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Indiana State Climate Office

Monthly Weather Report

May 1, 2009



<http://www.iclimat.org>

April 2009 Climate Summary

Summary

The fourth month of 2009 is over. What did April 2009 look, or rather, *feel* like? Well the month was inconsistent; cold, wet conditions became hot and dry overnight. A great example of this is what occurred in South Bend from April 21st through 24th. During those four days the city set a new daily snowfall record on the 21st. Just three days later they set a new daily record high temperature – of 85F! They went from some bitterly cold and snowy conditions to late summer heat in about 72 hours. So was the norm for Indiana during April. The state felt the wrath of approximately eight separate weather systems, all of which brought large amounts of precipitation. The longest period parts of the state went without any rain (or snow, in some cases) was four days (23rd through 26th), excluding counties around the Lake.

High temperatures jumped up and down and moved back and forth in accordance with each storm system. As the warm or cold fronts passed, temperatures adjusted accordingly. Average highs were as much as 17F below normal (April 14th) or 17F above normal (April 24th). In the end though everything balanced itself out. The monthly normal average temperature for April in Indiana is 51.4F. The average this April? 51.5F, just 0.1F above normal. The 51.5F monthly average temperature is tied with April 1908 as the 52nd warmest April in recorded history, which dates back to 1895 for the state. Last year, April 2008, was actually even warmer in Indiana, with a statewide average temperature of 52.3F (44th warmest).

There's a reason that people say "April showers bring May flowers". Precipitation was the definitely the theme for April. As I mentioned earlier, it was rare for a region to experience more than a day of dry weather; rain was always right around the corner. As a result, flooding was rampant. Flood watches and warnings were issued on at least three separate occasions for Indiana's major rivers. The statewide average for April is 5.66 inches, 1.73 inches above normal! That amount makes 2009 the 17th wettest April since 1895. Each of Indiana's nine climate divisions saw *at least* 116% of their normal monthly precipitation. The west central counties were the hardest hit. That area, especially along the Indiana-Illinois border, received approximately 6.79 inches which is 2.91 inches above normal. Looking back to 2008, the state received only 32.4 inches which is actually below the normal. We more than made up for it in 2009!

April 1st – 7th

Three separate systems had a hand in the weather during the first week of April 2009. After the passing of a strong synoptic system the last day of March, high temperatures sat around normal (approximately 59F) on April Fool's Day. On the 2nd another system was moving northeast out of Oklahoma and headed for Indiana. The warm front entered the state first, raising temperatures to more than 10F above normal. Early the next morning the remainder of the system passed. The cold front dropped highs back into the upper 40s on the 3rd. High pressure filled in behind the second system the following day, raising temperatures back to normal. The third disturbance sliced the state in half. The warm front progressed along a diagonal from the southwest corner of the state to the northeast, resulting in a huge temperature variation. Highs on the 5th were more than 8F below normal in the northwest but as much as 12F above normal in the southeast. The synoptic system passed through completely on the 6th, which dropped statewide high temperatures to the mid 40s on the 6th and 7th. The cold spell at the end of the week doomed the weekly average. The first seven days of April 2009 registered an average high of about 55F, 4F below normal.

It was an active first week of the fourth month of the year. Systems passed left and right, leaving behind rain and, yes, even some snow. Some showers lingered on the 1st thanks to the strong system that passed at the end of March. Precipitation totals were greater than 0.15 inches across the state. After a short reprieve on the morning of the 2nd, a moderate synoptic system dumped more moisture across Indiana that night and into the 3rd adding another 0.2 inches to the already damp and saturated ground. The 4th was the only quiet day the whole week. On the morning of the 5th the moisture returned. Rain fell across the central and southern counties throughout the day with some severe storms popping up along the Indiana-Ohio border in the evening. Up north some light snow fell with the heavy rains, adding another quarter of an inch to the annual total. Fort Wayne set a new daily precipitation record, registering 1.77 inches on the 5th, breaking the old record of 1.18 inches set in 1958. As temperatures dropped overnight more and more regions received snow. Light snow fell as far south as Crawfordsville, Rockport, and Newport. More than 1.5 inches fell along the Indiana-Michigan border on the 6th. More than 0.5 inches of rain fell in areas that didn't receive snow. Indianapolis received a new daily record of 1.87 inches on the 6th, besting the old mark of 1.63 inches set in 1965. The system fully departed in the late morning on the 7th but not before it dropped a few more sprinkles. Northern counties received over 2.5 inches of new snow this week. The entire state received a minimum of two inches of precipitation, with the interior counties accumulating upwards of three.

Winds associated with the strong storms that rushed through east central Indiana on the 5th caused some minor roof damages to buildings in Franklin County. Tornado warnings were issued in Wayne, Union, Randolph, and Fayette counties but no touch downs were confirmed. While the isolated severe storms raged, heavy rains fell in the north. Close to two inches of rain fell in Porter and LaPorte counties, causing some minor flooding. The large amount of rain forced Chesterton Utility to bypass sewage into the Little Calumet River on Sunday night. Stormwater has been infiltrating the sewer system causing a sewage overflow. The system had to be drained to prevent flooding into streets and neighborhoods. If that wasn't enough, the following day snow and ice fell across northern and central Indiana. Monday the 6th was the start of spring break for many school children. Instead of biking they were actually building

snowmen. Other than altering the plans of kids, the combination of snow and ice did bring down some weak tree limbs. Fortunately there were no reports of injuries or deaths from this particular winter redux.

April 8th – 14th

The end of the week chill that occurred on April 6th and 7th came to an end on the 8th, the start of week two. While high temperatures remained below normal they were significantly warmer than the previous two days. The warming continued into the 9th, with highs reaching the low 60s. That would be the last of the warmer days. Temperatures fell off again on the 10th and continued dropping through the 12th. The warm pool of a synoptic system passed over the southern portion of Indiana on the 13th, creating a large temperature difference across the state. Highs were nearly 20F below normal in the north while highs were about normal in the south. The southern counties felt the north' pain on the 14th as the cold front completed its pass, dropping highs from the mid 60s to the low 50s. It was a cold week in Indiana. The average high was 53F, about 7F below normal.

The week started off dry but it wouldn't stay like that for very long. Light showers brushed over the south as moisture associated with an approaching system passed on the evening of the 9th. Accumulations were minimal. The remainder of the system passed the rest of the state on the 10th, leaving behind rain totals of 1.2 inches in Knox County to 0.7 inches in Marion County to 0.3 inches in Tippecanoe County. Counties around the lake and bordering Michigan were dry. Moisture remained on the 11th. Light rain fell across the north with little accumulation. Elsewhere heavier rains left behind another 0.4 inches across much of the southeast during the day. A slight reprieve on the 12th brought about the first dry day since the 8th. A new synoptic system entered Indiana early on the 13th from 0.3-0.6 inches of rain along the Indiana-Illinois border. The rest of the state saw smaller amounts. The slow-moving system produced heavier rains on the final day of week two. New accumulations of 0.7 inches were recorded from Indianapolis to New Castle to Fort Wayne. All of the state received at least 0.2 inches of rain on the 14th. The weekly statewide average was 1.2 inches of rain, though northern counties received closer to 0.5 inches. Central and southern counties were hit the hardest with many counties receiving more than 1.8 inches. The weekly max was 2.3 inches in Knox County.

Even with what seemed like an endless stream of showers, no notable impacts were reported around the state besides minor flooding. Flood watches and warnings are prevalent around the Wabash and Kankakee rivers. Fortunately the water levels are not supposed to breach the "minor flood" designation in the coming days.

April 15th – 21st

Hoosiers were delighted to see week three come to an end. Rain was the theme once again and with it came cool temperatures. The cold front from the end of week two completed its path over Indiana on April 15th. Temperatures remained below normal during the day however they were warmer than the previous day, a sign of things to come. A high of 49F on the 15th became 64F on the 16th, normal for the middle of April. The warming, attributed to high pressure moving north out of the Gulf of Mexico, continued through the 18th. Abnormally warm weather sprang

up as a result of this, with high temperatures in the low to mid 70's across Indiana on the 17th and 18th. A swift reversal of conditions occurred in the early morning on the 19th as a slow moving system entered the region. High temperatures went from close to 10F above normal to 5F below normal within a day. They continued to fall on the 20th and 21st as the system became more organized and stronger. High temperatures dropped as low as the mid-40s on the 21st. The average statewide high temperature for the third week of April was about 61F, about 3F below normal.

The rain continued into week three thanks to the tail end of the front which brought significant rain on the 13th and 14th. The rain was lighter on the 15th but still produced trace amounts across the state with some accumulations reaching 0.3 inches along the Indiana-Ohio border. Luckily there was a lull from the 16th through 18th in which no significant precipitation was reported across the state. That ended on the 19th as a new system entered in the morning. The system was, at first, disorganized but really came together during the day and dropped considerable amounts of rain over the next 48 hours. Rain was spars in the northeast on the 19th but the rest of the state received 0.3 inches or more, with a daily maximum of 0.75 inches in Posey County. On the 20th rain became more widespread but uniform with a majority of Indiana receiving 0.4 inches of rain. The system broke up on the 21st but still produced scattered and intermittent showers and thunderstorms statewide. Some of the thundershowers produced a limited amount of small hail. Rainfall totals for the final day of week three were close to 0.15 inches. Much of the state received more than 1.10 inches of rain during the third week of April, with a majority of that coming over the final 48-60 hours.

Another week with more rain than sun couldn't create enough havoc to ruin anyone's day. There were no major impacts during the third week of April. Some minor flooding occurred along rivers in northern and central Indiana however they caused no significant damage or delays. Weather was not directly responsible for any death or destruction this past week.

April 22nd – 30th

Remnants of the synoptic system that passed on the 20th and 21st lingered into the 22nd, the fourth week of April 2009. As the system moved farther and farther south, temperatures rose. After dropping more than 15F below normal at the end of week three, high temperatures climbed back into the low 60s, about normal for this time of year. They held relatively steady on the 23rd before the passing of a warm front sent temperatures through the roof from the 24th through the 27th. During this four day period average high temperatures were in the low 80s, more than 15F above normal! South Bend tied their record high temperature for April 24th with a reading of 85F, first set in 1994. On April 25th Indianapolis set a new record high minimum temperature of 69F, besting the old record of 65F set in 1915 and tied in 1925. The National Weather Service also notes that the low of 69F ties the record high minimum temperature for the month of April in Indianapolis. It is just the 5th time in recorded history that the minimum daily temperature was 69F in April, with the last occurring April 6, 1929. Two days later, on April 27th, Indianapolis set another record high minimum temperature of 67F. The old record was 65F set in 1915. The unseasonable warmth left as quick as it arrived, however. On the 28th the passage of a large cold front - which stretched from Maine through Texas - brought temperatures to about 60F, slightly

below normal. High temperatures would remain in the upper 50s to low 60s the rest of the month. The nine day average high temperature was 74F, which is 7F above normal.

Residual rain from the exiting system was spread across Indiana on the 22nd. The intermittent showers resulted in accumulations under 0.15 inches. Much of the state was dry from the 23rd through 26th, save for the northwest counties. The warm front that passed, which brought unseasonably warm temperatures from the 24th through 27th, was connected to a larger system. The moisture missed most of Indiana however there was a bit each day around the Lake. Accumulations were less than one inch on the 24th and 25th but increased to about 0.3 inches on the 26th. Unfortunately for the rest of the state that system stalled and changed paths, swooping back to the south and producing rain for all of Indiana on the 27th. The showers were weak and unorganized and few registered more than 0.05 inches of new rain, though totals were larger around the Lake once again. The weak showers were replaced by heavy rains and torrential downpours on the 28th and 29th. Almost the entire state received at least 0.5 inches of rain over this two day period. The largest totals were recorded in Vigo, Sullivan, Clay, Greene, and Owen counties, which received over 1.5 inches. The rain continued on the final day of the month, adding another 0.2 inches to a drenched state. Lake, Vigo, and Sullivan counties received the most precipitation during the last nine days of April, accumulating at least 2.1 inches. The statewide average accumulation was about one inch.

The final nine days of April were much like the previous weeks – relatively calm. High winds and rain on Monday the 27th and Tuesday the 28th made high school and collegiate golfing tournaments delay play at times but otherwise the passing systems were just dreary nuisances. The heavy rain on the 28th caused lane closures along Interstate 80/94 for most of the day. No accidents were reported and the lanes were reopened by midnight. Minor flooding was prevalent from Anderson to Indianapolis as the White, East Fork, and Wabash rivers all overflowed as a result of the extended periods of rain, however no homes or land were harmed as of this writing.

April Summary

Temperature

Region	Temperature	Normal	Deviation
Northwest	48.7	49.5	-0.8
North Central	48.8	48.9	-0.1
Northeast	48.9	48.5	0.4
West Central	51.7	51.5	0.2
Central	51.2	50.9	0.3
East Central	50.6	49.9	0.7
Southwest	55.2	54.9	0.3
South Central	54.0	54.2	-0.2
Southeast	53.5	53.1	0.4
State	51.4	51.3	0.1

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	5.30	3.60	1.70	147
North Central	4.95	3.59	1.36	138
Northeast	4.85	3.47	1.38	140
West Central	6.79	3.88	2.91	175
Central	6.39	3.91	2.48	163
East Central	5.19	3.78	1.41	137
Southwest	6.69	4.45	2.24	150
South Central	5.88	4.42	1.46	133
Southeast	4.87	4.21	0.66	116
State	5.66	3.92	1.73	144

Spring-to-Date

(March & April)

Temperature

Region	Temperature	Normal	Deviation
Northwest	44.8	43.9	0.9
North Central	44.7	43.3	1.4
Northeast	44.4	42.8	1.6
West Central	47.9	46.0	1.9
Central	47.5	45.4	2.1
East Central	46.7	44.4	2.3
Southwest	51.5	49.7	1.8
South Central	50.2	49.1	1.1
Southeast	49.6	48.1	1.5
State	47.5	45.9	1.6

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	10.28	6.52	3.76	158
North Central	10.34	6.37	3.97	162
Northeast	10.36	6.18	4.18	168
West Central	9.26	7.23	2.03	128
Central	8.59	7.19	1.40	119
East Central	6.92	6.85	0.07	101
Southwest	9.31	8.68	0.63	107
South Central	8.50	8.59	-0.09	99
Southeast	6.97	8.16	-1.19	85
State	8.95	7.31	1.64	125

Annual-to-Date

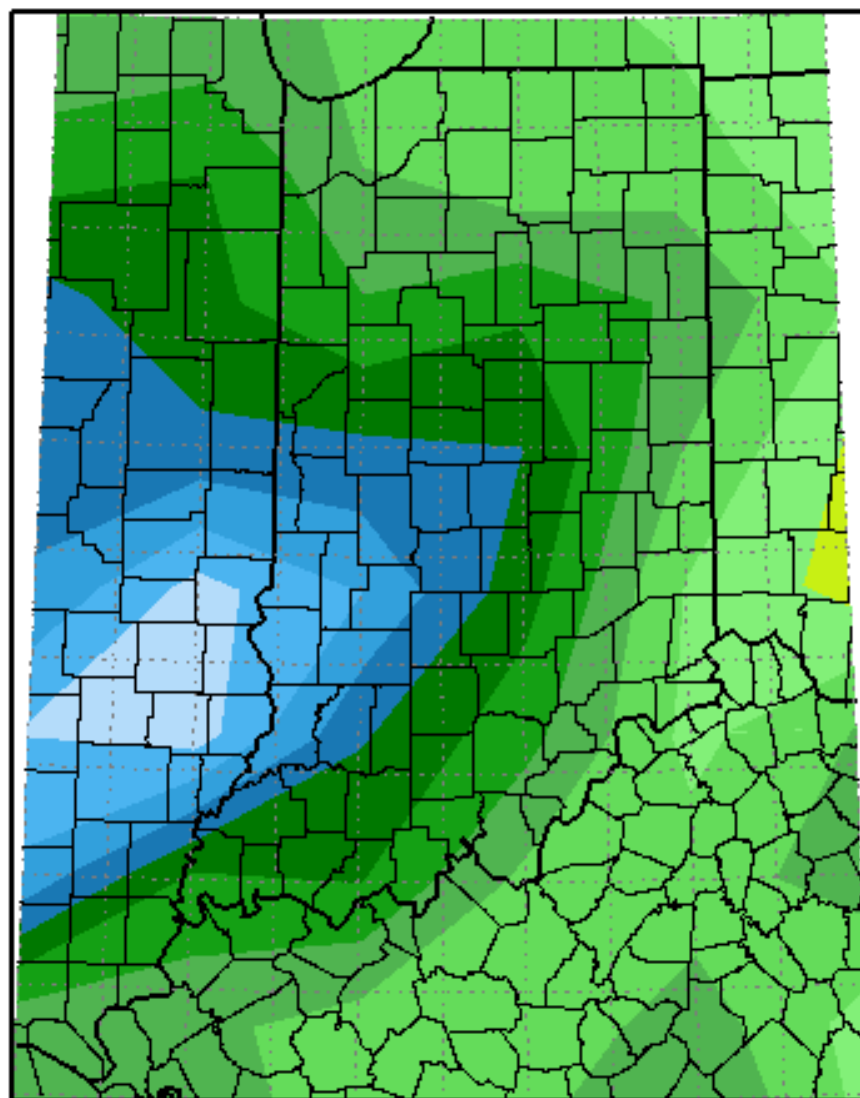
Temperature

Region	Temperature	Normal	Deviation
Northwest	33.9	34.7	-0.8
North Central	33.8	34.4	-0.6
Northeast	33.6	34.0	-0.4
West Central	37.0	36.9	0.1
Central	36.7	36.5	0.2
East Central	36.0	35.7	0.3
Southwest	41.3	41.1	0.2
South Central	40.1	40.7	-0.6
Southeast	39.5	39.8	-0.3
State	36.9	37.1	-0.2

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	14.40	10.08	4.32	143
North Central	14.67	10.21	4.46	144
Northeast	14.62	9.95	4.67	147
West Central	13.64	11.68	1.96	117
Central	12.69	11.80	0.89	108
East Central	10.36	11.29	-0.93	92
Southwest	14.62	14.55	0.07	100
South Central	13.60	14.61	-1.01	93
Southeast	11.92	13.96	-2.04	85
State	13.39	12.01	1.38	114

Total Precipitation in Inches
April 1, 2009 to April 30, 2009

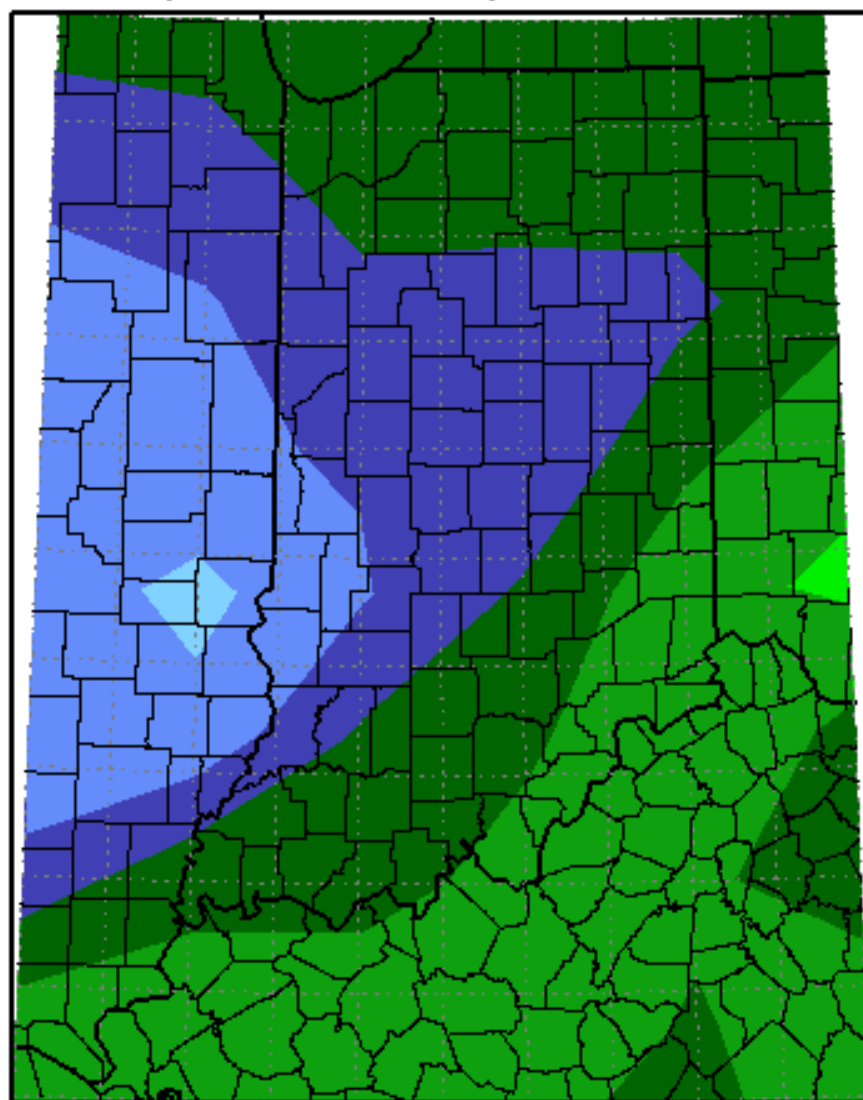


NOAA Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

Total Precipitation Percent of Mean
April 1, 2009 to April 30, 2009

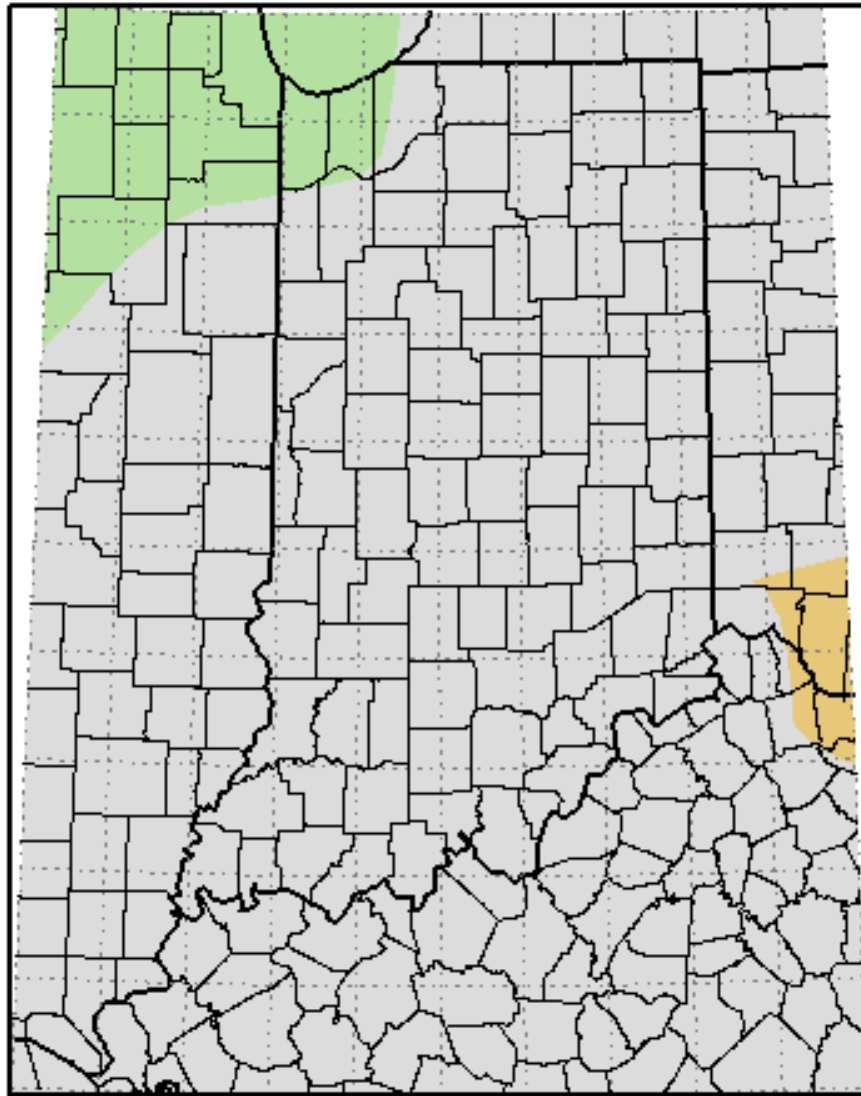


NOAA Midwestern Regional Climate Center

Illinois State Water Survey

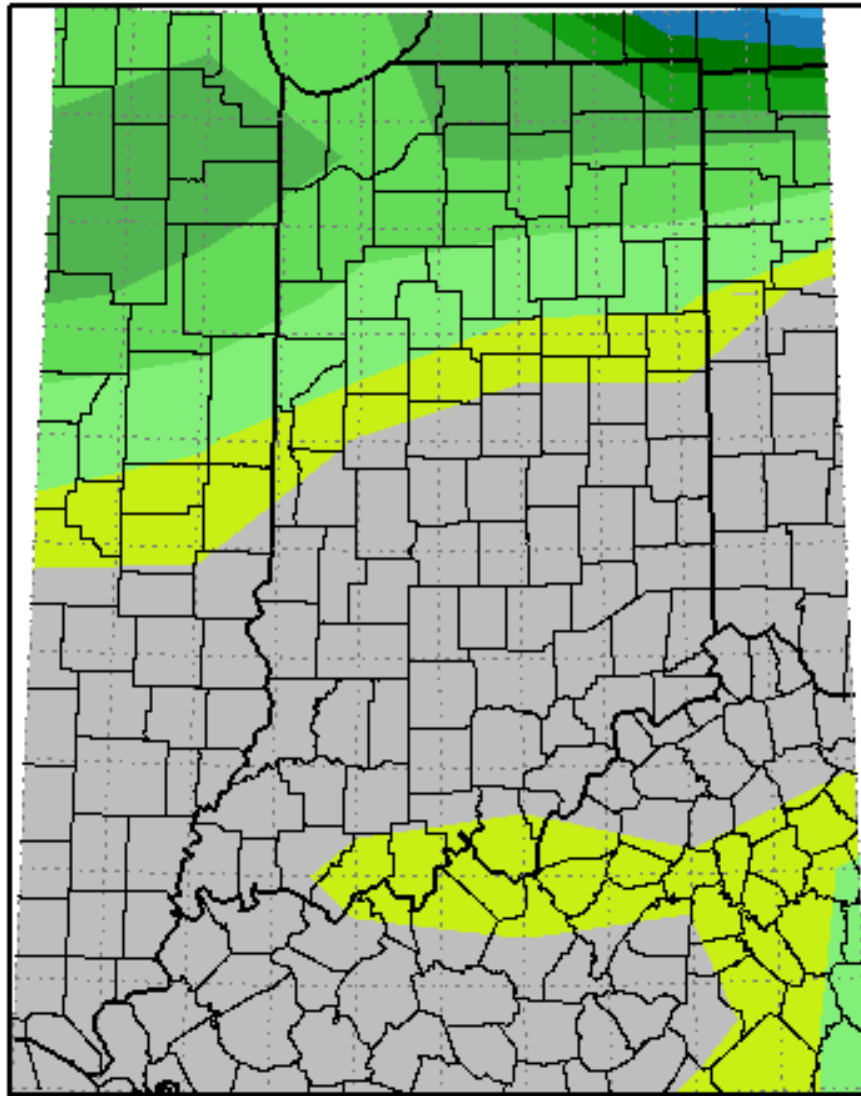
Champaign, Illinois

Average Temperature Departure from Mean in Degrees F
April 1, 2009 to April 30, 2009



NOAA Midwestern Regional Climate Center
Illinois State Water Survey
Champaign, Illinois

Total Snowfall in Inches
April 1, 2009 to April 30, 2009



0.25 0.5 1 1.5 2 2.5 3 3.5

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, April 7th has 100% of Indiana under no drought, and 0.00% 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
04/07/09	100.00	0.00	0.00	0.00	0.00	0.00
04/14/09	100.00	0.00	0.00	0.00	0.00	0.00
04/21/09	100.00	0.00	0.00	0.00	0.00	0.00
04/28/09	100.00	0.00	0.00	0.00	0.00	0.00

April 7th Drought Summary



April 14th Drought Summary



April 21st Drought Summary



April 28th Drought Summary

