

Central Illinois Lincoln Logs



Volume 4 Issue 4

WINTER 2001

New Wind Chill Chart

Winter Weather Preparedness Week November 25th to December 1st

New Wind Chill Chart

by Rod Palmer, Warning Coordination Meteorologist

This winter, the National Weather Service (NWS) and Meteorological Services of Canada will use a new Wind Chill Temperature Index which began November 1, 2001, designed to calculate a more accurate reading of how the cold air feels on the human skin.

Since 1945, the United States and Canada have used an index which relied on observed

wind speeds 33 feet above the ground. This was from wind measuring equipment located at airports and designed to give pilots accurate wind speed measurements just before touchdown on the runway. Wind speeds are, typically, higher at 33 feet so the Index reduces the wind speed to the 5 foot, or near face level. The lower wind speed at 5 feet above the ground will produce a lower wind chill value.

For example, under the OLD index system, a temperature of 20 degrees with a 15 mph wind translated into a reading of five degrees below zero. The NEW index calculation using the same wind and temperature values yields a reading of six degrees above normal. Another example: temperature 5 degrees and a wind of 30 mph yields minus 41 under the OLD WCT and minus 18 under the NEW WCT.

The new index is based on:

- Wind speed calculated at the average height of the human face, about five feet (the human face is most often exposed to the cold).
- Updated heat transfer theory, which factors heat loss from the body to its

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surroundings during cold, windy days. Results were clinically studied on humans in a test chamber.

- A consistent standard for skin tissue resistance.
- Clear night sky conditions
- Lowered calm wind threshold from four mph to three mph.

The new Wind Chill Temperature Index also incorporates a new feature of minutes of time to frostbite. The chart illustrates the combinations of temperature and wind speeds that will produce frostbite to exposed flesh in increments of 5, 10, and 30 minutes.

As Illinois' winter temperature varies widely from north to south and people in northern Illinois are used to coping with colder conditions more often than those in the central and southern

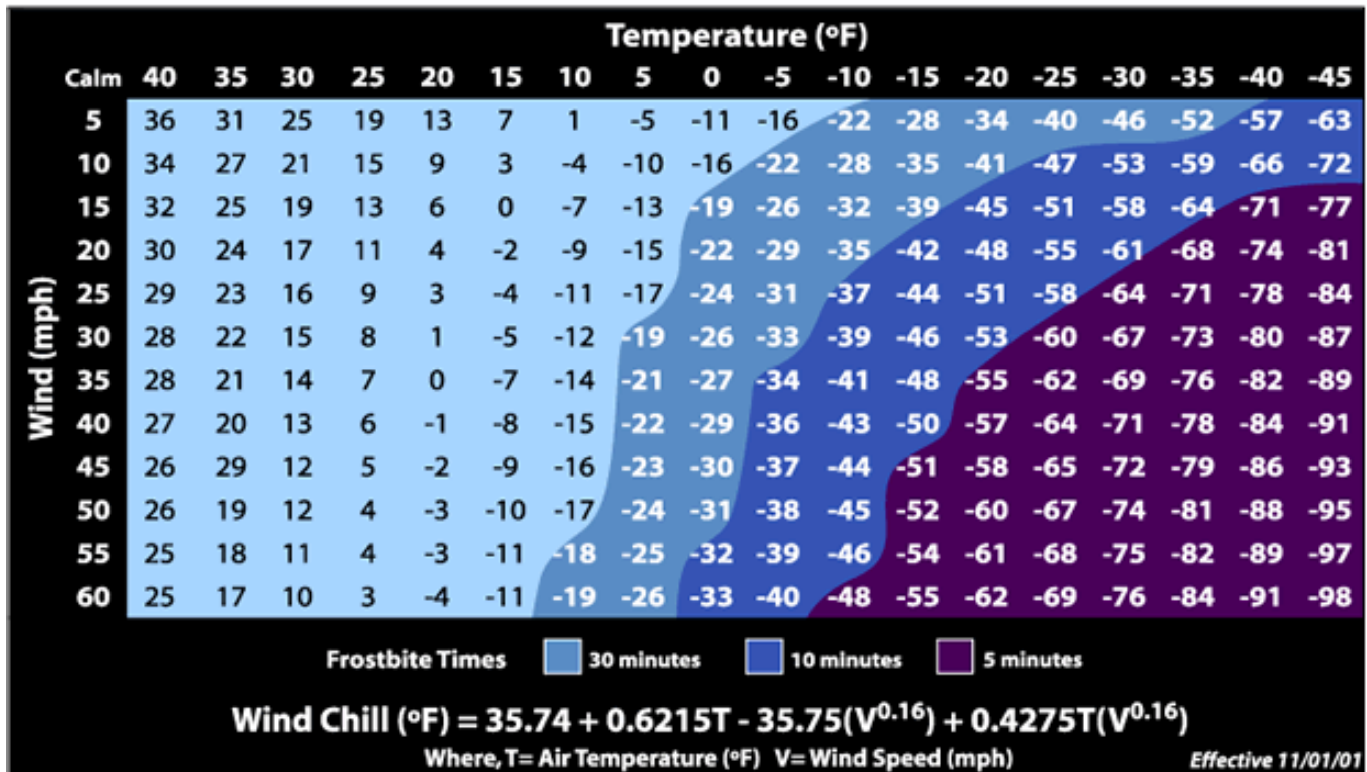
parts of the state, the NWS will issue the following wind chill advisories and warnings in Illinois according to the following:

AREA	ADVISORIES	WARNINGS
North	-20	-30
Central	-15	-25
South	-10	-25

For more information on the new Wind Chill Temperature Index, a color chart and a calculator that will compare old and new charts, check the internet at:

<http://www.nws.noaa.gov/om/windchill/>

Wind Chill Chart



Winter Outlook

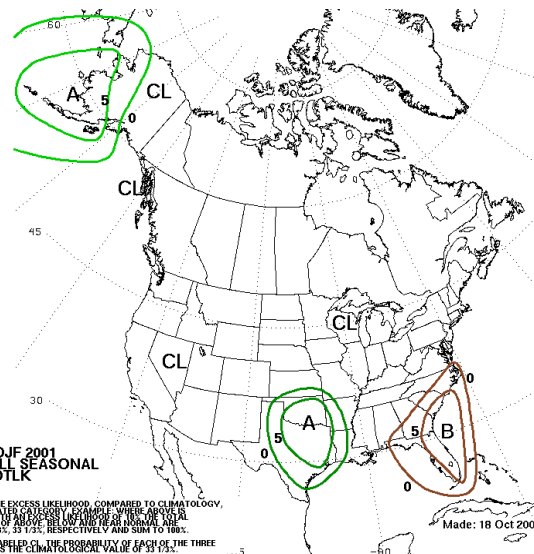
by Kirk Huettl, Forecaster

The Climate Prediction Center (CPC) in Washington DC issues seasonal outlooks during the middle of each month that predicts temperature and precipitation trends out to a year. The current outlook for this winter from December through February 2002 calls for near normal precipitation across Illinois. Temperatures are also looking close to normal across the southern half of the state from I-72 south. The northern half of Illinois north of I-72, running from Quincy to Champaign, advertises below normal temperatures as well as much of the north central and northeastern states.

Typically Central Illinois experiences winter highs in the middle 30s with lows in the upper teens to around 20 degrees. Around 6 inches of precipitation falls of which approximately 18 inches is snow. The average date of the first 1 inch snowfall is around Pearl Harbor Day on December 7.

The coldest winters during the past 125 years occurred from 1976-79 when the average mean temperature in the upper teens to near 20 degrees was actually at the average low. The snowiest winters in the past 100 years also occurred in the

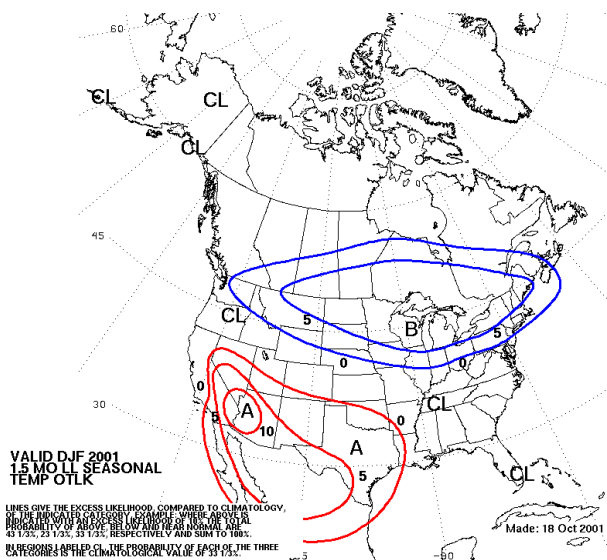
late 1970s from 1977-79, when close to 100 inches of the white stuff piled up during these 2 winters!



From The Desk Of The State Climatologist

by Jim Angel, State Climatologist

Snowfall is one of the features of winters in Illinois. On average, central Illinois can expect to see total amounts of between 16 inches in the southern counties to over 24 inches in the northern counties of the area. The Illinois State Water Survey published a study in 1969 on winter storms, based on data from 1900-1960. While the study is not new, the basic characteristics have remained the same. The study defined winter storms as those that produced 6 inches or more of snow, the threshold were snow starts to disrupt society. Illinois typically experiences five such storms each winter. Not surprisingly, the most active months are December, January, February, and March. However, winter storms have occurred as early as late October and as late as early May. Perhaps the strangest statistic is that the three days when these winter storms are most likely to occur are December 24, 25, and 26 (boosting our chances



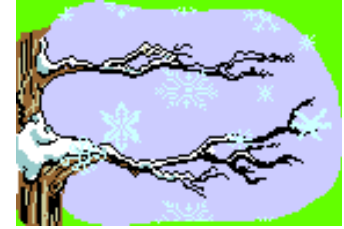
for a white Christmas). Most winter storms start during the daytime hours and last an average of 14 hours in duration, although the range is from 2 to 48 hours. As expected, winter storms are most likely to occur in northern Illinois.

The three major source regions for Illinois winter storms are Alberta clippers (11%), Colorado Lows (65%), and Texas West-Gulf cyclones (24%). As a result, the dominant storm direction, by far, is from the southwest. In the average severe storm, 32,205 square miles are covered by 1" or more (57% of the state) while 7,785 square miles experience 6" or more. The good news is that the snow from these winter storms usually persists for only a few days on average.

The most snow from a single storm was 37.8ö at Astoria on February 27-28, 1900. The most snow in a single season was 105.1 inches at Antioch during the winter of 1978-1979, one of the snowiest winters of the modern record.

The most notorious Illinois winter was the "Winter of the Deep Snow" in 1830-31. Survivors of that winter were referred to as "snow birds" - a meaning that is opposite of today's. Unfortunately, Billy Ousley was not around at that time so we do not have good snowfall records of that winter. Diaries and newspapers indicated that snow depths of three to four feet were common across Missouri and central Illinois, with drifts up to 12 feet. It was a winter of frequent winter storms and very cold temperatures that did not allow the snow to melt between storms. Since transportation was primarily by horseback, travel ground to a halt. A professor in Illinois College in Jacksonville described conditions like this. "Snow covered the entire country to the depth of at least three feet on the level. The storm ended in rain, which freezing as it fell formed a coat of ice not quite strong enough to bear a man's weight. On the top of this there fell a few inches of fine snow, as light as ashes...filling the air with drifting snow so blinding and choking in its effect that it

seemed impossible for a man to make headway against it." The modern record contains two winters that may be comparable; 1977-1978 with 18 winter storms and 1978-1979 with 17 winter storms. Snow cover lasted up to 120 days in northern Illinois and 90 days in southern Illinois during the 1977-1978 winter. Hopefully, we will not experience such conditions this winter.



Winter Weather Preparedness

by Melissa Byrd, Forecaster

It may be unseasonably warm for mid November...but it won't be long before winter weather is upon us and we should be prepared for it. The State of Illinois will hold its annual Winter Weather Preparedness Week from November 25th to December 1st. One of the purposes of this week is to raise the public awareness with regards to what constitutes winter weather and what to do to prepare for it. The major change this season is the introduction of a new Wind Chill Chart...see page 1 for details!

IEMA, Red Cross, and National Weather Service have internet homepages which have more in-depth information concerning winter weather preparedness. The internet addresses are:

IEMA
<http://www.state.il.us/iema/>

Red Cross
<http://www.redcross.org>

National Weather Service
<http://205.156.54.206/om/winter/index.shtml>

Operation Ice Pack
<http://www.icepack.org/>

Latest Winter Watches and Warnings
<http://iwin.nws.noaa.gov/iwin/il/winterstorm.htm>
|

IDOT Road Conditions Website
http://dot.state.il.us/operations/mo_state.html

or you can call 1-800-452-4368

Winter Weather Definitions

Warnings:

Blizzard - The following conditions are expected to prevail for a period of 3 hours or longer: sustained wind or frequent gusts to 35 mph and considerable falling and/or blowing snow reducing visibilities to less than a 1/4 mile.

Winter Storm - More than one of the following hazardous winter weather conditions is occurring, imminent, or highly likely.

Heavy Snow - Snowfall accumulating to 6 inches in 12 hours or 8 inches in 24 hours.

Ice Storm - Ice accumulations of 1/4 or more during a freezing rain event.

Sleet - Accumulation of 1/2 inch or more of sleet.

Advisories:

Winter Weather - More than one of the following winter weather situations is occurring, expected, or highly probable causing significant inconveniences but do not meet warning criteria.

Snow - Issued for 3 to 5 inches of snow or an early season snow of 2 inches.

Blowing Snow - Visibility is intermittently 1/4 mile or less with sustained winds of 25 to 30 mph.

Snow and Blowing Snow - A combination of the 2 above.

Freezing Drizzle/Rain - Ice accumulations cause driving or walking problems but no damage to trees or power lines (less than 1/4 inch accumulation).

Sleet - Less than 1/2 inch accumulation of sleet.

Wind Chill - Based on the rate of heat loss from exposed skin caused by combined effects of wind and cold. As the wind increases, heat is carried away from the body at a faster rate, driving down the body temperature. (See New Wind Chill Chart on page 2)

Wind Chill Warning - Wind chill values drop to -25 degrees or below.

Wind Chill Advisory - Wind chill values drop to between -15 and -24 degrees.

Winter Weather Attire

Recommended winter attire is loose fitting, lightweight, warm clothing in several layers. Also, wear a hat, scarf, mittens, and wool socks. This will help to prevent frostbite or hypothermia. Do not stay outside for extended periods!

If Caught in a Winter Storm...

Outside:

1. Find shelter and stay dry.
2. If no shelter - prepare a lean-to, build a fire.
3. Do not eat snow.

In a car or truck:

1. Stay in your car or truck.

2. Run the motor about 10 minutes each hour for heat.
3. Make yourself visible to rescuers.
4. Exercise.

At home or in a building:

1. Stay inside.
2. Keep warm.
3. Eat and drink.
4. Wear layers of loose-fitting, light-weight, warm clothing.

NWR Coverage for Bloomington Area

by Chris Geelhart, HMT

Radio coverage for the new Bloomington NOAA Weather Radio (KZZ-65) transmitter will include the following counties...McLean...Tazewell and Woodford. For more information go to our website at <http://www.crh.noaa.gov/ilx/nwr/ilxnwr.htm>

The Central Illinois Lincoln Logs is a quarterly review of NWS activities in Central Illinois and is available on our internet page at <http://www.crh.noaa.gov/ilx>

Your comments are welcomed and can be addressed to either editor at our office. Spring Central Illinois Lincoln Logs Issue to be issued by the end of January 2002.

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