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Indiana State Climate Office

Monthly Weather Report

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<http://www.iclimat.e.org>

February 2010 Climate Summary

Summary

Some residents will call it an old fashioned Indiana winter, but whatever its name, February 2010 will be remembered for its persistent cold and abundance of snowfall and snowy days. Nearly 30 inches of snow fell this month at opposite ends of the state: where it is expected in the northwest lake effect region (Hobart, 29.8 inches), and in the far southeast where it isn't (Osgood, 28.5 inches and Lawrenceburg, 26.2 inches)! Three major snow storms with different paths, on February 5th over east central Indiana, in the far north on February 9th, and across the southeast on February 15th, spread the white stuff all around the state. A monstrous New England storm late in the month spawned lake effect snows over northern Indiana on several more days. Fortunately Indiana has been lightly brushed and spared this winter from huge Atlantic coastal storms which have dumped tons of snow on eastern states.

February was certainly another cold month. Of its 28 days, on only six days was the Indiana state averaged temperature above normal. The statewide average February temperature was 25.4°, which is 5.0° below normal. This ranks the month as the 27th coldest February on record in Indiana since 1895. The most recent colder February was three years ago when February 2007 averaged 20.4°, the 5th coldest on record. Other recent cold Februaries have occurred in 1985 (20th coldest) and 1980 (16th coldest). The coldest February on record in Indiana was in 1978 with a state average temperature of just 16.1°.

Precipitation includes the melted water equivalent of snowfall and other solid forms, summed with rainfall. The heavy but fluffy snowfalls of February yielded precipitation totals that were below normal. Statewide precipitation for the month averaged just 1.54 inch which is 0.73 inch below normal, that is, two thirds the typical February amount of 2.28 inches. By region northern Indiana precipitation averaged nearly 1.40 inch, central Indiana 1.45 inch, and about 1.80 inch in southern Indiana. February 2010 enters the Indiana climate record books as the 30th driest February since 1895. The most recent February that was drier occurred in 2004 with total precipitation of just 0.93 inch (11th driest). Other recent dry Februaries include 1992 and 1994, 1995, and 1996. The driest February on record was in 1947 with a state average 0.34 inch of precipitation.

The major impact of February weather was poor travel conditions in the areas where each storm was centered. A fatal accident was reported near Economy in Wayne county in the February 5th snow storm. Multiple vehicle collisions and slide offs were typical problems due to poor visibility in blowing snow and ice covered roads. In northeast Indiana 2,000 homes lost power in the

February 9th storm while travel was very difficult in Ohio River counties during the February 15th snow storm.

February 1st – 7th

A major snowstorm on February 5th was the weather highlight of the week. A now familiar mechanism in the upper atmosphere that has produced strong snowstorms and blizzards across the eastern half of the nation this winter was at it again. A strong Aleutian Low, the semi-permanent low pressure center located near the island chain along the south edge of Alaska, extended a large pulse of low pressure all the way to Baja California, Mexico. This southern trough area becomes a breeding ground for super storms which travel eastward along the Gulf Coast states and tap into the huge Gulf moisture source. This moisture is transported north and can become heavy snow in Indiana.

Warm air in advance of the snow storm was already at work lifting Indiana temperatures higher each day since the week began. A cold spell ended along with January as temperatures nudged upward each day. By February 5th daily statewide average temperatures had reached 5° above normal. Colder air returned to Indiana behind the snow storm and statewide average temperatures fell to 5° below normal by the end of the week. The warm up and cool down this week were nearly equal in duration and intensity and balanced out to normal. Normally for this first week of February long term daily maximum temperatures range from 31° in far northern Indiana to about 35° in central sections and 40° in southern Indiana. Daily minimums typically vary from 16° in the north to 18° in central and to around 22° in the southern reaches of Indiana.

The February 5th snowstorm generated weekly snow totals of 1 to 3 inches in counties near Lake Michigan. Away from the lake in northern Indiana snow amounts ranged from almost none at all to about 6 inches. East central Indiana was in the direct path of the snow storm and received the heaviest amounts recorded in the state. Overall in central Indiana weekly snowfall totals ranged from 5 inches in western counties to 9 inches in the east. Southern Indiana snowfall was similar to the north, receiving up to 6 inches for the week. The water equivalent of all this snow ranged from about 0.20 inch in northern Indiana to a half inch in central and 0.85 inch in the south. Normally this week Indiana would receive about 0.35 inch of precipitation in the north, 0.55 inch in central, and 0.70 inch across the south.

The snow storm resulted in many traffic accidents. A fatal accident was reported in Wayne county near the town of Economy. The majority of accidents occurred in Delaware and Henry counties of east central Indiana. Multiple slide offs and crashes with minor personal injuries were common on Interstates 69 and 70 in this region. Poor visibility due to blowing snow across highways was a contributing factor in these accidents.

February 8th – 14th

Another week and another snowstorm! Just four days after a significant storm dumped up to 9 inches of snow on east central Indiana, another major snow storm tracked across Indiana on February 9th. As this storm intensified and moved east of Indiana, cold air poured in behind it. Temperatures across our state trended downward as the week progressed. State averaged

temperatures began the week 5° below normal but slid to 10° below normal by February 12th and stayed there. Overall for the week statewide temperatures averaged 8° below normal. Typically one would expect daily maximum temperatures to range from 33° in far northern Indiana to 37° in central and 42° in southern Indiana this second week of February. Daily minimums should vary from about 16° in the north to 19° in central sections to 23° in the extreme south.

A very active southern jet stream this winter has repeatedly served up huge snow storms, exploding in intensity as they travel eastward from Indiana to the Atlantic coast. The February 9th storm tracked further north than last week's storm, dumping the heaviest snow in our northernmost counties. Valparaiso reported the largest daily total at 10.1 inches on the morning of February 10th with Angola right behind at 9.5 inches. After February 9th it was nearly dry the remainder of the week in Indiana. Total snowfall for the week ranged from 8 to 13 inches in the Lake Michigan snow belt. Elsewhere in northern Indiana weekly totals ranged from 4 to 8 inches. Snow totals diminished southward away from the storm track. In central Indiana 3 to 5 inches was reported while 2 to 4 inches was common in southern counties. The water equivalent of this week's snowfall averaged about 0.35 inch in northern Indiana, a quarter inch in central, and around 0.30 inch in the south. These precipitation amounts are about two thirds of normal. Normal precipitation this week is a third of an inch in northern Indiana, about 0.40 inch in central, and nearly 0.65 inch in southern areas.

As expected road conditions were difficult during the February 9th storm. A tandem semi overturned on northbound Interstate 65 near Indiana 25 in Tippecanoe county in the early morning hours. There were no reports of injuries in the crash.

In northeast Indiana travel was difficult in Adams, Huntington, and Wells counties. Police departments throughout the region received reports of vehicle slide-offs and crashes as roads became icy. In Fort Wayne, nearly 2,000 customers lost electricity, possibly because of an electrical pole fire on the city's northeast side, according to city dispatchers and Indiana Michigan Power.

February 15th – 21st

The next "snowstorm of the week" aimed its fury at southeast Indiana. Six days had passed since up to 10 inches of snow was dumped on the northern tier of Indiana counties on February 9th. That event came four days after places in east central Indiana received 9 inches of the white stuff on February 5th. Will there be yet another heavy snow next week?

A triplet chain of low pressure systems in the upper atmosphere stretching from far eastern Canada to Indiana was reluctant to leave and kept our weather snowy and cold. Below normal temperatures which have dominated our state since February 7th continued nearly all this week. As the storm system which brought the heavy snow at the start of this week moved off the Atlantic coast, Indiana state averaged temperatures climbed from 12° below normal on February 15th to 5° below normal by the middle of this week. The movement of the Atlantic storm stalled and along with high pressure then over Indiana, temperatures fell back to 9° below normal the next day. At the end of the week a new storm off the Great Plains broke through the narrow high pressure ridge. This storm was warmer than previous storms and spread a mix of rain and snow across Indiana. The string of

below normal temperature days was broken as the week ended with a state averaged temperature at 1° above normal. Overall for the week temperatures averaged 6° below normal. At this point in February daily maximum temperatures should range from 38° in far northern Indiana to 43° in central and 48° in extreme southern Indiana. Daily minimums should vary from 24° in the north to 26° in central and 30° in southern Indiana.

The path of the snowstorm at the start of this week was further south than previous storms. The heaviest snow fell in southeast Indiana, including 10 inches for the day measured at Hanover in Jefferson county on the morning of February 16th. Other snowfall totals ranged from 4 to 14 inches across the southern third of Indiana, 1 to 11 inches across central sections, and none to 3 inches throughout the north and lake regions. The eastern parts of central and southern Indiana recorded the heavier snowfall amounts in response to the storm path. Other than two dry days in mid-week precipitation was reported each day as moisture wrapped around the Atlantic storm back into Indiana. For the week precipitation totaled about 0.10 inch in northern Indiana, 0.30 in central, and a half inch across the south. Normally around 0.40 inch is expected in the north, 0.45 inch in central, and 0.65 inch in southern Indiana this week of February.

Travel in the February 15th snow storm was most difficult in the southern tier of counties all along the Ohio River. In Evansville a semi tractor trailer slid off I-164 early Monday morning. Recommended maximum travel speeds on southern Indiana interstates was 30 mph. Further north Bloomington residents were under a yellow travel advisory with extended travel times required between cities in that area.

February 22nd – 28th

Winter weary Indiana residents endured yet another week of winter weather and cold. Temperatures remained below normal all seven days. State averaged temperatures fell from 3° below normal on February 22nd to 11° below normal two days later in colder air behind a low pressure system. It wasn't much warmer the next few days as temperatures persisted at 8° below normal. The week closed with state average temperatures at 2° below normal. Overall for the week average temperatures were about 6° below normal. The final week of February should see daily maximum temperatures between 40° in far northern Indiana to 45° in central and 51° in the extreme south. Daily minimums should range from 25° in the north to 28° in central and 32° in the far southwest.

A moderate storm visited Indiana at the start of this week, but it was a distant monstrous New England storm at the end of the month that gave us the heavier snow. At one point the intense storm stalled, then reversed its path and returned to New York state. Moisture wrapped around this storm carried far to the west and then south across Lake Michigan. This wind pattern also generated lake effect snows over northern Indiana. Chesterton in Porter county reported a one day snowfall of 18 inches on the morning of February 27th. Weekly snowfall totals elsewhere in the lake effect region generally ranged from 6 to 11 inches. In the rest of northern Indiana week totals between 2 and 6 inches were common. Much less snow fell in central and southern Indiana. About 1 to 4 inches was reported in central Indiana this week while up to an inch was reported in the south. The water equivalent of northern Indiana snow totaled near 0.70 inch for the week. Rainfall in central Indiana measured around 0.40 inch while southern Indiana precipitation accumulated to

about 0.15 inch. Normally one would expect about 0.55 inch of precipitation in northern Indiana, .70 inch in central, and 0.80 inch in southern Indiana this final week of the month.

February Summary

Temperature

Region	Temperature	Normal	Deviation
Northwest	24.4	27.7	-3.3
North Central	24.8	27.3	-2.5
Northeast	24.9	26.8	-1.8
West Central	24.4	30.0	-5.6
Central	24.1	29.7	-5.6
East Central	23.8	28.7	-4.9
Southwest	28.3	34.7	-6.4
South Central	27.3	34.5	-7.2
Southeast	26.5	33.4	-6.9
State	25.4	30.4	-5.0

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	1.40	1.68	-0.28	83
North Central	1.40	1.79	-0.40	78
Northeast	1.35	1.78	-0.43	76
West Central	1.30	2.16	-0.86	60
Central	1.55	2.27	-0.71	69
East Central	1.51	2.15	-0.63	70
Southwest	1.70	2.88	-1.17	59
South Central	1.75	2.92	-1.17	60
Southeast	2.00	2.80	-0.81	71
State	1.54	2.28	-0.73	68

Winter (December - February)

Temperature

Region	Temperature	Normal	Deviation
Northwest	24.4	26.4	-2.0
North Central	24.9	26.4	-1.5
Northeast	25.1	26.2	-1.1
West Central	25.4	28.5	-3.1
Central	25.7	28.5	-2.8
East Central	25.4	27.8	-2.4
Southwest	29.5	33.0	-3.5
South Central	28.7	32.9	-4.2
Southeast	28.3	32.1	-3.8
State	26.4	29.1	-2.7

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	5.37	6.21	-0.85	86
North Central	5.46	6.63	-1.18	82
Northeast	5.29	6.45	-1.16	82
West Central	6.30	7.41	-1.11	85
Central	6.39	7.60	-1.21	84
East Central	5.86	7.31	-1.45	80
Southwest	7.83	9.41	-1.57	83
South Central	7.21	9.58	-2.37	75
Southeast	7.19	9.22	-2.02	78
State	6.37	7.77	-1.40	82

2010 Annual to date

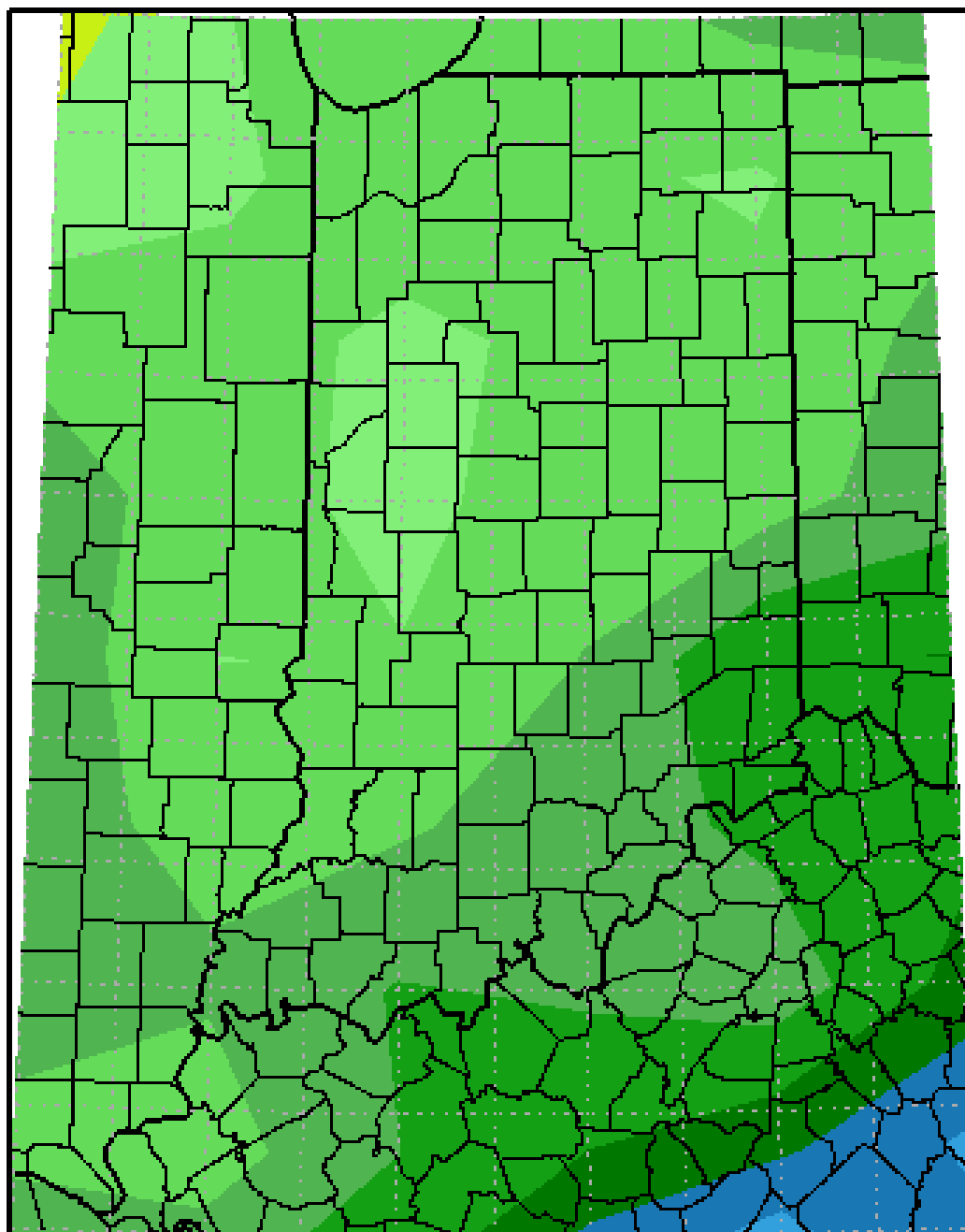
Temperature

Region	Temperature	Normal	Deviation
Northwest	22.7	25.3	-2.6
North Central	23.3	25.1	-1.9
Northeast	23.6	24.9	-1.3
West Central	23.2	27.4	-4.2
Central	23.5	27.4	-3.9
East Central	23.2	26.6	-3.4
Southwest	27.5	32.2	-4.7
South Central	26.8	32.1	-5.3
Southeast	26.4	31.2	-4.8
State	24.5	28.1	-3.6

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	2.62	3.56	-0.93	74
North Central	2.63	3.84	-1.21	68
Northeast	2.22	3.77	-1.55	59
West Central	2.64	4.44	-1.81	59
Central	2.99	4.61	-1.62	65
East Central	2.90	4.44	-1.54	65
Southwest	3.73	5.88	-2.15	63
South Central	3.93	6.02	-2.09	65
Southeast	4.01	5.81	-1.79	69
State	3.07	4.71	-1.64	65

**Total Precipitation in Inches
February 1, 2010 to February 28, 2010**

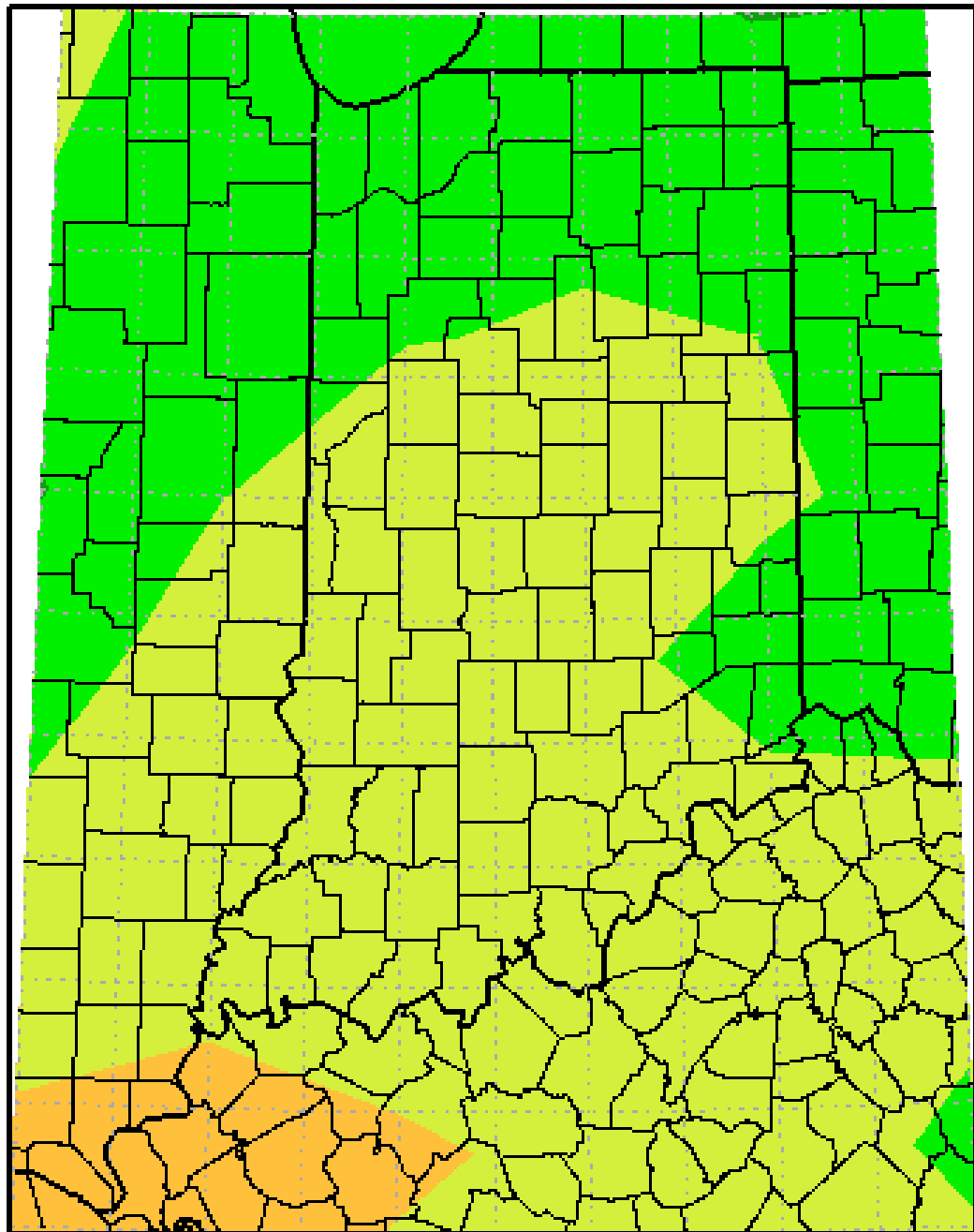


NOAA Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

Total Precipitation Percent of Mean February 1, 2010 to February 28, 2010

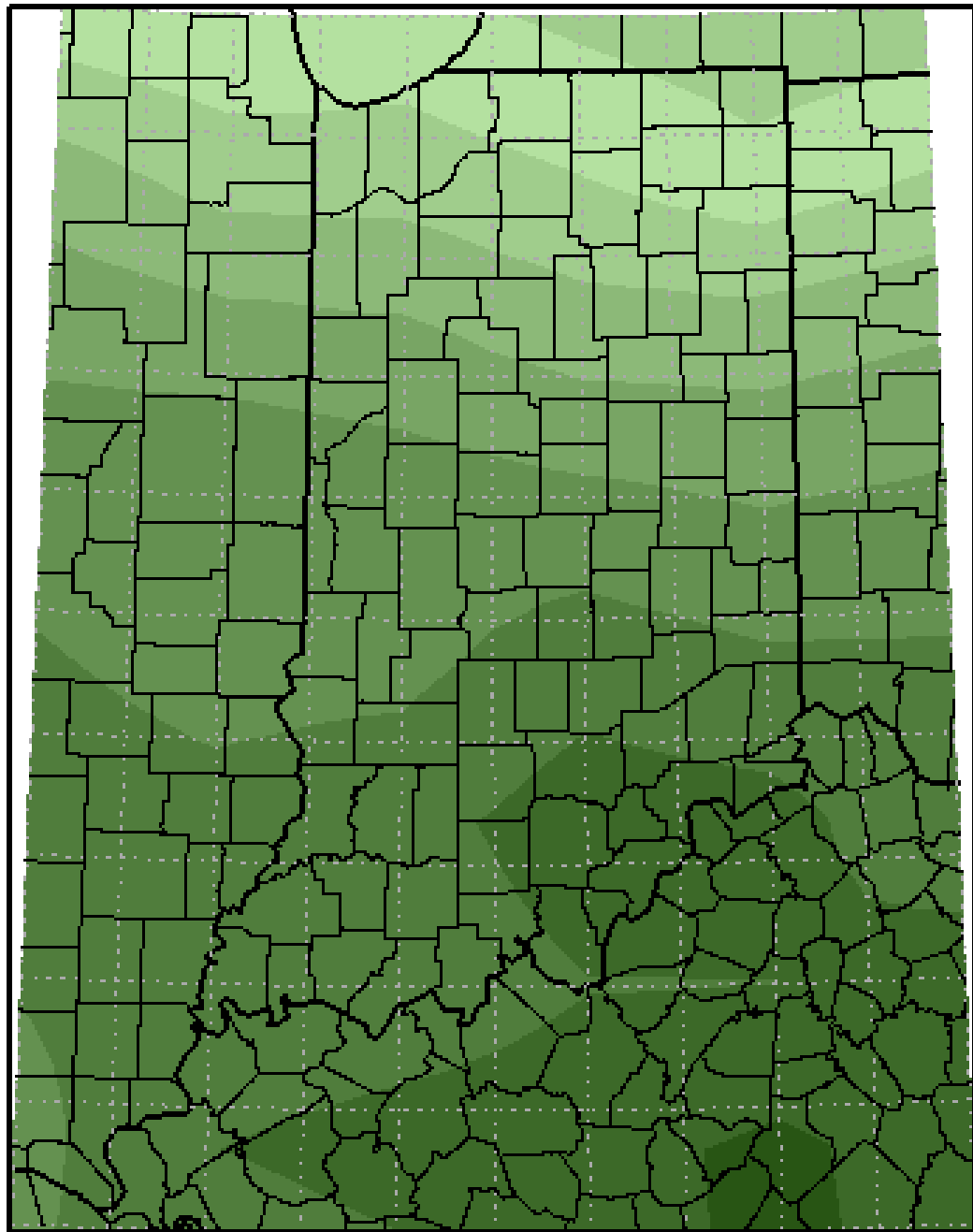


NOAA Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

Average Temperature Departure from Mean in Degrees F
February 1, 2010 to February 28, 2010



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, February 2nd has 100.0% of Indiana under no drought, and 0.0% of Indiana under at *least* D0 through D4 drought status. This is followed by 0.0% 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 (0.0%). 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.

Intensity:

- 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
03/02/10	100.00	0.00	0.00	0.00	0.00	0.00
02/23/10	100.00	0.00	0.00	0.00	0.00	0.00
02/16/10	100.00	0.00	0.00	0.00	0.00	0.00
02/09/10	100.00	0.00	0.00	0.00	0.00	0.00
02/02/10	100.00	0.00	0.00	0.00	0.00	0.00

February 2nd Drought Summary



February 9th Drought Summary



February 16th Drought Summary



February 23rd Drought Summary



March 2nd Drought Summary

