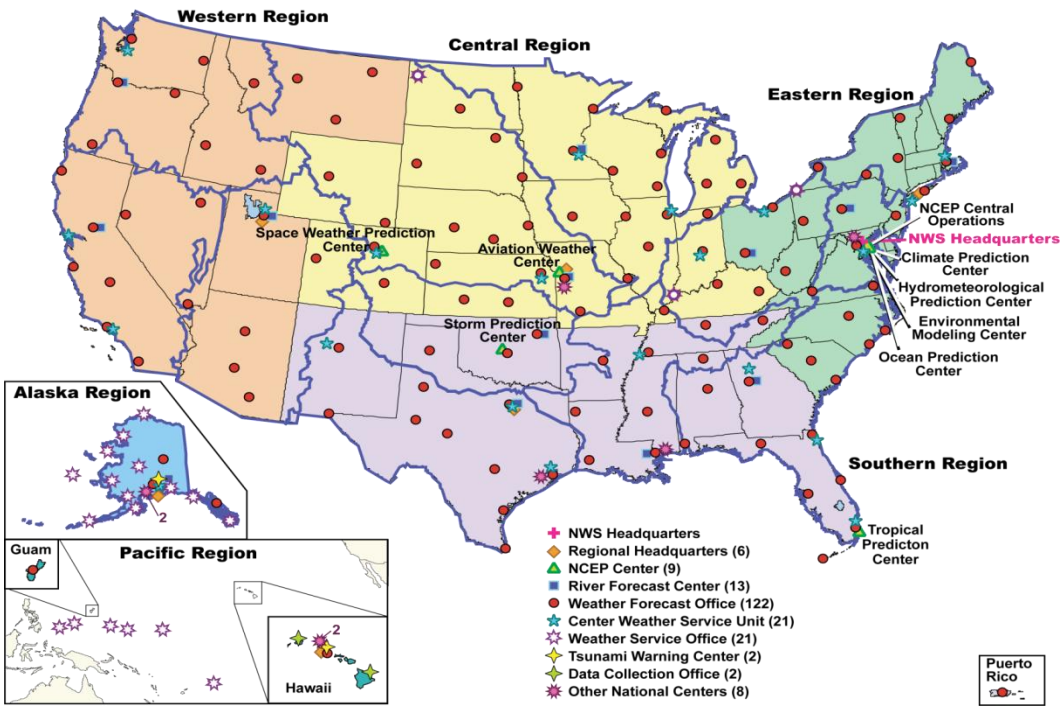
NOAA's National Weather Service

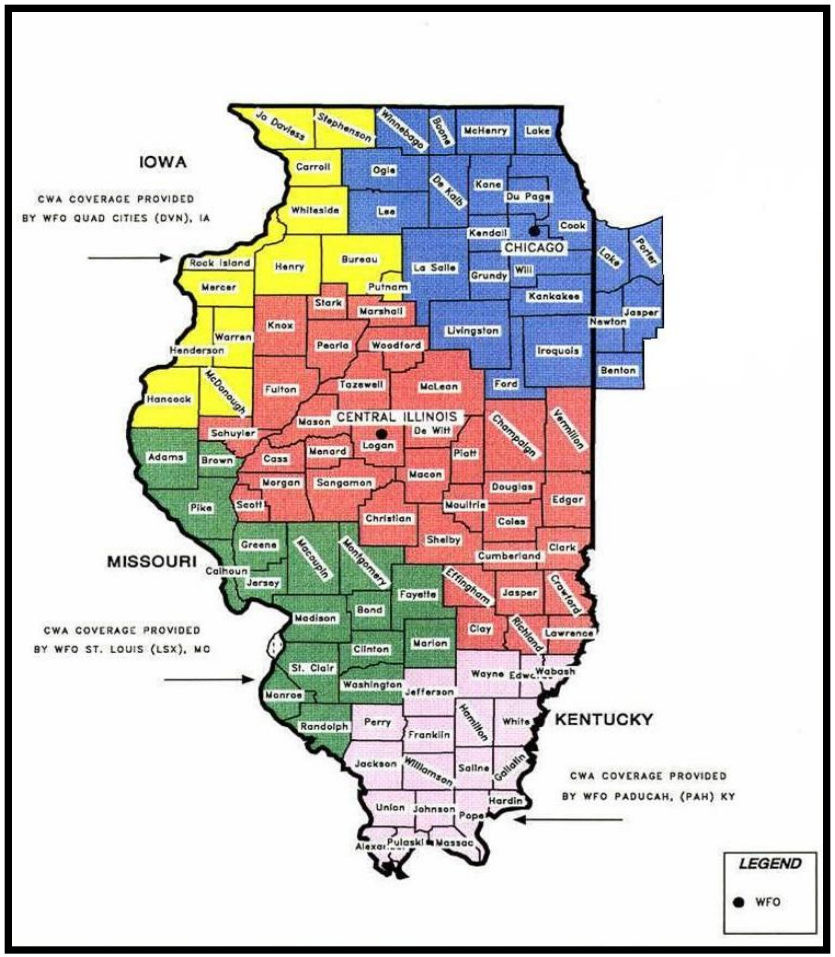
Welcome to the Lincoln NWS

National Weather Service



The NWS is made up of 122 local Weather Forecast Offices, 13 River Forecast Centers, and 21 Center Weather Service Units. Nine specialized offices make up the National Centers for Environmental Prediction.

NWS Areas of Responsibility



5 Weather Forecast Offices serve portions of Illinois:

- **Lincoln**
- **Romeoville**
- **Paducah KY**
- **St. Charles MO**
- **Davenport IA**

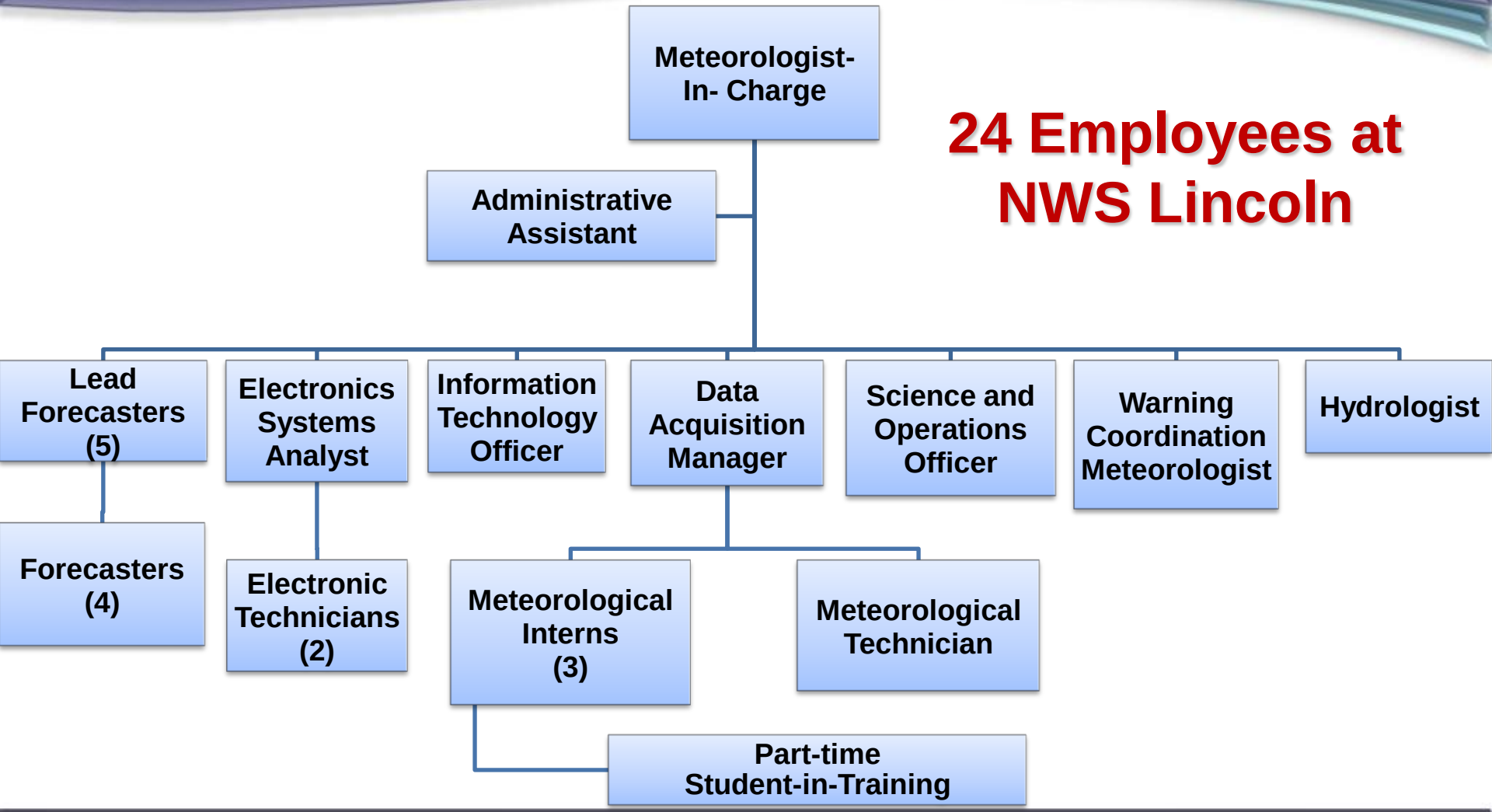
Additionally, a Center Weather Service Unit is located near Aurora.

Central Illinois WFO

The NWS office in Lincoln is on the south edge of the Logan County Airport, east of town along Highway 10. The office opened in 1995, replacing the existing offices in Peoria and Springfield. It is open 24 hours a day, 7 days a week, throughout the year.

National Weather Service
Lincoln, IL

NWS Lincoln Office Staff



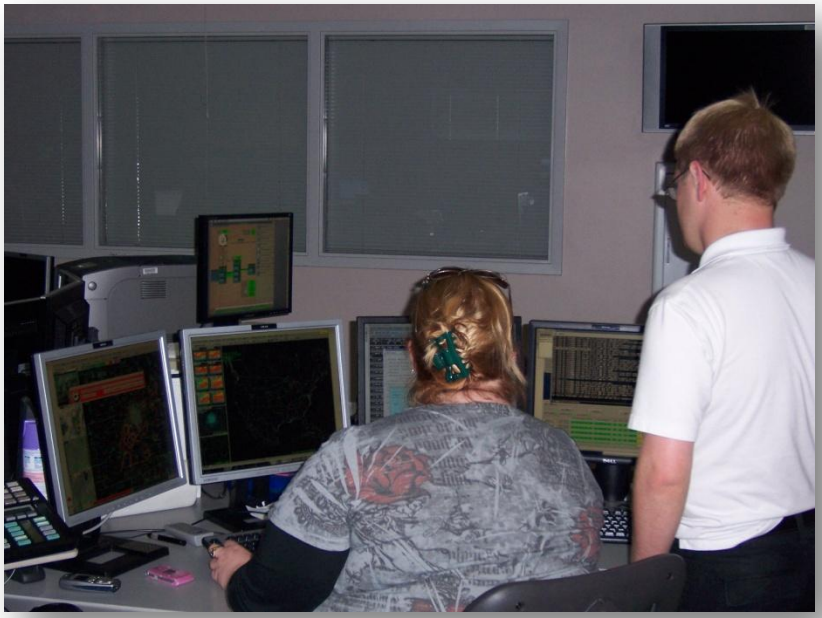
24 Employees at NWS Lincoln

Our Mission:

"…to provide warnings, forecasts and advisories – for all of the United States, its territories and adjacent waters – primarily for the protection of life and property."

Operations of the Lincoln NWS

Short Term Forecaster



- Monitors thunderstorm development, and issues warnings and statements as necessary
- Issues aviation forecasts for Bloomington, Champaign, Decatur, Peoria, Springfield
- Issues fire weather forecasts
- Issues needed forecast updates over the next several hours
- Issues the Hazardous Weather Outlook
- Issues river flood warnings and statements

This shift is staffed 24 hours a day, in 8-hour increments (midnight to 8 am, 8 am to 4 pm, and 4 pm to midnight).

Long Term Forecaster

- Issues graphical and text forecasts for the next 7 days
- Coordinates with neighboring NWS offices to ensure a seamless forecast across coverage areas
- Initiates watches, warnings, and advisories for winter weather, high winds, fog, and flooding

The main “package” of forecast information is issued twice daily, around 3:30 am and 3:30 pm. Updates are handled by the short term forecaster.

This shift is staffed 16 hours a day, in 8-hour increments (8 pm to 4 am, and 8 am to 4 pm).

Data Acquisition Unit

- Inflation and launch of weather balloons at 5 am and 5 pm CST (6 am/6 pm CDT), and quality control of received data
- Monitoring NOAA Weather Radio broadcasts
- Quality control of weather and river observations
- Preparation of weather data and climate summaries
- Operations of the Cooperative Observer network

This shift is staffed 16 hours a day, in 8-hour increments (4 am to noon, and 4 pm to midnight). During severe weather, these shifts are extended, or extra personnel brought in to assist.

Electronics Operations

Maintenance of several systems:
- Automated Surface Observation System stations at Champaign, Decatur, Lawrenceville, Mattoon, Peoria, and Springfield
- WSR-88D Doppler radar in Lincoln
- Wind profiler in Winchester
- Balloon tracking equipment in Lincoln
- NOAA Weather Radio equipment

Two electronics technicians, as well as an Electronics Systems Analyst, are used for this purpose. The maintenance can be rough at times, involving long travel days, heavy equipment parts, and working outdoors for extended periods in extreme heat or cold.

Additionally, an Information Technology Officer is employed to maintain the office computer networks.

Severe Weather Operations

During severe weather, operations can be quite hectic. Several additional people are brought in to assist with specific functions:

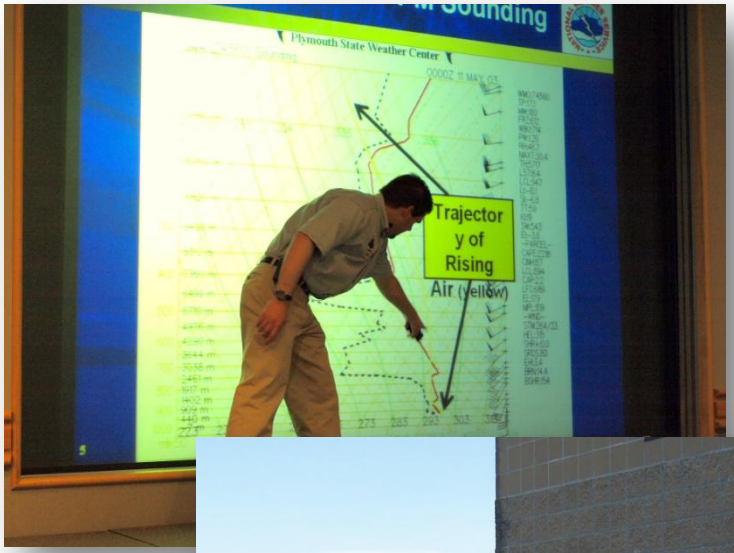
- Additional forecasters are used for issuing severe weather warnings and statements. This may be divided into specific sectors during widespread events.
- Volunteer radio operators monitor amateur radio communications.
- Extra data acquisition personnel conduct special balloon launches, issue Local Storm Reports, and monitor NOAA Weather Radio.

For a long outbreak, staff members may be working 12 or more hours in a row. Since weather does not shut down overnight, these shifts may extend well into the night.

Cooperative Observer Network

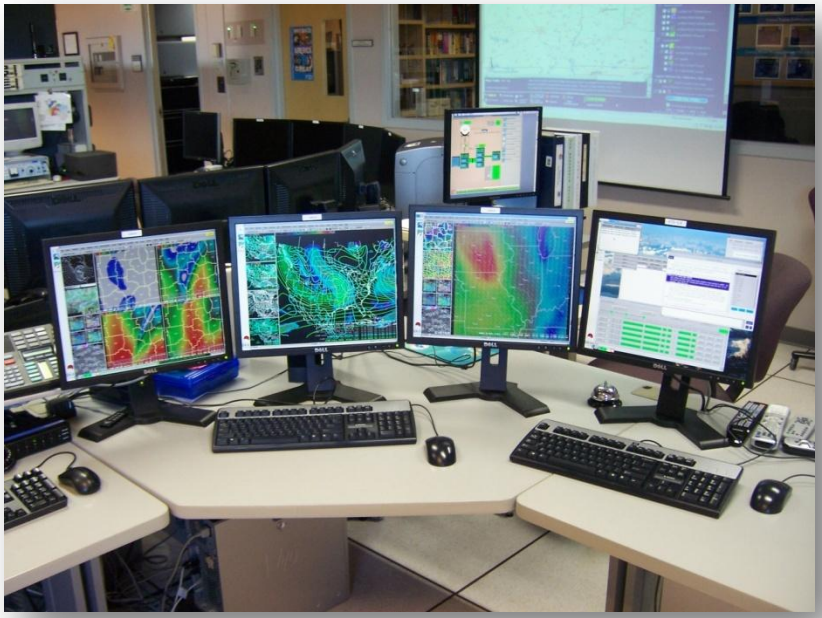
The Lincoln NWS operates a network of approximately 110 volunteer weather observers, who measure temperature and precipitation daily. Information gathered is used to support forecast operations, climatological analysis, and research.

Outreach



Staff members conduct storm spotter training each year, give media interviews, visit schools and community gatherings, and conduct office tours as well.

AWIPS



A computer system called AWIPS (Advanced Weather Information Processing System) is used by the NWS. AWIPS allows forecasters to view computer models, satellite information, weather observations, radar data, and more on a single workstations. The displays consist of a terminal to display text products, and 3 screens for graphical products. PC's are next to each workstation, as data from the Internet is also used in the forecast process.

The Lincoln NWS has 5 of these AWIPS workstations. Three of these are used in routine operations, while the other two are most commonly used during severe weather or operational backup of a neighboring office. A 6th workstation, with fewer displays, is used in conjunction with a projector to display data on a large screen during severe weather, tours, etc.

Doppler Radar

A Doppler radar, known as the WSR-88D, operates 24 hours a day. It is programmed with specific scanning strategies, which allows for quick updates in active weather, and a slower scan during quiet weather.

The Lincoln Doppler radar is one of 159 radars that operate as part of the nationwide WSR-88D network.

NOAA Weather Radio

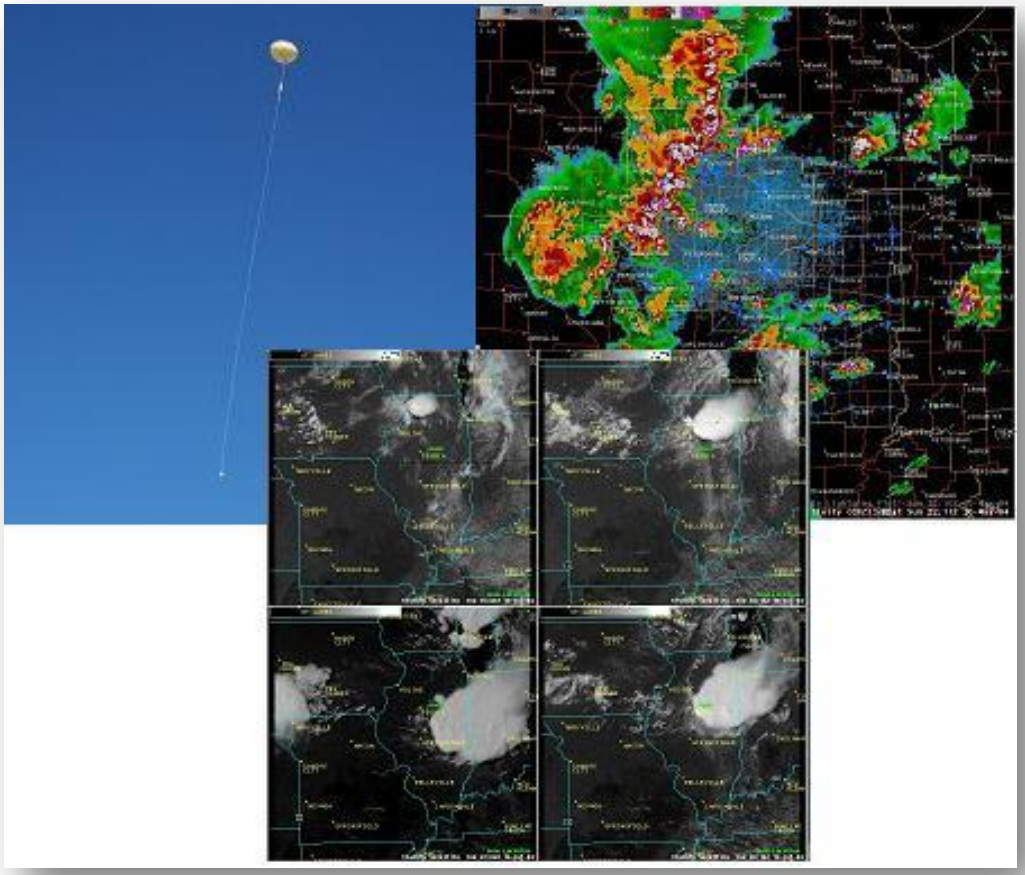
The Lincoln NWS operates 9 NOAA Weather Radio stations. A series of PC's are used to process the text messages issued by the NWS, and format them with synthesized voices for playback on the appropriate stations.

In the event of failure, the staff can manually record messages as necessary.

Weather Balloons

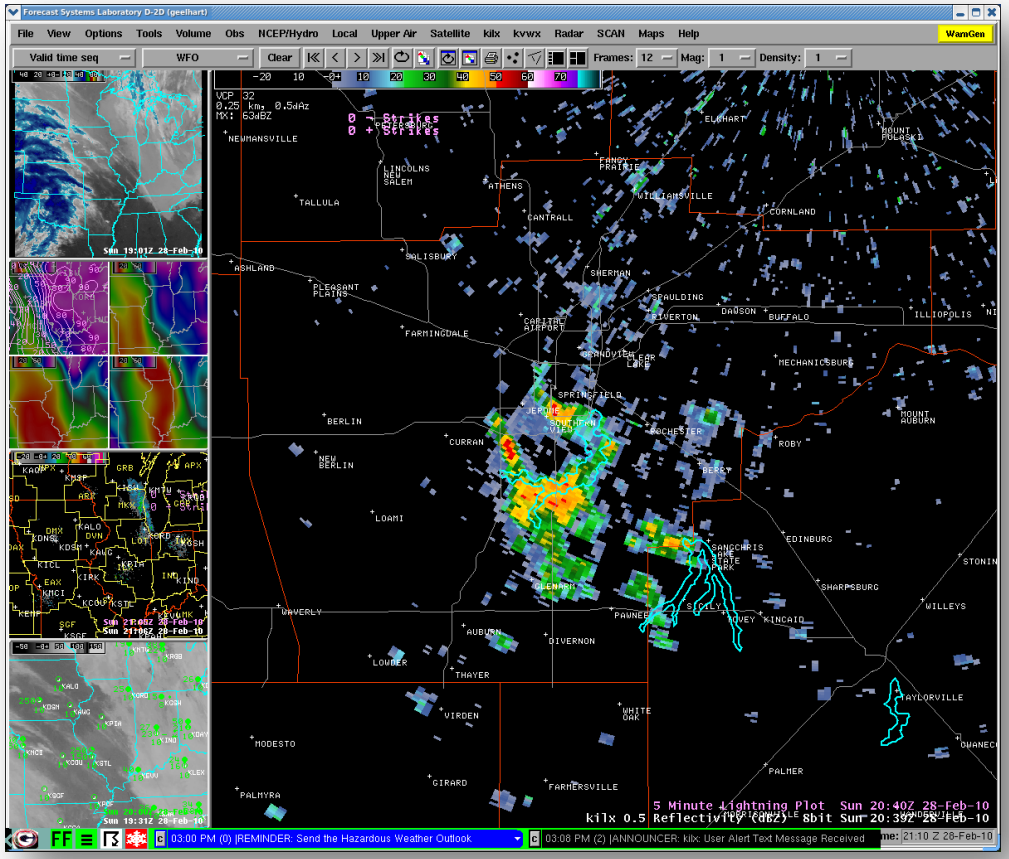
Weather balloons are launched twice a day, at 5 am and 5 pm CST (one hour later in CDT). The instruments attached to the balloons measure temperature, relative humidity, and barometric pressure in the atmosphere; signals relaying the exact position of the balloon lead to calculations of wind speed and direction. The data collected from these balloon flights is used as input to computer forecast models.

Making the Forecast



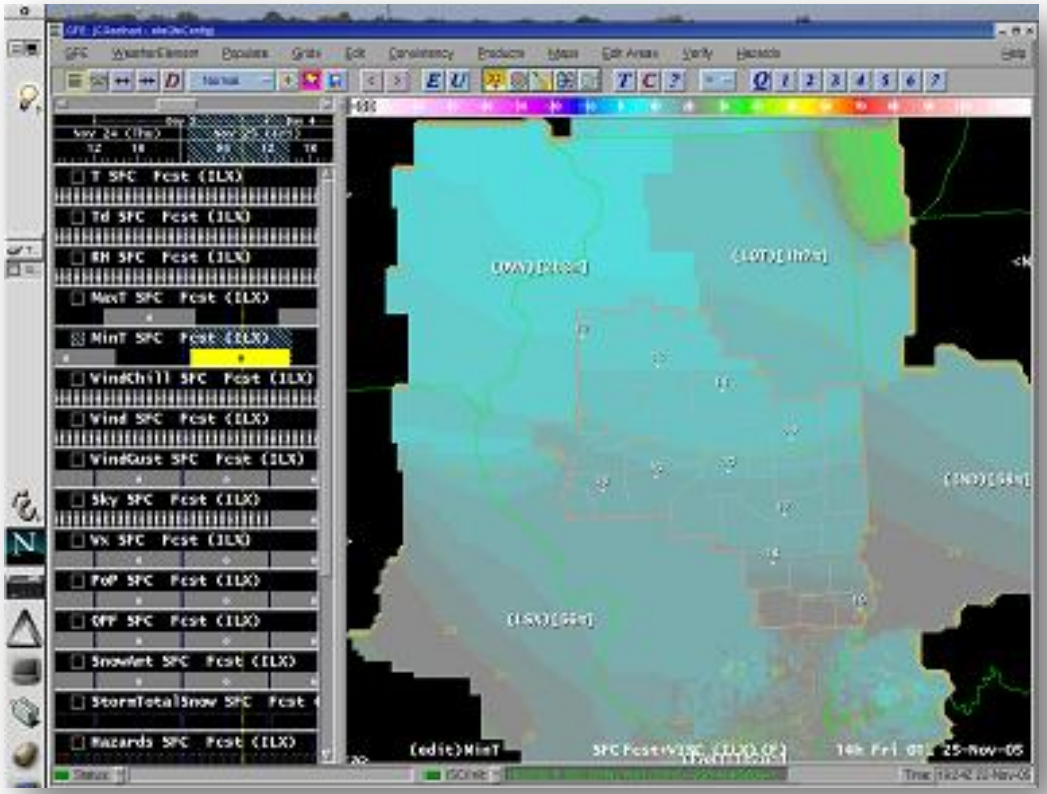
The start of the forecast process involves data collection. Upper-air weather observations, surface data, satellite and radar data, are all fed into computer models, which are run in Washington, DC. The forecasters review the output of these models. The models do not always show the same output, so the forecasters try to determine which ones are performing the best for the current situation.

Making the Forecast



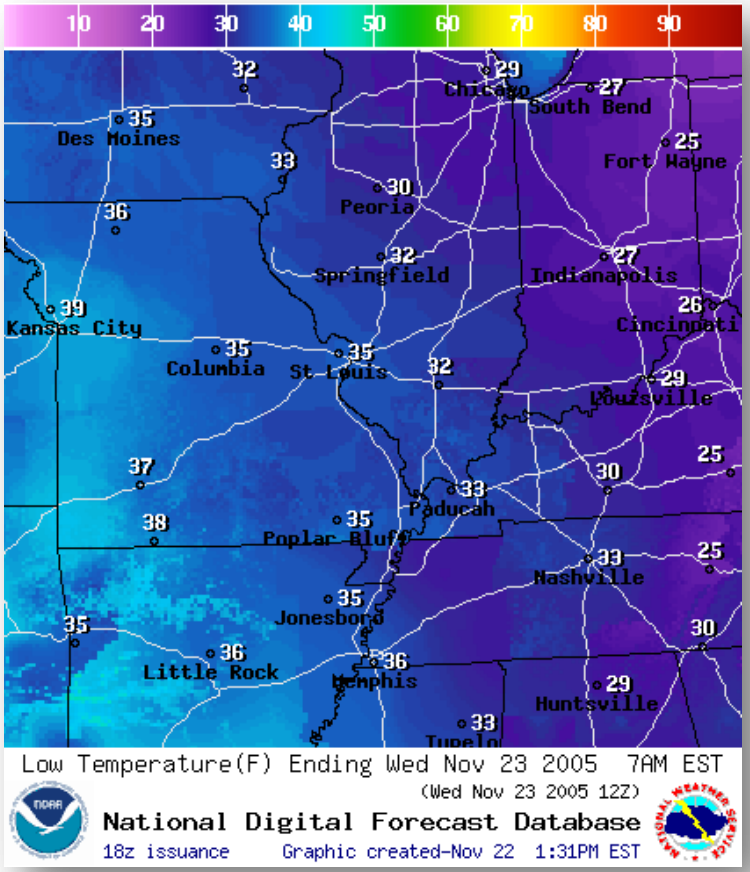
Computer models and other weather data are viewable on the AWIPS workstations. The main graphical interface has the ability to show several “windows” with different data. These can be switched back and forth between the large window and the small windows. The specific operations at that workstation usually dictates what data is loaded into the interface.

Making the Forecast



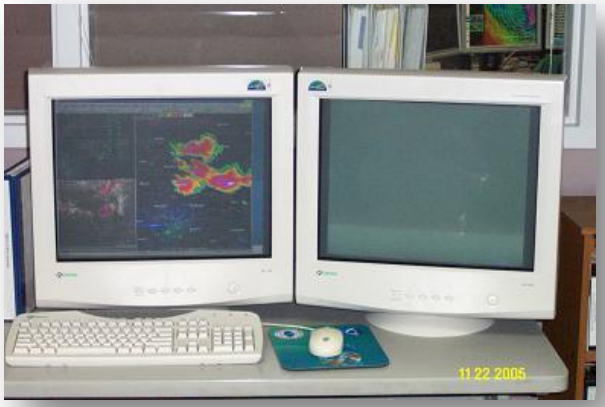
The forecasters use a program called the “Graphical Forecast Editor” , or GFE. GFE allows the forecasters to “draw” the expected weather conditions, either free-hand or by using model or observational data as a starting point. Output from this program is periodically sent to neighboring offices, and received as well. This allows the forecasters to collaborate the expected weather conditions with their neighbors. The offices also use instant messaging software on AWIPS to coordinate with each other.

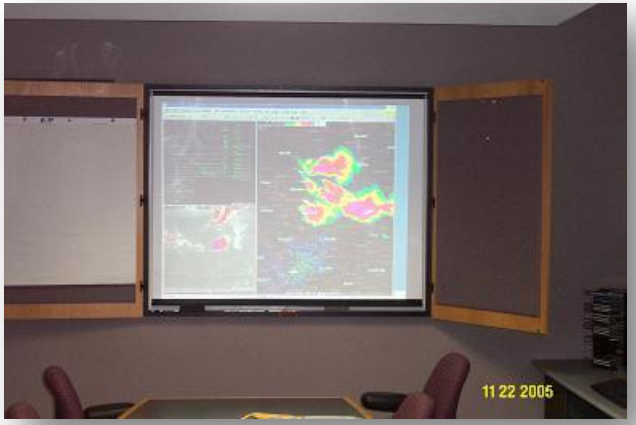
Making the Forecast



Once the forecasters have completed their graphical forecasters, they are designated as "official". Formatters within the GFE formatter convert the graphical output to text format, which is transmitted to the media, universities, private sector, etc. The graphical output is formatted for display on NWS websites, and is transmitted in gridded binary format to external users, where the output is used in many different formats.

Science and Training





A special AWIPS workstation, called the "Weather Event Simulator" (WES), is used for training. WES allows data from AWIPS to be replayed at a future time, either in a case study mode (all data available at once), or in displaced real-time (DRT) mode. In the DRT mode, the data is fed to the displays in the time and sequence that it occurred during the actual event. This allows forecasters to simulate severe weather operations, without fear of accidentally transmitting a real warning.

The images from WES can also be projected onto a screen in our conference room, allowing data to be reviewed by a group, or to demonstrate AWIPS to tour groups.

NOAA's National Weather Service

For More Information:

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