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## Indiana State Climate Office

### Monthly Weather Report

Feb 2, 2009



<http://www.iclimat.org>

## January 2009 Climate Summary

### Summary

January is completed and what a month it was. The first month of 2009 will enter the record books as the 13<sup>th</sup> coldest in Indiana since 1895 and the coldest January since 1994, with a statewide average temperature of 21.3F. Extreme weather was common, especially in the second half of the month. There were two separate periods in which temperatures were more than 20F below normal. The month was also quite snowy. A few strong systems marched through the state, the most significant occurring from January 26<sup>th</sup>-28<sup>th</sup>. This system produced heavy snow in central Indiana and large amounts of ice in the south. At least five deaths have already been attributed to this system alone. Close to 100,000 homes and businesses were without power for days.

January temperatures were extremely cold, capped by two periods of polar air. Highs failed to breach zero on the 15<sup>th</sup> and 16<sup>th</sup>, the first time that had happened in 15 years. The 21.3F statewide average temperature is the 13<sup>th</sup> coldest on record, which date back to 1895. A few records were tied across the state but no new records were attributed to this cold streak, which was a bit weaker than the ones in 1994 and 1985.

Overall precipitation was below average in January, which may surprise some people. Though the state received a lot of snow it does not translate to a lot of water equivalent precipitation. The statewide average was a mere 2.44 inches, which is actually dead center in the record books: 58<sup>th</sup> driest *and* wettest. Over 80% of the state accumulated a foot of snow or more during the 31 days in January and everywhere had at least six inches. It wasn't always snow falling, however. Though rain was scarce, some of the precipitation, especially in the south, fell as sleet and freezing rain. The combination of snow and ice wreaked havoc weekly. At least eight Hoosiers died during the month from weather-related causes, including automobile accidents and shoveling.

### January 1<sup>st</sup> – 7<sup>th</sup>

The first week of 2009 can be separated into two parts: warm and dry or cool and wet. A distinct line was drawn on the afternoon of the 4<sup>th</sup>, splitting Indiana's weather. The New Year started with average temperatures across the state, with highs in the mid- to upper-30's on the 1<sup>st</sup>. Temperatures rose steadily the next few days. Highs in the low-40's were abundant on the 2<sup>nd</sup>. Even warmer temperatures blanketed the state on the 3<sup>rd</sup>, with the average high approaching 50F. The temperature boost continued through the afternoon on the 4<sup>th</sup> when the state was engulfed in

the warm sector of a synoptic low pressure system. In the central and southern counties high temperatures jumped above 50F, more than 10F above the normal. Temperatures quickly dropped back to the normal as the second part of the synoptic system – the cold front – passed later that same day. On the 5<sup>th</sup> highs were back in the mid-30's and by the 6<sup>th</sup> they had dropped a few degrees more. Highs across Indiana remained slightly below normal on the final day of the first week of 2009. The average high for Jan 1 – 7, 2009 is approximately 40F, about 3F above normal.

There was little precipitation activity through the first few days of January 2009. Some minor lake-effect snow fell in the northwestern counties on New Year's Day but accumulations were minimal. Thanks to two different regions of high pressure during the first days of 2009, Indiana was relatively dry. The first widespread precipitation fell during the late afternoon and evening of the 4<sup>th</sup> as the synoptic system pushed eastward. Light rain and drizzle fell across the state, with accumulations less than 1/4 of an inch. Remnants of the weak cold front fell throughout the morning of 5<sup>th</sup> along the Indiana-Kentucky border while the rest of the state was dry. The dawn of the 6<sup>th</sup> day of January 2009 brought more precipitation, including the first widespread snow and ice of the New Year. Some moisture from a developing system in the Tennessee Valley clipped eastern portions of the Mid-West. Snow and freezing rain were reported from Fort Wayne to West Lafayette and south to Indianapolis. The northern and central counties saw a light snow/freezing rain mix throughout the morning and early afternoon. Southern counties received modest amounts of rain, with totals in some areas up to 0.3 inches. With temperatures falling through the evening of the 6<sup>th</sup>, remaining precipitation changed to snow. Intermittent snow showers fell across the state all day on the 7<sup>th</sup>. New snow accumulations were largest around the lake (> 1 inch). Elsewhere the new snow failed to cover the grass. All of Indiana saw snow at some point during the first week of 2009.

The quiet start to the New Year came to a halt on the morning of the 6<sup>th</sup> thanks to near-freezing temperatures. Freezing rain caused slick conditions and some collisions in the northern and central regions. The U.S. 231 bridge over the Wabash River between Lafayette and West Lafayette was eventually closed as a result of multiple accidents. Conditions along I-65 from Indianapolis north to Chicago were icy as well and the Indiana State Police did respond to a few accidents and slide-off incidents. The conditions proved fatal at least once as icy roads caused a Petersburg woman to lose control of her car in a fatal crash on Indiana 57 during the early morning hours on January 6. The State Police reported more than 30 accidents on the 6<sup>th</sup> in just Lake, Porter, LaPorte, Newton, Jasper, Starke and Pulaski counties.

### **January 8<sup>th</sup> – 14<sup>th</sup>**

The second week of 2009 was quite inconsistent; there was a continual oscillation of temperatures around the normal as well as a pronounced separation of warm and cool air in the central part of the state. Cold air was continually flushed into Indiana on the 8<sup>th</sup> as high pressure moved southeast out of Canada. Pockets of air were cooler across the state, a theme for the week. High temperatures were 3-8F below normal. Temperatures rebounded on the 9<sup>th</sup> as the leading edge of a synoptic low pressure system brought warmer air to the region. Highs climbed into the upper-30's, about 6F above normal. As the system passed on the 10<sup>th</sup> temperatures receded a little, though they hovered around normal. The real drop came on the 11<sup>th</sup> after the

system had vacated the region. Highs fell from the mid-30s into the upper-20's across Indiana. An area of high pressure, this time moving northeast out of the Gulf, produced slightly warmer temperatures on the 12<sup>th</sup>. A cold front on the 13<sup>th</sup> put an end to that. Highs fell back into the upper-20's, more than 6F cooler than usual. The 14<sup>th</sup> introduced a large temperature gradient across the state due to the introduction of another synoptic system. Warmer temperatures engulfed southern Indiana as cold air rushed over the north. High's reached 45 in southwestern counties while they failed to breach 15 in the northeast. The statewide average high for week two was approximately 30F, about 2F below normal.

A departing disturbance left behind some snow on the 8<sup>th</sup>. All of Indiana saw scattered snow showers with accumulations of 0.5 inches or less, though some heavier pockets existed in the southeast resulting in an inch or more. The state was relatively dry on the 9<sup>th</sup>, save for some lake-effect snow in the northwest. The synoptic system on the 10<sup>th</sup> brought significant moisture through the 11<sup>th</sup>. Northern counties received moderate snowfall and some ice with as much as 6 inches along the Indiana-Michigan border. From around Indianapolis and south saw rain. Central counties received a wintry mix causing some hazardous driving conditions. The area of snow broadened on the 12<sup>th</sup> as the rain ended. All but southwestern counties experienced scattered and isolated snow showers with minimal accumulation. Snow continued falling in the north with the passage of the cold front. Counties around the lake received another 2 or more inches on the 13<sup>th</sup>. The new synoptic system brought more precipitation late on the 14<sup>th</sup>. Light snow showers fell across central and eastern Indiana with heavier snow focused around the lake once again. It was quite the active week. Over a foot of snow fell around the lake, with at least an inch falling across the entire state. The active weather caused some unfortunate events.

Accumulating ice late on the 9<sup>th</sup> and early on the 10<sup>th</sup> caused the cancellation of events across central and northern Indiana while heavy snow in Munster produced slide-offs and accidents, including a semi-trailer which jack-knifed on the Indiana Toll Road in Gary. These events were common along the Borman Expressway and Interstates 80, 90, and 94 as well. State Police said secondary roads in Blackford, Delaware, Grant, Jay and Randolph counties were a sheet of ice and generally too slick to drive on. In Delaware County, five Highway Department trucks slid into ditches while applying sand and salt. Three separate accidents involving eight different cars occurred near Indiana 332 and Delaware County Road 700-W. In Fort Wayne, State Police worked nearly 40 slide-offs and crashes, five of them with injuries. The police closed the southbound lanes of Interstate 69 for more than an hour on the 10<sup>th</sup> due to the icy conditions. Tow trucks stopped responding to accidents because they were sliding off icy roads when they tried to pull vehicles from ditches. There was at least one fatal incident, a crash along snow- and ice-covered U.S. 20 in northeast Indiana. The crash happened in Angola, about 30 miles north of Fort Wayne. Some counties posted Level 3 Emergencies during the week for ice and/or blizzard conditions. Level 3 Emergencies are formal warnings about conditions.

### **January 15<sup>th</sup> – 21<sup>st</sup>**

There is only one word that can describe the third week of January: cold. Temperatures were at or below normal the entire week. Due to an enormous trough that dropped all the way down into southern Texas, high temperatures on the 15<sup>th</sup> and 16<sup>th</sup> failed to breach 0F. It was the first time in almost exactly 15 years that highs were below zero (the last being January 19, 1994) for parts

of the state. Cold air rushed south out of Canada and temperatures dropped more than 20F below zero for all of Indiana. Some counties – such as Lake, Newton, and Benton – were more than 32F below normal on the 15<sup>th</sup>. Strong winds made conditions even worse on the 15<sup>th</sup> and 16<sup>th</sup>. The extremely cold temperatures felt even worse as wind chills dipped into the -30's and -40's. Some records were set or tied as a result of the mid-winter chill. Fort Wayne tied their record low temperature of -19F on the 16<sup>th</sup>. The previous record had been set in 1972. As the region of high pressure passed through the Midwest and into the Tennessee Valley on the 16<sup>th</sup>, temperatures rose slightly but were still unusually frigid. Once again high temperatures were at least 17F below normal statewide. Luckily conditions warmed the following day as the state was engulfed in the warm pool of a north-passing occlusion. Northern counties remained slightly below normal but the rest of the state warmed to normal or, in the case of the southwest, a bit above normal. The statewide average high temperature on the 17<sup>th</sup> was about 34F. The brief reprieve from the cold ended just a day later as the occlusions cold front passed, dropping temperatures below normal again on the 18th. High temperatures were at least 5F cooler than the previous day. The north once again took the brunt of the temperature drop, with highs more than 10F below normal. The temperature gradient leveled out on the 19th as the cool Canadian air penetrated south. The statewide high of approximately 23F was more than 10F below normal. The air cooled a bit more the following day, with highs across the state in the low-20's. A ridge directly east of Indiana produced slightly warmer temperatures on the 21st, though they remained below normal. The statewide average high temperature for the 3rd week of January was approximately 22F, which is more than 10F below normal.

Snow, in conjunction with the strong cold front, fell across most of the state throughout the 15th. Southern and west central counties received under an inch but northern and east central counties saw accumulations of two inches or more. The National Weather Service reported a record snowfall of 6.4 inches in South Bend, breaking the previous record of 6.2 inches set in 1997. Light lake-effect snow showers engulfed the north on the 16th, supplying an additional dusting to the already snow-covered counties. The snow continued to fall in the north on the 17th and 18th, this time as a result of the occlusion. The two-day storm added another 1.5-2 inches of snow from Howard county to the north and east. Remnant snow showers fell on the 19th leaving less than an inch of new snow across the entire state. Stronger lake-effect snow showers moved due south on the 20th, producing over an inch of snow in Porter and LaPorte counties. Light, isolated snow showers moved sporadically across much of northern and central Indiana as well. The final day of the third week of January was dry for much of the state, save for a few lake-induced snow showers in the northwest. Weekly snowfall accumulations were an inch or higher for the entire state, with 3 inches or more having fallen in central counties, and more than 4 inches in the north. Counties by the lake received half a foot.

The strong arctic system that brought extremely cold temperatures and snow at the end of week two and into week three caused the Indiana Toll Road to ban some large trucks from the highway on the 14th and 15th due to hazardous driving conditions. Oversized steel-haulers and triple-trailer trucks were not allowed on the highway until noon on the 15th. Basketball and wrestling matches were postponed across northern Indiana on the 15th and 16th due to the extreme cold and dangerous driving conditions. Sleet falling late on the 17th caused an emergency landing at the Purdue University airport. The single-engine aircraft began to vibrate and the windshield ice over due to sleet when the plane reached 5,000 feet. The plane undershot the runway and its

front wheel collapsed and its left wheel fell off, causing it to stop nose down with its left wing on the ground. Emergency crews had been on standby and the pilot and passenger were unhurt. The slick conditions continued through the 17<sup>th</sup> and into the morning of the 18<sup>th</sup>. St. Joseph County emergency dispatchers reported personal injury accidents, vehicles stuck in ditches, and cars sliding into poles during the early morning hours on the 18<sup>th</sup>. Winter weather has caused mass cancellations and low turnouts for blood drives in the Mid-West recently. The Red Cross had to close early or cancel 11 blood drives this week in Indiana for a total of nearly 520 units of blood lost due to the bitter weather. Residents at least 17 years of age, weigh a minimum of 110 pounds and are in good general health are urged to donate blood to maintain the levels of donations needed for area hospitals.

### **January 22<sup>nd</sup> – 31<sup>st</sup>**

Every week tends to have one significant event, highlighted above all else. This time around it came in the form of heavy snow and ice instead of intense cold temperatures, though some abnormally cool conditions did appear. They wouldn't be present at the beginning of the third week of January 2009. High temperatures were slightly above normal on the 22<sup>nd</sup> and 23<sup>rd</sup>, thanks in part to southern high pressure and small warm front. Things would change drastically over the next few days, reminiscent of the beginning of week two. A stout cold front pushed its way south out of Canada once more, causing temperatures to plummet well below normal. Temperatures wouldn't rebound for a week. Highs from the 24<sup>th</sup> through the 28<sup>th</sup> were more than 12F below normal. Some regions, like the northwest on the 24<sup>th</sup> and the south on the 25<sup>th</sup>, were as much as 20F below normal. Temperatures in the mid-teens are rare at any time of the year but were prevalent during this week. The 29<sup>th</sup> temperatures rose some but overall the region was about 6F below normal, though the northwest had a better respite. Another cold front passed the state late on the 29<sup>th</sup> dropping temperatures again. Statewide high temperatures were in the low-20's, more than 13F below normal. Thankfully the leading edge of a northern-moving synoptic low pressure system passed over Indiana during the 31<sup>st</sup>, drastically raising temperatures in the north and central regions. The 10-day average high temperature was about 28F, which is more than 7F below normal.

Precipitation-wise the week started off slow and boring. No rain or snow fell on the 22<sup>nd</sup> or 23<sup>rd</sup> and only light lake effect snow was reported in the northwest on the 24<sup>th</sup>. Some rogue moisture on the 25<sup>th</sup> caused snow showers to engulf the western and central portions of the state. Accumulations were minimal. The boring weather morphed into dangerous conditions, starting on the 26<sup>th</sup>. Snow showers and ice spread across the entire state but accumulations were limited to 0.5 inch or less. The intensity picked up overnight and throughout the day on the 27<sup>th</sup>. About five inches fell from Warren to Jay counties, with accumulations increasing to the south. Much of central and southern Indiana received seven or more inches. The largest accumulations were reported from Indianapolis to Bloomington. The National Weather Service said storm totals ranged between 5 and 15 inches of snow by the time the storm pushed east of the state on Wednesday the 28th. Indianapolis reported a snow depth of 12.5 inches — the most since a January 1996 storm dropped 12.8 inches, the weather service said. Weather service meteorologist Logan Johnson said Indianapolis' snowfall ranked as the sixth-heaviest accumulation on record, tying it with storms that also dropped 12.5 inches in January 1968 and February 1965. The weather service said Indiana's heaviest storm total was 15.3 inches reported

in Gosport, about 15 miles northwest of Bloomington. Other Indiana snowfall reports included 10 inches in Terre Haute, 8.3 inches in Greensburg, 7 inches in Columbus and 5 inches in Lafayette. Light snow showers fell on the morning of the 29<sup>th</sup> before the system finally exited the region. Yet another cold front brought more snow on the final two days of the month. Accumulations were less than 0.5 inches however. The 10-day snowfall total was more than a foot across much of central Indiana. The entire state received at least two inches over this period.

As the strong winter system hit on the 27<sup>th</sup> many schools in central Indiana closed. Road conditions worsened throughout the day as the storm strengthened. A few slide-offs were reported but thankfully no injuries. While the heavy snow fell in central counties, the south dealt with sleet and freezing rain. From that came power outages. More than 92,000 homes in southern Indiana were without power during the morning hours of January 28<sup>th</sup> due to the ice. The ice was knocking down tree limbs and power lines as crews were attempting to fix them. Two roofs collapsed, one each in Evansville and Indianapolis (Knights of Columbus hall on Indianapolis' west side), due to the weight of snow and ice. Multiple collegiate institutions closed for the day, including the Ball State University, University of Southern Indiana, Vincennes University, and IUPUI in Indianapolis. As conditions worsened overnight into Wednesday morning more accidents were reported. People were not as lucky on Wednesday. On snow-covered Indiana 64 a car collided with another car killing a woman from Marengo. A tractor trailer carrying items for Subway restaurants flipped onto its side on Indiana 67. No injuries were reported. A tractor trailer also slid off on Interstate 70 causing lane closures and additional delays. The heavy snow caused logistical problems, too. WTHR reported that, despite around the clock efforts by salt trucks and plows, continuous snow fall has made a complete clearing of the roads nearly impossible. Some estimates had an inch of snow falling every hour in the early morning hours on the 28<sup>th</sup>. Of the 92,000 homes without power on the 28<sup>th</sup>, an estimated 75,000 remained without power into the 29<sup>th</sup>. Another three deaths were being attributed to the storm – two from shoveling snow and one from a traffic accident in Crawford County. Some southern Indiana schools remained closed on Thursday and even Friday due to road conditions and the lack of power. The storm that brought widespread snowfall and ice is thought to be the biggest storm since 1996 for the central part of the state.

## January Summary

### Temperature

Region	Temperature	Normal	Deviation
Northwest	17.2	23.0	-5.8
North Central	17.2	23.2	-6.0
Northeast	17.1	23.1	-6.0
West Central	20.7	25.1	-4.4
Central	21.2	25.3	-4.1
East Central	20.3	24.7	-4.4
Southwest	26.5	29.9	-3.4
South Central	25.4	29.9	-4.5
Southeast	24.9	29.1	-4.2
<b>State</b>	<b>21.3</b>	<b>26.0</b>	<b>-4.7</b>

## Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	0.91	1.88	-0.97	48
North Central	1.18	2.05	-0.87	58
Northeast	1.30	1.98	-0.68	65
West Central	1.18	2.28	-1.10	52
Central	1.56	2.34	-0.78	67
East Central	1.50	2.29	-0.79	66
Southwest	2.47	3.00	-0.53	82
South Central	2.58	3.10	-0.52	83
Southeast	2.63	3.00	-0.37	88
<b>State</b>	1.69	2.44	-0.75	69

## Winter-to-Date

(December 2008, January 2009)

## Temperature

Region	Temperature	Normal	Deviation
Northwest	20.9	25.8	-4.9
North Central	21.1	25.9	-4.8
Northeast	21.4	25.9	-4.5
West Central	24.3	27.8	-3.5
Central	24.6	28.0	-3.4
East Central	24.3	27.4	-3.1
Southwest	29.7	32.2	-2.5
South Central	28.8	32.2	-3.4
Southeast	28.1	31.6	-3.5
<b>State</b>	24.9	28.6	-3.7

## Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	5.46	4.53	0.93	121
North Central	5.69	4.84	0.85	118
Northeast	5.69	4.67	1.02	122
West Central	6.51	5.25	1.26	124
Central	6.95	5.33	1.62	131
East Central	6.38	5.16	1.22	124
Southwest	7.63	6.53	1.10	117
South Central	8.22	6.66	1.56	123
Southeast	7.88	6.41	1.47	123
<b>State</b>	6.73	5.49	1.24	123

**Annual-to-Date**  
(same as January)

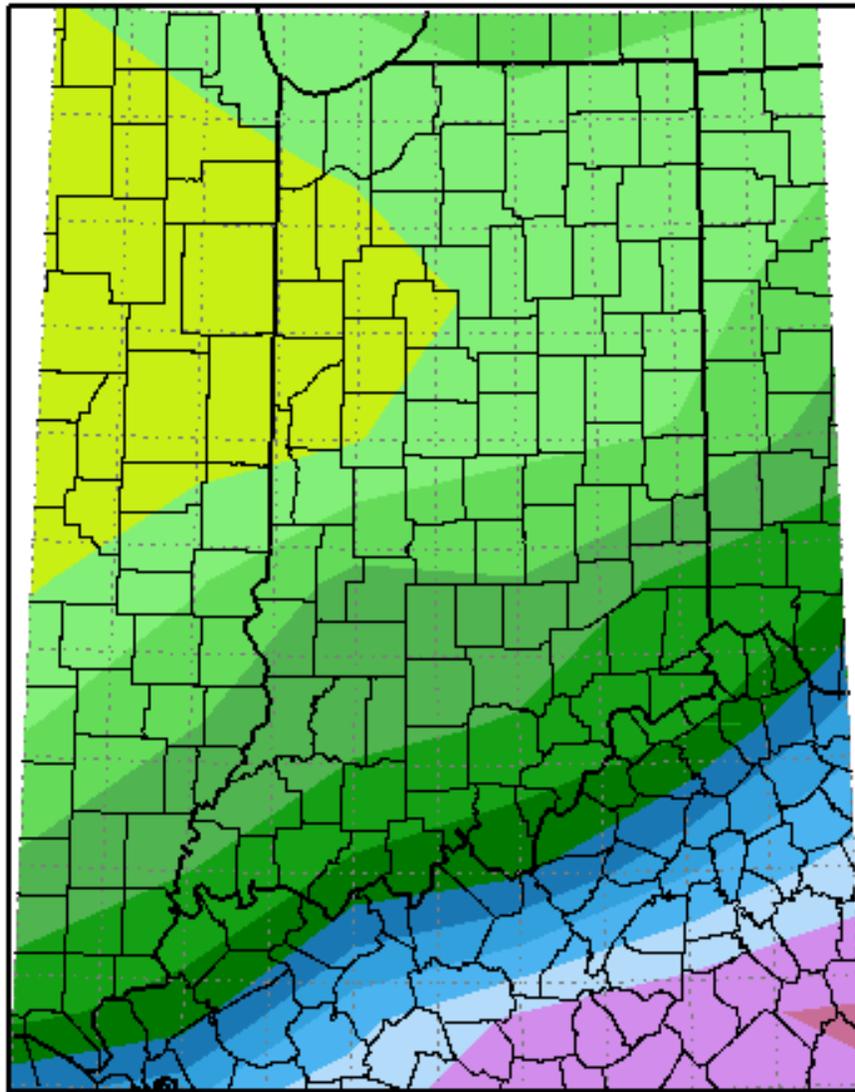
**Temperature**

<b>Region</b>	<b>Temperature</b>	<b>Normal</b>	<b>Deviation</b>
Northwest	17.2	23.0	-5.8
North Central	17.2	23.2	-6.0
Northeast	17.1	23.1	-6.0
West Central	20.7	25.1	-4.4
Central	21.2	25.3	-4.1
East Central	20.3	24.7	-4.4
Southwest	26.5	29.9	-3.4
South Central	25.4	29.9	-4.5
Southeast	24.9	29.1	-4.2
<b>State</b>	21.3	26.0	-4.7

**Precipitation**

<b>Region</b>	<b>Precipitation</b>	<b>Normal</b>	<b>Deviation</b>	<b>Percent of Normal</b>
Northwest	0.91	1.88	-0.97	48
North Central	1.18	2.05	-0.87	58
Northeast	1.30	1.98	-0.68	65
West Central	1.18	2.28	-1.10	52
Central	1.56	2.34	-0.78	67
East Central	1.50	2.29	-0.79	66
Southwest	2.47	3.00	-0.53	82
South Central	2.58	3.10	-0.52	83
Southeast	2.63	3.00	-0.37	88
<b>State</b>	1.69	2.44	-0.75	69

Total Precipitation in Inches  
January 1, 2009 to January 31, 2009

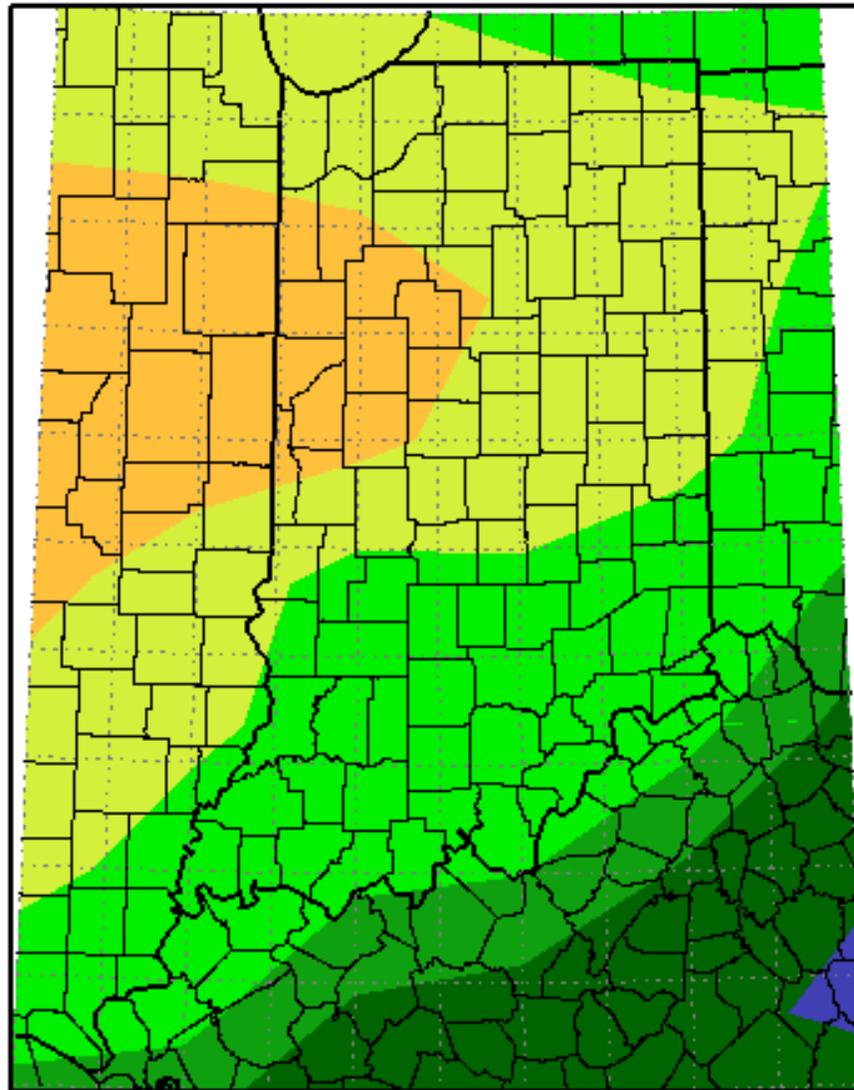


NOAA Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

Total Precipitation Percent of Mean  
January 1, 2009 to January 31, 2009

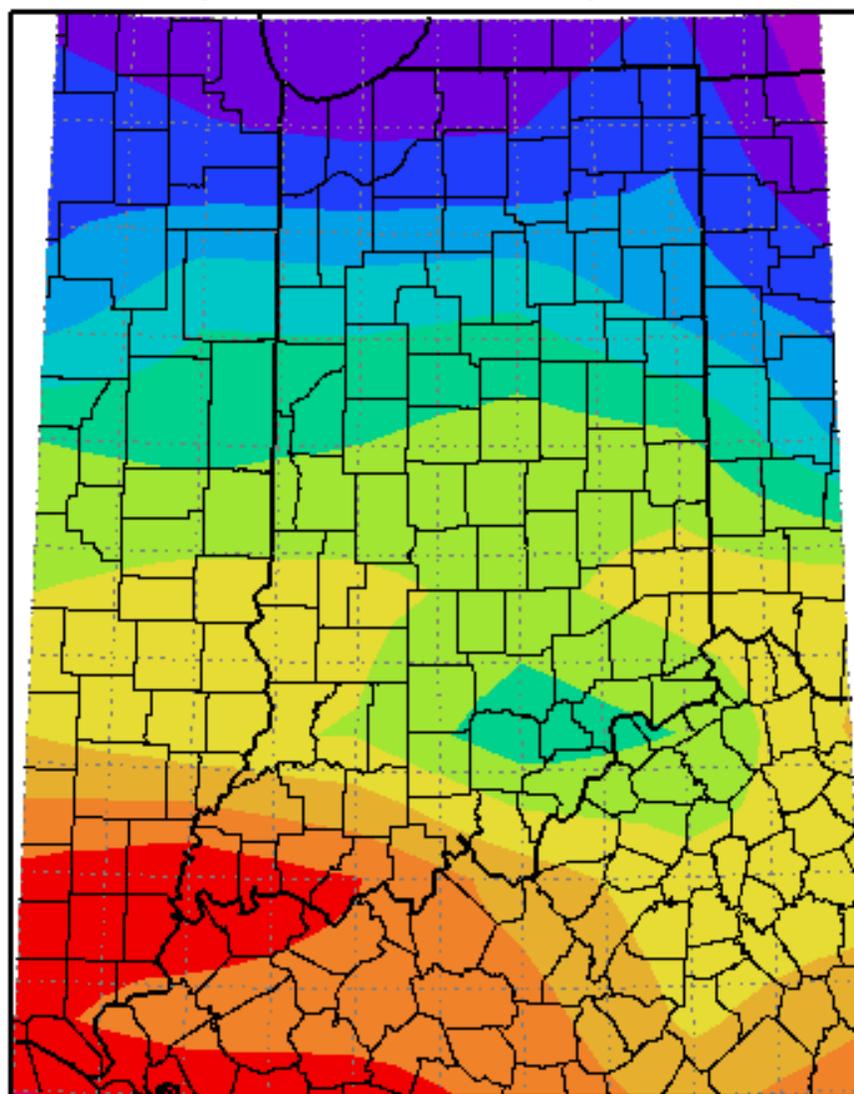


NOAA Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

Average Temperature Departure from Mean in Degrees F  
January 1, 2009 to January 31, 2009



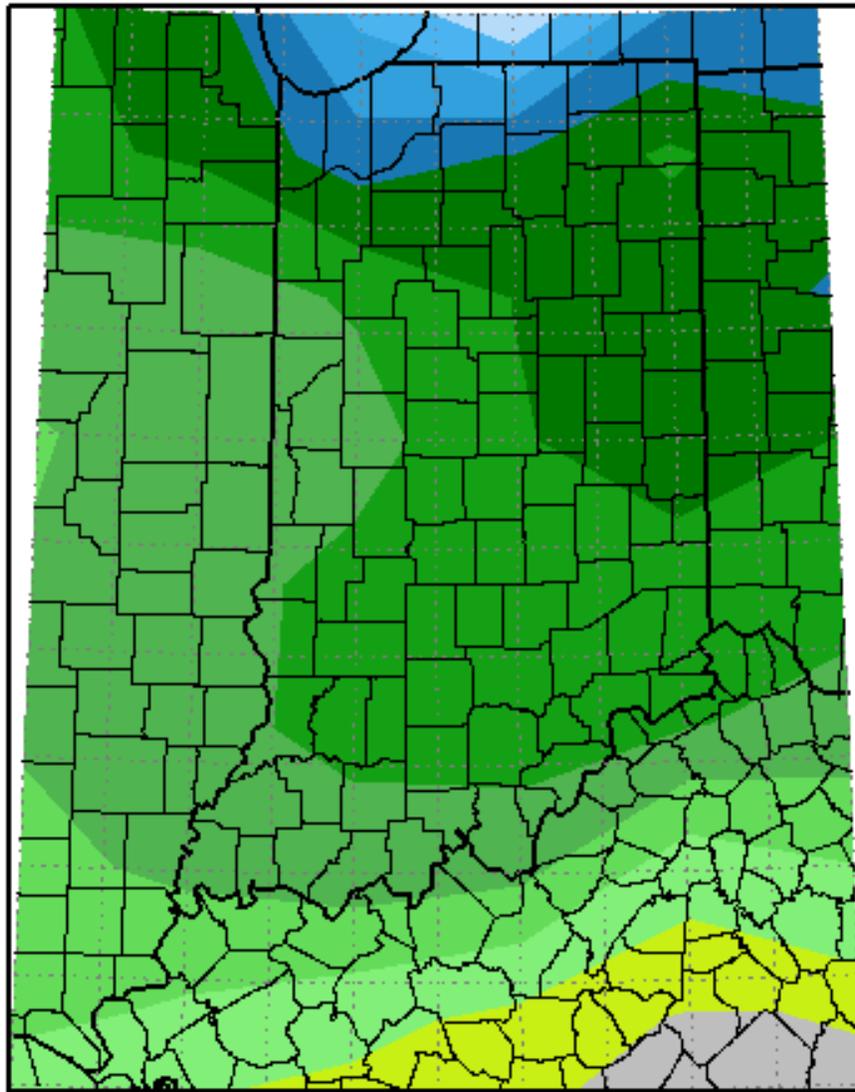
-7 -6.5 -6 -5.5 -5 -4.5 -4 -3.5 -3 -2.5 -2

NOAA Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

**Total Snowfall in Inches**  
**January 1, 2009 to January 31, 2009**



1.5 3 6 9 12 15 18 21 24 27

**NOAA** Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

## *Drought Summary from the U.S. Drought Monitor*

Below is a drought summary for the state of Indiana from the U.S. drought monitor. Areas in white are not experiencing any drought. Yellow areas are abnormally dry, but not entirely considered a drought. Drought begins when the moisture levels become more severe, with beige, orange, red, and brown indicating increasing levels of drought (moderate, severe, extreme, and exceptional, respectively). The table below indicates how much of the state is not under drought conditions, and also how much of the state is under drought conditions from its respective column upwards.

For example, January 6<sup>th</sup> has 99.58% of Indiana under no drought, and 0.42% of Indiana under at *least* D0 through D4 drought status. This is followed by 0.00% as D1 through D4 status. To obtain the amount that is D0 status, simply subtract the D1-D4 column from the D0-D4 column, thus giving you the percentage of area with abnormally dry conditions. Please note, however, that these areas are not exact, and much of this drought map has been created from reports throughout the state and estimation, so use this information as a general view rather than for specifics.

D0 Abnormally Dry
  D1 Drought - Moderate
  D2 Drought - Severe
  D3 Drought - Extreme
  D4 Drought - Exceptional

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
01/06/09	99.58	0.42	0.00	0.00	0.00	0.00
01/13/09	99.56	0.44	0.00	0.00	0.00	0.00
01/20/09	99.56	0.44	0.00	0.00	0.00	0.00
01/27/09	99.65	0.36	0.00	0.00	0.00	0.00

*January 6<sup>th</sup> Drought Summary*



*January 13<sup>th</sup> Drought Summary*



*January 20<sup>th</sup> Drought Summary*



*January 27<sup>th</sup> Drought Summary*

