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and
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Indiana State Climate Office

Monthly Weather Report

May 7, 2012



<http://www.iclimate.org>

April 2012 Climate Summary

Month Summary

In this Indiana spring that seems backwards April 2012 will be noted for its much cooler temperatures, hard freezes, less rainfall, and near absence of severe weather when compared to the previous month. Tornadoes occurred in Indiana in each of January, February, and March this year but none in the usual severe weather month of April. The phrase heard around town is “calendar confusion”.

The state average April temperature was 53.0°F, above the month normal by 1.7°F. April was above normal in temperature yet was colder than March! This feat is quite rare and happened last in 1907. Since the start of state records in 1895, April 2012 ranks as the 35th warmest April in the record books. The most recent April which was warmer than this year was the 57.3°F state average in 2010, the 2nd warmest April on record. Some other recent warm Aprils were a 55.9°F average in 2006, good for 10th warmest. The year before that a 54.3°F reading ranked April 2005 as 18th warmest. April 2012 extends the warm trend to six consecutive months with an above normal monthly average temperature in Indiana.

The day split for April 2012 is much more balanced than was March. In April there were 11 days of below normal temperatures, 2 days at normal, and 17 days with above normal temperature. On 6 days the daily mean temperature was at least 10°F above normal. No days were at least 10°F below normal. The highest local daily temperature at a cooperative station was 89°F recorded on April 2nd at Myers Bridge near Hovey Lake. The coolest daily minimum temperature noted was 18°F at Wanatah on April 12th. A string of 35 consecutive days with above normal temperatures finally ended with freeze events in the middle of April.

The state precipitation total of 2.32 inches, about 60% of normal, ranks as the 19th driest April on record and the third consecutive month with below normal precipitation in Indiana this year. Regionally about 45% of normal April precipitation fell in northern Indiana this month, while central Indiana measured about 60% of normal, and 70% of normal fell across southern Indiana. Some recent drier April months were a 1.83 inch amount in 2004 in 10th place and a 2.18 inch total in 1997, which ranks in 16th place. The driest April on record in Indiana occurred in 1962 with 1.23 inch. The highest single day precipitation amount this month was 2.66 inches measured at the cooperative station in Elnora on April 14th. The largest single day CoCoRaHS network amount was 2.23 inches which fell on April 30th at Kentland. Generally precipitation fell on about 13 days around Indiana this month.

The weather threat of April was not tornadoes but three consecutive nights of hard freezes on April 11th through 13th. In northern Indiana temperatures in the mid-20s were widespread and caused significant damage to the apple and blueberry crops. In southern Indiana freeze damage occurred to early planted corn that generally had advanced to the 3rd leaf stage or beyond. Details on the impacts of these freeze events on these Indiana fruit and agricultural crops are found in the weekly narratives below.

The lack of April rainfall combined with low humidity in this same week increased the threat of wildfires. Fire departments across the state fought more than the usual number of urban building and rural brush fires. In one case a freight train set off several brush fires along miles of its route as its wheels sent sparks into dry brush.

Areas of abnormally dry soil conditions developed this month, first in southwest Indiana and late in the month in northwest Indiana. None of these dry areas were classified beyond this initial D0 category according to the US Drought Monitor.

Tornadoes were absent but thunderstorms near the end of April did produce hail and wind damage across the state on April 25th, 28th, and 30th. The most serious of these events was April 28th when 2.75 inch diameter hail damaged cars and broke windshields in southwest Indiana. Trees falling on power lines causing power outages were the most common complaint in these areas. Details on each event is found in the weekly narratives below. No injuries or deaths were reported in any of the Indiana severe weather events noted this month.

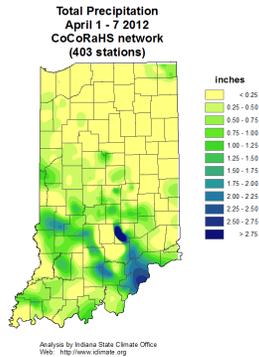
April 1st – 7th

An extended run of above normal daily temperatures – now more than 30 days long - persisted into this new month. April opened where March left off with a temperature departure at 12°F above normal. Two days later the warmth peaked for the week at 17°F above normal. Then a cool down, but not cold weather, set in as temperatures slid each day from a surplus of 12°F, then 5°F, and then to 2°F above normal by April 6th. The week closed at 3°F above normal. For the week this averages to about 9°F above normal. Usually at the start of April the daily state maximum temperature would range from 55°F in northern Indiana to 64°F in the far southwest. Normal daily minimums typically vary between 35°F and 41°F north to south across the state.

Rainfall this week favored southern Indiana with gradually lighter amounts trending northward. About a third of an inch fell in the south to less than a tenth inch across the north during the early week warm surge. A front along the Ohio River meandered short distances north and south while morphing at times between warm, stationary, and cold front status through April 4th. Finally a strong high pressure center near Hudson Bay forced this front southward to the Gulf of Mexico. As cooler air moved in to Indiana by April 5th a second rain event added about a half inch of moisture to the south but less than a tenth inch in northern and central sections. The weekly total ranged from near 0.9 inch in southern Indiana to 0.3 inch in central and just 0.1 inch across the north. In another view about 90% of the normal amount of rain fell in southern Indiana, while central sections received near 35% of normal, but just 15% of normal rain fell in the north. There exists the usual isolated heavier spots of rainfall as expected. On April 1st the CoCoRaHS observers in Clay City and Jeffersonville each measured 1.22 inch. Another round of storms early on April 5th left the Hanover volunteer with 1.56 inch while Bloomington recorded 1.53 inch. The heaviest weekly

totals included 2.04 inches at Hanover, 1.99 inch in Jeffersonville and Clay City, and 1.96 inch in Bloomington. A map depicting the rainfall pattern across Indiana this week is found just below.

The state has received below normal precipitation since February and that impact is starting to show on Indiana soils. The April 3rd edition of the U.S. Drought Monitor indicates about 11% of the total Indiana land area is now classified as abnormally dry (D0 category). This drier area is roughly south of a line from Vincennes to New Albany, that is, it includes the counties of far southwest Indiana.



April 8th – 14th

Finally the long warm spell has ended. A string of 35 consecutive days with above normal daily temperatures came to a close with below normal temperatures in mid-week. Three nights of hard freeze damaged some of Indiana's fruit and early planted corn.

The week began with daily state temperatures 4°F above normal, then peaking at 7°F above normal the next day in advance of the only front to pass through the state this week. A large high pressure center behind this cold front lumbered in from Canada, drawing in much cooler weather with low humidity between April 10th and 13th. During the cool down temperatures plummeted into the range of 6°F to 8°F below normal. As the slow moving high center moved east of Indiana temperatures recovered a bit to end the week at 2°F above normal. Overall for the week state temperatures averaged about 1°F below normal. Typically this second week of April daily maximum temperatures should vary between 58°F in far northern counties to 66°F in the far southwest. Daily minimums normally range between 37°F and 43°F north to south across the state.

The cold front early this week was mostly dry and produced very little rainfall in Indiana. The only significant rain came at the end of the week as warmer air in southern states ran over the top of cold air in place at our ground level. Light showers averaged less than a tenth inch in northern Indiana this week, and about a quarter inch in central and southern areas of the state. These amounts are just 5% of normal in our northern counties and less than 25% of normal elsewhere across the state. The heaviest rainfall of the week was recorded by the CoCoRaHS observer in Lawrenceburg with

1.31 inch. Some other reports included 1.11 inch at Castleton and 0.84 inch in Columbus, rather small considering these are the heaviest totals in the state this week!

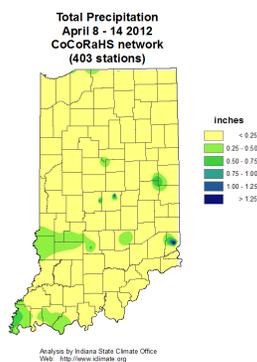
Rainfall has been below normal for about the past 3 weeks. Meanwhile vegetation has grown far faster than its normal pace due to the very warm March weather. Along with windy conditions and low humidity the recipe is right for the rapid growth of wildfires. Red flag warnings for fire danger were posted by the National Weather Service this week. Indeed fire departments across Indiana have fought more than the usual number of building fires in urban areas and brush fires in the rural countryside.

The US Drought Monitor continues to rate southwestern Indiana counties in the D0 “abnormally dry” category, including most of Gibson, Posey, Vanderburgh, Daviess, Warrick, Dubois, Spencer, Perry, and Crawford counties, about 10% of Indiana’s total land area. According to Indiana Ag Statistics Service topsoil moisture is rated at 32% short around Indiana while subsoil moisture is surveyed to be 24% short.

Subfreezing temperatures affected all parts of Indiana between April 11th and 13th. The coldest minimum temperatures were generally between 23°F and 27°F across the state but Wanatah in far northwest Indiana recorded the state lowest at 18°F on the morning of April 12th.

Horticulturalists advise that a 10% loss of flowers and young fruit can be expected with minimum temperatures at 28°F but that loss increases to 90% when temperatures fall to 25°F. Yet this spring the bud count was exceptionally high before the freeze and even a 90% bud loss could still yield a decent crop on fruit trees. The true impact of the freeze damage won’t be known until a few more weeks pass.

Less than 20% of Indiana’s corn acres had been planted prior to the freeze events this week, mostly in southwest Indiana. The initial freeze assessment is that some of the earliest planted corn with development beyond 3 leaves may be quite damaged while younger corn was yellowed but looked good. A determining factor will be whether the growing point within the corn plant was above or below the ground surface at the time of the freeze. Subsurface corn growing points are often protected by the soil in freeze events. A better assessment could be done a week after the freeze events to see what recovery has actually occurred.



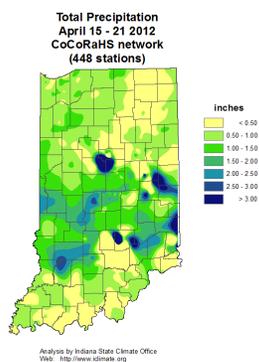
April 15th – 21st

This week started warm but trended cooler as the week went on. Only on the last day did temperatures fall below normal. Just two cold fronts passed through the state this week but each was able to squeeze some needed rain from the atmosphere.

The first day of the week was the warmest at 14°F above normal. The first cold front moved through Indiana on April 16th, lowering temperatures back to normal. The high pressure system behind this front slid east of the state and slowed the advance of the second cold front for another two days. Meanwhile Indiana temperatures crept up a bit to 4°F above normal. The ridge now moved east to the Atlantic Coast, allowing the second cold front to travel through the state and tap into colder Canadian air. Temperatures now dipped further to 7°F below normal to close out the week. Overall for this week temperatures averaged about 3°F above normal. Daily maximum temperatures this third week of April normally range between 61°F in northern Indiana to 69°F in the far southwest. Typical daily minimum temperatures should vary from 40°F to 45°F north to south across the state.

Rain fell near the start and end of the week with the passage of the two cold fronts. Total rainfall for the week was about 0.7 inch in northern Indiana and about 1.1 inch in central and southern areas. These amounts equate to about 80% of normal in the north, near 110% in central sections, and right about normal in southern Indiana. Isolated heavier showers were recorded on April 15th with 1.95 inch measured by the CoCoRaHS observer in Newberry. Some other larger amounts included 1.80 inch in Scipio, 1.76 inch in Columbus, and 1.72 inch at Bedford. The heaviest weekly totals included 2.49 inches at Newberry, 2.45 inches in Cloverdale, 2.42 inches at Osgood, and 2.32 inches in Plainfield. April has been a very dry month to date and these rain showers were beneficial to help begin to recharge soil moisture.

Dryness continues to be a concern in southwest Indiana. The US Drought Monitor again rates extreme southwest Indiana soils in the D0 category (abnormally dry). The area coverage is unchanged from a week earlier at about 10% of Indiana land area. If significant rains do not return in the coming week parts of northern Indiana may also join the D0 category according to observers in that area. In their latest weekly report the Indiana Ag Statistics office rates Indiana topsoil moisture at 32% short or very short while 27% of the state's subsoil moisture is rated at these levels.



April 22nd – 30th

In a spring season that seems all backwards the last stretch of April finished cooler than all the prior weeks this month. Temperatures bounced warm and cold as three cold fronts, one warm front, and a stationary front resided in the vicinity of Indiana at some time during these last 10 days.

A cold front moved through the state on April 23rd. Daily statewide temperatures stayed cool through the next day at 5°F to 8°F below normal. Then a slowed warm front became stationary just south of Indiana but did allow a brief two day warm up. Temperatures lifted barely above normal by April 26th. A weak cold front that day was followed by a very strong and fast push of cold Canadian air behind another cold front the next day. Temperatures crashed to an unseasonable 17°F below normal by April 29th, the coldest weather of the period. This cold air mass shunted east of Indiana, and warm air surged back to close the month at 6°F above normal, the warmest day of the interval. Overall for the 10 days daily temperatures averaged 3°F below normal. Usually at the end of April daily maximum temperatures should range between 64°F and 71°F north to south across the state. Daily minimums normally vary between 42°F in far northern Indiana to 48°F in southwest counties.

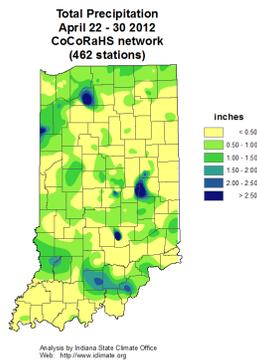
Rainfall was widespread but light in midweek when the stationary front approached Indiana. A dry day went by before the strong cold front and final warm front produced moderate but more consistent showers, adding a few more tenths inch of moisture each of the last three days of the month. For the 10 days rainfall totaled about 0.7 inch across northern Indiana, 0.6 inch in central, and nearly 0.9 inch in the south. Yet these amounts are less than expected for late April at about 75% of normal in northern areas, 50% of normal in central Indiana, and near 70% of normal in the south. Isolated heavy rainfall was reported by CoCoRaHS observers in southern Indiana on the morning of April 29th while thunderstorms dumped locally heavy rain on northwest Indiana the next day. Some heavy one day amounts included 1.83 inches at Galena, 1.73 inch at Paoli, and 1.70 inch in Sellersburg. Kentland measured 2.23 inches on the last day of the month. These places also reported the heaviest totals of the week with 2.68 inches in Kentland, 2.01 inches in Galena, and 1.96 inch in Paoli.

Limited storm damage occurred north of the midweek stationary front. Hail up to 1.25 inch in diameter was reported in Franklin and Dearborn counties. High winds toppled some trees in Dubois county.

Hail and wind damage were more widespread on April 28th with the passage of the strong cold front, generally in a swath stretching from Knox county to Floyd county. Hail of 1.75 inch diameter was observed in Knox and Daviess counties with wind gusts between 60 mph and 90 mph. The high winds caused trees to fall on power lines which resulted in power outages in these counties. To the east 2.75 inch diameter hail fell in Orange county, damaging cars and breaking windshields. In nearby Crawford, Harrison, and Floyd counties 1.75 inch diameter hail was common while Washington county noted 1.00 inch size hail. High winds caused power outages in Crawford and Harrison counties.

The warm surge on April 30th brought a third round of severe weather. High winds uprooted trees in Marion and Shelby counties of central Indiana and to the east in Wayne county. In northeast Indiana thunderstorms produced 1.0 inch hail in Wells county while wind gusts caused tree damage in Huntington county.

The general lack of rain this month is expanding dry soil concerns beyond southwest Indiana. The April 24th edition of the US Drought Monitor has added several northwest Indiana counties into the abnormally dry classification (D0 category). The region of Indiana generally west of a line bounded by Crown Point to South Bend, then on to Rochester and Attica has been added to the D0 category. The extent of the D0 category in southwest Indiana remains unchanged from the week before. In total 24% of the Indiana land area is now classified in the abnormally dry category. Another perspective is the Weekly Weather and Crop Report of the Indiana Ag Statistics office. In its April 30th edition the agency reported its survey noted 33% of Indiana's topsoil was evaluated as short or very short of moisture. Subsoil was reported as 29% short or very short of moisture.



April 2012

Temperature			
Region	Temperature	Normal	Deviation
Northwest	51.1	49.5	1.7
North Central	50.3	48.9	1.3
Northeast	49.6	48.5	1.2
West Central	53.5	51.5	2.0
Central	52.4	50.9	1.6
East Central	51.4	49.9	1.5
Southwest	57.3	54.9	2.4
South Central	56.1	54.2	1.8
Southeast	54.1	53.1	1.0
State	53.0	51.4	1.7

Precipitation				
Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	1.81	3.60	-1.80	50
North Central	1.47	3.59	-2.12	41
Northeast	1.31	3.47	-2.16	38
West Central	2.40	3.88	-1.48	62
Central	2.47	3.91	-1.44	63
East Central	1.85	3.78	-1.93	49
Southwest	2.72	4.45	-1.73	61
South Central	3.38	4.42	-1.04	76
Southeast	3.27	4.21	-0.94	78
State	2.32	3.94	-1.62	59

Spring so far (March - April)

Region	Temperature	Temperature	
		Normal	Deviation
Northwest	51.7	43.9	7.8
North Central	51.1	43.3	7.8
Northeast	50.3	42.8	7.5
West Central	54.2	46.0	8.2
Central	53.2	45.4	7.9
East Central	52.1	44.4	7.7
Southwest	57.6	49.7	7.8
South Central	56.5	49.1	7.3
Southeast	54.7	48.1	6.7
State	53.6	46.0	7.7

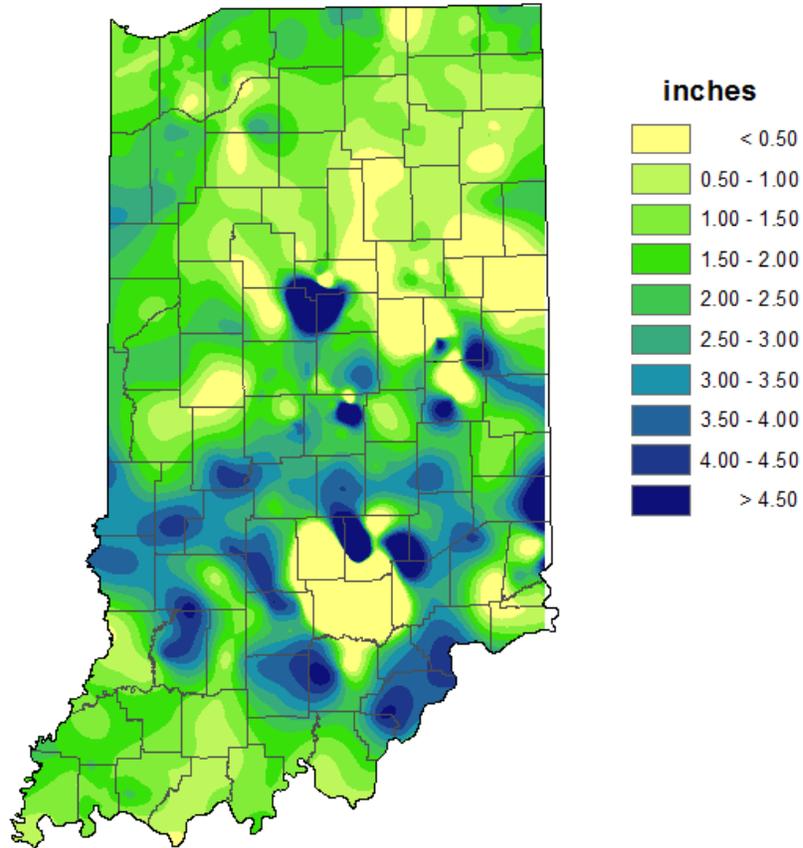
Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	3.44	6.52	-3.08	53
North Central	3.32	6.37	-3.05	52
Northeast	3.54	6.18	-2.65	57
West Central	4.69	7.23	-2.54	65
Central	6.09	7.19	-1.10	85
East Central	4.94	6.85	-1.91	72
Southwest	5.25	8.68	-3.42	61
South Central	7.24	8.59	-1.35	84
Southeast	7.28	8.16	-0.88	89
State	5.09	7.34	-2.25	69

2012 Annual (through April)

Region	Temperature	Temperature	
		Normal	Deviation
Northwest	41.1	34.7	6.4
North Central	40.9	34.4	6.5
Northeast	40.5	34.0	6.5
West Central	43.7	36.8	6.9
Central	43.3	36.5	6.7
East Central	42.3	35.6	6.7
Southwest	47.6	41.1	6.5
South Central	46.8	40.7	6.0
Southeast	45.5	39.7	5.7
State	43.6	37.2	6.5

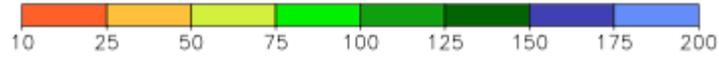
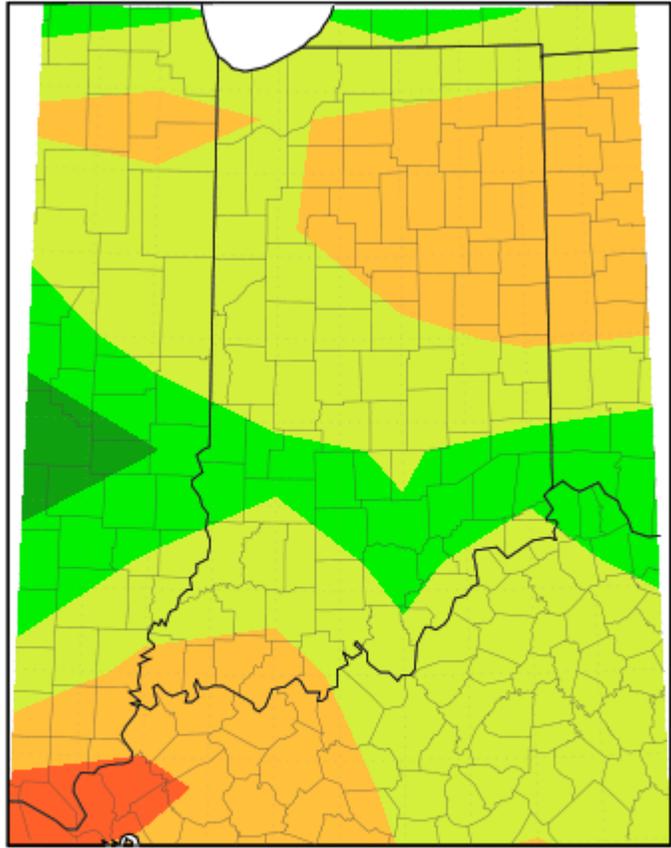
Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	7.65	10.11	-2.45	76
North Central	8.28	10.24	-1.96	81
Northeast	8.70	9.96	-1.26	87
West Central	9.31	11.68	-2.37	80
Central	11.15	11.81	-0.66	94
East Central	9.77	11.30	-1.53	86
Southwest	10.45	14.55	-4.10	72
South Central	12.99	14.61	-1.63	89
Southeast	13.42	13.97	-0.55	96
State	10.17	12.06	-1.90	84

**Total Precipitation
April 2012
CoCoRaHS network
(447 stations)**



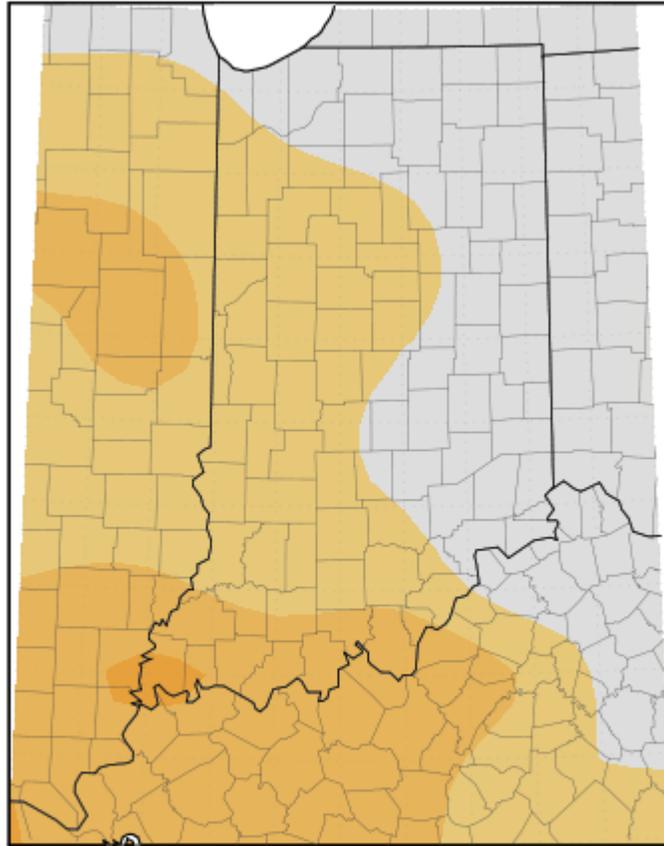
Analysis by Indiana State Climate Office
Web: <http://www.iclimat.org>

Accumulated Precipitation: Percent of Mean
April 1, 2012 to April 30, 2012



Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana-Champaign

Average Temperature (°F): Departure from Mean
April 1, 2012 to April 30, 2012



Mean period is 1981–2010.



Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana-Champaign

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 3rd has 0.0% of Indiana under at *least* D1-D4 drought status, 11.1% under at *least* D0 through D4 drought status, and 88.9% drought free. Subtracting the D1-D4 category (0.0%) from the D0-D4 category (11.1%), tells us that 11.1% of Indiana is in D0 category alone (abnormally dry). Please note, however, that these areas are not exact, and much of this drought map has been created from reports throughout the state and in estimation, so use this information as a general view rather than for specifics.

Indiana ▼

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

Week	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
May 1, 2012	59.94	40.06	0.00	0.00	0.00	0.00
April 24, 2012	76.01	23.99	0.00	0.00	0.00	0.00
April 17, 2012	91.53	8.47	0.00	0.00	0.00	0.00
April 10, 2012	90.54	9.46	0.00	0.00	0.00	0.00
April 3, 2012	88.91	11.09	0.00	0.00	0.00	0.00

April 3rd Drought Summary



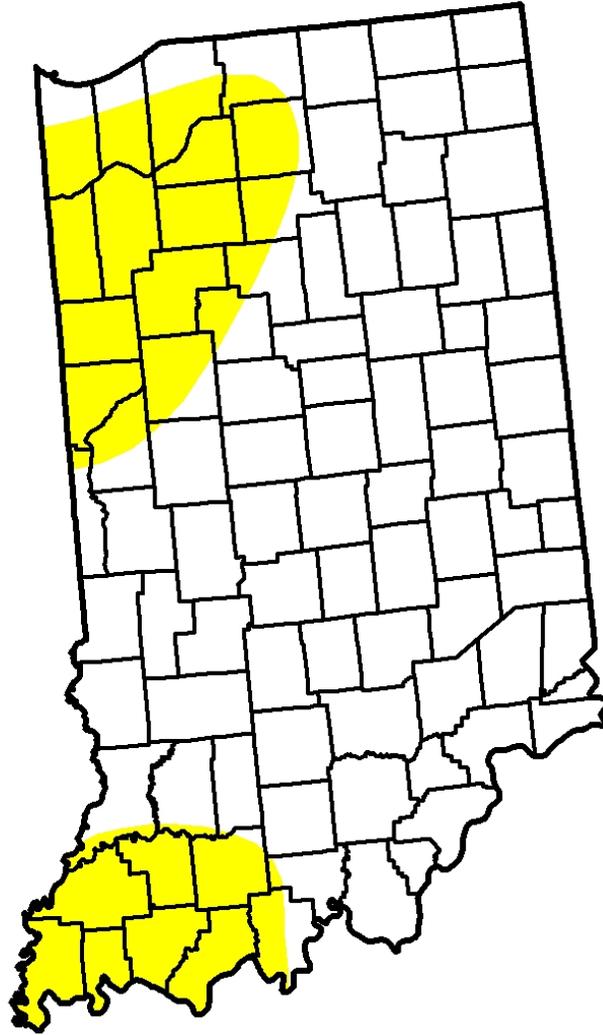
April 10th Drought Summary



April 17th Drought Summary



April 24th Drought Summary



May 1st Drought Summary

