

# Groundhog Day Winter Storm

## January 31<sup>st</sup>-February 2<sup>nd</sup>, 2011

### Overview

A historic winter storm produced crippling winter weather including heavy snow and blizzard conditions over a large area from the southern Plains through the middle and upper Mississippi Valley into the Great Lakes on February 1-2, 2011. Thundersnow was commonly observed during the storm from Oklahoma into Illinois. The intense snowfall and blizzard conditions completely overwhelmed the infrastructure across portions of the nation's midsection, leading to airport closures and hundreds of cancelled air flights, as well as the closure of portions of Interstate 70 across Missouri and Interstate 44 across southwest Missouri.

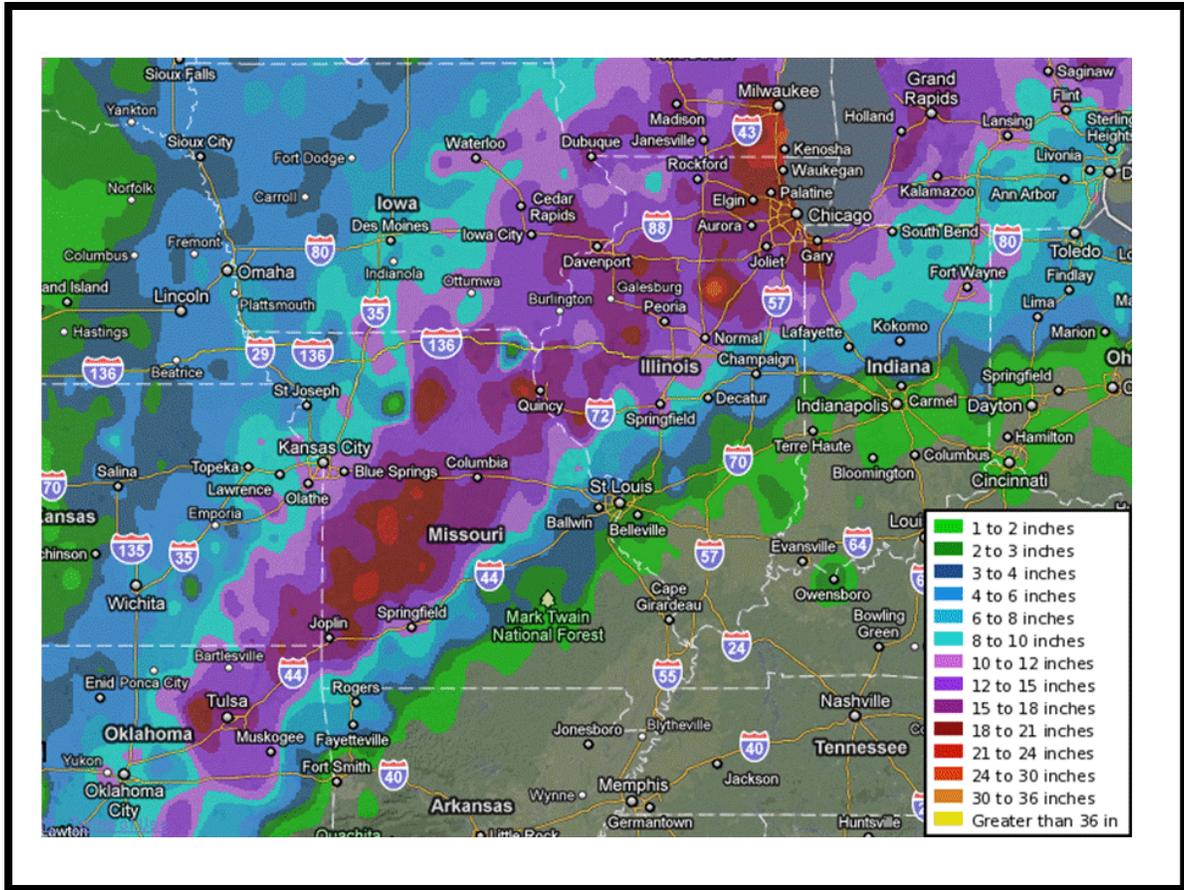
The storm actually came in two waves for portions of the area. The first wave came on Monday January 31<sup>st</sup> as several periods of sleet and freezing rain, occasionally accompanied by thunder, impacted the portions of the region. The precipitation tapered to freezing drizzle on Monday evening, as the second crippling portion of the storm began to evolve across the southern Plains. The second wave of the storm came on Tuesday and Tuesday night.

A wintry mix of snow and sleet spread into central Missouri near daybreak Tuesday February 1<sup>st</sup>, and the wintry precipitation quickly overspread the area during the morning. This winter storm produced quite a range of hazardous winter weather conditions across the area serviced by the National Weather Service Office in St. Louis. Heavy snow fell across central and northeast Missouri into west-central Illinois with rates at times exceeding 2 inches per hour. These high snowfall rates combined with strong northwest winds gusting from to near 35 mph produced near-blizzard conditions with very low visibility at times and near white-outs conditions. In addition, snow drifts of 3 to 5 feet deep were observed. The University of Missouri in Columbia cancelled classes for 2 days due to the storm and its aftermath. Total snowfall accumulations along the corridor through Columbia and Jefferson City through Hannibal and Quincy ranged from 14-22 inches. A number of cooperative weather observations sites reported all-time record high 2-day snowfall amounts.

Across portions of east-central Missouri and southwest Illinois the precipitation type was highly variable and created headaches for forecasters. An elevated layer of warm air centered around 5000 feet above the earth's surface was the complicating factor. Across far northwest sections of the St. Louis metro area this warm-layer eroded with snowfall totals approaching 7-8 inches along with an inch of sleet. Through the heart of metro St. Louis, the warm-layer eroded at times and then returned, leading to constantly changing precipitation types ranging from sleet to snow to even some freezing rain. The predominant precipitation type however was sleet, and sleet accumulations of 2-4 inches were common leading to very hazardous travel conditions. The precipitation finally changed to all snow on Tuesday night with some areas seeing an additional 1-3 inches of snowfall accumulation.

From the eastern Ozarks into south-central Illinois little if any snow occurred; instead these areas experienced freezing rain and some sleet. Ice accumulations of one-half to three-quarters of an inch were common. Some locations which experienced the ice storm portion of this crippling winter storm included Annapolis and Fredericktown, Missouri as well as Chester and Salem, Illinois. The ice accumulation on trees, tree limbs, and power lines created scattered power outages within this area.

# Accumulation Maps



Storm Total Snow Amounts



## Cold Air Outbreak

### Lowest Temperature Recorded After Storm 2/3

SLBM7 Shelbina -15F  
MNCM7 Monroe City -14F  
RSEM7 Rosebud -14F  
CDAM7 Mark Twain Lake -12F  
CALM7 California -11F  
FREM7 Freedom -11F  
VNDM7 Vandalia -11F  
KCOU Columbia -10F  
CANM7 Canton L/D 20 -10F  
FULM7 Fulton -10F  
PEYI2 Perry -10F  
SAVM7 Saverton L/D 22 -10F  
BWGM7 Bowling Green -9F  
KJEF Jefferson City -9F  
KUIIN Quincy -9F  
WTNM7 Warrenton -9F  
PTTM7 Pittsfield -8F

### Lowest Hourly Wind Chill Values Observed 2/3

KUIIN Quincy -25F  
KPPQ Pittsfield -24F  
KCOU Columbia -20F  
KHAE Hannibal -18F  
KJEF Jefferson City -17F  
KSET St. Charles -12F  
KALN Alton -10F  
KSTL St. Louis -9F  
KUUV Sullivan -8F  
KSUS Chesterfield -7F  
KCPS Cahokia -5F

*Any questions regarding this event review should be address to [w-lsx.webmaster@noaa.gov](mailto:w-lsx.webmaster@noaa.gov)*