

**Ken Scheeringa
and
Kayla Hudson**

Indiana State Climate Office

Monthly Weather Report

Jun 6, 2012



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

May 2012 Climate Summary

Month Summary

The warmer and drier than normal weather trend rolls on. May extends this anomaly to become the 7th consecutive month with above normal temperature and the 4th consecutive month of below normal precipitation in Indiana. After a complete absence in April the tornado season revved up with 4 confirmed tornadoes on May 1st in central Indiana. Severe thunderstorms seemed to take aim at northwest Indiana this month while drought conditions worsened in most of northern and southwestern Indiana. New record temperatures for May were set over the Memorial Day weekend.

The state average May temperature was 67.9°F, which is 5.8°F above the month normal. May 2012 ranks as the 5th warmest May since state records began in 1895. The most recent warmer May posted a 68.2°F state average temperature in 1991, the 3rd warmest May on record. Some other warm Mays were a 68.3°F average in 1977, placing as 2nd warmest, and a 68.0°F reading in 1962 which ranked as 4th warmest.

The day split for May 2012 shows 8 days of below normal temperatures, 1 day at normal, and 22 days with above normal temperature. On half of those 22 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 100°F recorded twice, on May 21st at Franklin and again on May 24th at West Lafayette. The coolest daily temperature noted was 34°F at Chalmers on May 11th.

The state precipitation total of 2.79 inches is about 65% of normal and ties 1954 as the 22nd driest May on record. Regionally about 55% of normal May precipitation fell in northern Indiana this month, while central and southern Indiana measured about 70% of normal rainfall. Some recent drier May months were a 1.84 inch amount in 2007 in 9th place and a 2.55 inch total in 2005, which ranks in 18th place. The driest May on record in Indiana occurred in 1934 with 1.12 inch. The highest single day precipitation amount this month was 4.34 inches measured at the CoCoRaHS station in Hebron on May 7th. The largest single day cooperative network amount was 3.87 inches which fell that same day at Crown Point. Generally precipitation fell on about 9 days around Indiana this month.

Severe weather resumed almost immediately with 4 confirmed tornadoes on the first day of the month. There were two EF0 tornadoes and two EF1 tornadoes in Indiana but no deaths or injuries resulted. There was also large hail in 12 counties and some flash flooding. Details on the severe weather of May 1st is found below in the narrative for the first week.

Intense rainfall caused flash flooding in six northwest Indiana counties on May 6th and 7th, closing city streets with water over 3 feet deep. Later on May 20th this same area experienced widespread property damage due to a microburst. These events are also detailed in the weekly narratives below.

After May 8th parts of Indiana received little rainfall to the end of the month. Late in May portions of north central and southwest Indiana were rated to be in a moderate drought as conditions deteriorated. Dry soils can contribute to unusually high temperatures as evidenced on May 27th when both South Bend and Fort Wayne set new May records. A few days earlier two Indiana locations reported official maximum temperatures of 100°F, the warmest in the state this month.

May 1st – 7th

After a cool finish to April the first week of May heated up with much above normal temperatures. The month opened with temperatures 8°F above normal. The highest temperatures of the week arrived two days later with the statewide average at 19°F above normal by May 3rd. For the remainder of the week temperatures slid gradually each day, ending about 10°F above normal but still very warm. Typical daily maximum temperatures for the first week of May range from 66°F in northern Indiana to 74°F in the south. Daily minimums vary from 45°F to 51°F north to south across our state.

Storm systems this week traveled along a mostly zonal wind flow pattern in the upper atmosphere over Indiana. Cold and warm air masses stayed close by and tussled back and forth across our state in this weather pattern. A weak cold front passed through Indiana on May 1st but reversed direction as a warm front the next day. Indiana remained in the warm air mass until May 5th when a second cold front passed through. Two days later a warm front ahead of the next storm system transported tons of moisture into northwest Indiana causing flash flooding.

After a dry April the rains have returned to start the month of May. Rain fell nearly every day this week with significant amounts on four of these days. Fronts lingered near Indiana throughout the week giving many shower opportunities statewide. The first cold and warm fronts triggered about an inch of rain through May 2nd. Southern Indiana received the heavier rainfall with the cold front a few days later. Then late in the week it was northern Indiana's turn when about 0.8 inch fell. Weekly totals were about 1.5 inch in northern Indiana, 1.9 inch in central sections, and 1.7 inch in the south. These amounts are twice normal in northern and central Indiana and nearly one and a half times normal in southern sections of the state. A normal weekly rainfall total would be about 0.75 inch in northern areas, 0.9 inch in central Indiana, and 0.5 inch across southern counties.

Heavy thunderstorms dumped torrential rainfall on Lake county at the end of the week. CoCoRaHS reports on the morning of May 7th included 4.34 inches and 4.22 inches at two locations in Hebron, while three Crown Point observers measured 4.25 inches, 4.20 inches, and 4.10 inches. These same observers noted the heaviest weekly totals for Indiana this week with 4.89 inches and 4.77 inches at Hebron. The Crown Point observers totaled 4.94 inches, 4.89 inches, and 4.82 inches for the week.

There were no Indiana tornadoes in all of April. There was no wait time in May as 4 tornadoes were confirmed on May 1st in central Indiana.

An EF-0 tornado briefly touched down for 0.1 mile in Fountain county with no damage reported.

In adjacent Montgomery county an EF-1 tornado traveled on the ground for 0.5 mile, destroying a large barn and damaging two homes. Winds near 100 mph tore down power lines, and wrapped metal around power poles and trees. Home roofs were torn off, windows broken, and grain bins destroyed. There were no injuries with this tornado.

To the south in Clay county an EF-0 tornado with a path length of 0.1 mile touched down in an open field. There was no damage or injuries reported.

An EF-1 tornado was confirmed in Franklin county. This tornado stayed on the ground for 1.3 miles, damaging large buildings on three farms and moving sheds several feet off their foundations. Metal from the sheds were found wrapped around high tension wires. Walls and doors of nearby homes were blown in, roofs were torn off, and windows were broken. Some trees were snapped off in the wind. There were no injuries noted.

In addition to tornadoes there were extensive areas of central Indiana with large hail reported on May 1st. Hail an inch to 1.5 inch was reported in Warren, Fountain, Hendricks, Owen, Monroe, Brown, Jackson, Bartholomew, Decatur, Ripley, Dearborn, and Knox counties. North of the hail region high winds were reported up to 70 mph in Johnson, Decatur, Henry, and Dearborn counties.

Lightning set a building on fire in Hendricks county. Flash flooding was a problem in Bartholomew, Hancock, and Marion counties. There were reports of numerous vehicle slide offs due to wet pavement. Trees were downed by high winds in Monroe and Bartholomew counties. A semi-truck was flipped in Decatur county due to high thunderstorm winds.

Another round of severe weather occurred in advance of the second cold front, this time in southern Indiana. A swath of large hail was noted in far southwest Indiana. The counties of Posey, Gibson, Vanderburgh, and Spencer received hail between 1.00 inch and 1.75 inch in diameter. To the east 1.25 inch diameter hail was reported in Washington county.

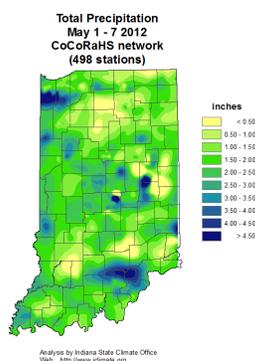
High winds in the 60 mph range caused damage north of this hail region along a line stretching from Princeton to Corydon. Trees and power lines fell in Gibson county while 2000 homes lost power in adjacent Pike county. Many more trees came down eastward to Harrison county. In an isolated storm in Boone county far to the north high winds toppled trees and shifted sheds off their foundations.

The severe weather was still not over. Late on May 6th intense storms dumped heavy rain in northwest Indiana. Roads were closed in Newton, Jasper, White, and Benton counties due to flash flooding. High winds in Benton and Tippecanoe counties crashed trees into power poles which blocked local roads.

The heavy storms pushed north into the early hours of May 7th. Flash flooding spread into Lake and Porter counties where overloaded sewer systems popped off manhole covers as water spurted from below into streets. Street flooding reached 3.5 feet deep in places making roads impassable. Meanwhile another storm cell in east central Indiana produced 1.00 inch diameter hail in Delaware and Randolph counties this day.

The April dryness had expanded the abnormally dry (D0 category) region of Indiana to cover the entire northern third of the state by May 1st. The US Drought Monitor also continued to rate eight counties of extreme southwest Indiana as abnormally dry (D0 category) as has been the case for some weeks now.

Much changed in the May 8th edition at the conclusion of this first week of May. The D0 category was reduced to 12% of total Indiana land area in the May 8th report compared to 40% of total area a week earlier. Most northwest and northeast counties were returned to normal status while only north central counties remained in the abnormally dry D0 category. The persistent dry area of southwest Indiana is now also largely eliminated with only small scattered local pockets remaining. In another view the Indiana Weather and Crop Report of May 7th rated topsoil moisture as 14% short or very short. Subsoil is surveyed to be 19% short or very short of moisture.



May 8th – 14th

The weather has really quieted down since a week ago. No severe weather occurred in Indiana this week. Two cold fronts and one stationary front impacted the state. Temperatures on a downward trend since May 4th continued to fall until May 10th. The first cold front tracked close behind an old cold front of a few days ago, reinforcing cooler air already over Indiana.

This week had opened warm at 6°F above normal. Then that first May 9th cold front dropped temperatures quickly to below normal which bottomed out at 5°F below normal the next day. A warming trend started on May 11th. Temperatures rose, eventually ending the week at 5°F above normal. The next day a new cold front started its journey across the state but stalled as a stationary front on May 13th. A renewed cold air push by Canadian high pressure re-energized the stationary front back into a cold front which then completed its trip across Indiana. Overall for the week daily state temperatures averaged right about normal. Normal for the second week of May translates to a daily maximum temperature range between 68°F and 75°F north to south across Indiana. Typical daily minimums vary between 47°F in far northern Indiana to 53°F in far southwestern counties.

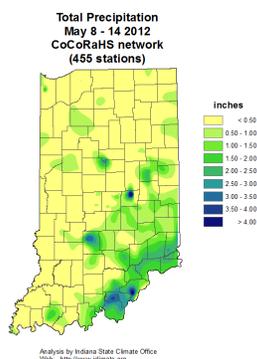
Rainfall slowed considerably since a week ago. The last significant rain was tallied on May 8th with locally heavy showers in the southern extent of central Indiana while a few tenths of an inch was

more common over the wider area. The next four days were mostly dry statewide. A storm south of Indiana added a little more rain to southern Indiana near the end of this week. Rainfall totals for the week averaged about 0.2 inch in the northern section of our state, about 0.5 inch in central areas, and near 0.9 inch across the south. These totals equate to about 25% of the weekly normal in northern Indiana, around 60% of normal in central, and about 85% of normal in southern counties.

Locally heavy showers were leaving central and southern Indiana as this week began. On the morning of May 8th two CoCoRaHS reporters in Bloomington measured 3.50 and 2.90 inches of rain. The nearby Ellettsville observer noted 3.07 inches while in far southern Indiana the New Salisbury volunteer observed 2.57 inches. With light rainfalls included later in the week the highest Indiana weekly CoCoRaHS totals came in at 3.63 inches for New Salisbury, 3.09 inches in Ellettsville, and 2.97 inches at Milltown.

As rainfall events dwindled this week the areas of abnormally dry (D0 category) Indiana soils increased in size. This reversal from shrinking coverage a week ago recurred in the same north central and far southwest counties already experiencing drier soils. The US Drought Monitor May 15th edition shows nearly all north central counties except small areas nearest the Michigan state line to be in the D0 category. The five counties in extreme southwest Indiana are also included in this category. These maps now classify 21% of total Indiana land area in the D0 abnormally dry category compared to about 12% of total area a week prior. The Indiana Weekly Weather and Crop Report rates 15% of state topsoils as short or very short of moisture. The subsoil moisture rating is at 17% short or very short.

Low humidity is another factor in soil dry down this week. Afternoon relative humidity fell to near 20% around Indiana on some days, unusual for this time of year. As soils continue to dry down the possibility of brush fires could reappear in coming days as was the case earlier this year.



May 15th – 21st

The week began mild at 4°F above normal. A dry cold front passed through Indiana on May 16th. By the next day the state average temperature had slipped to 2°F below normal, the coldest day of the week. But the cool down was brief. A three day warming trend took hold and by May 20th the daily temperature had peaked at 10°F above normal. A second stronger cold front pushed through

Indiana late on May 20th, triggering thunderstorms with severe weather damage in extreme northwest counties. Yet the week did close on the warm side with the daily state temperature at 2°F above normal. Overall for the week temperatures averaged close to 3°F above normal. Typically in mid-May we would expect daily maximum temperatures to range from about 71°F in far northern Indiana to 77°F in the southwest. Daily minimums normally vary between 49°F and 55°F north to south across our state.

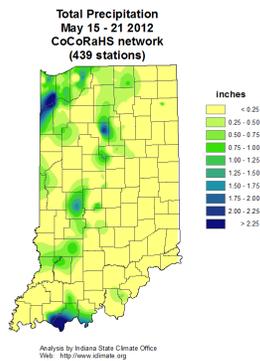
The last significant rain in Indiana for many places was May 8th or earlier. The second cold front wrung out just a little moisture from the atmosphere on May 21st, generally 0.1 inch to 0.3 inch. For the week rainfall totals averaged near 0.3 inch in northern Indiana and barely 0.2 inch across the rest of the state. On a percentage basis rainfall in the north this week totaled near 35% of normal. Central and southern Indiana received 15% to 20% of their normal amount.

Locally heavier rain fell in severe thunderstorms in far northwest Indiana. Some CoCoRaHS rain gage amounts recorded on the morning of May 21st included 2.25 inches, 1.75 inch, and 1.71 inch at three locations in DeMotte. A Hebron observer noted 2.04 inches while in LaPorte 1.66 inch was measured. Weekly rain totals in this region were slightly higher with 2.29 inches, 1.75 inch, and 1.73 inch at the Demotte sites, 2.07 inches in Hebron, and 1.54 inch in Greencastle.

Late on May 20th high winds and light hail pummeled Lake, Porter, Laporte, and Newton counties of northwest Indiana. A microburst, a fast downward rush of cool air smashed into the ground by a thunderstorm, was later confirmed in the Gary area. Wind speeds were estimated at 90 mph which caused damage paths over a mile long. Walls were torn down and windows broken in an area strip mall. Trees were found on top of homes and cars while other trees were uprooted. Some home roofs were stripped off while falling trees brought down power lines. Most of the heaviest wind damage was along Lake Michigan but other high wind reports came in from Fulton county of north central Indiana. Roofs were torn off and windows broken in this part of the state. Hail less than an inch in diameter was noted in the damage areas of Lake and Porter counties. An isolated small hailstorm was also observed in southern Newton county.

Outside of northwest Indiana the general lack of rain continues to dwindle soil moisture supplies for growing crops. The May 22nd edition of the US Drought Monitor indicates abnormally dry conditions (D0 category) have spread across nearly all of the northern third of the state. Only Benton, Newton, Lake, Porter, Jasper, St Joseph, and sections of Elkhart county are not a drought concern at this time in northern Indiana. The dry area of southwest Indiana has grown northeastward this past week. Most areas generally southwest of a line from Terre Haute to Paoli to Leavenworth are now determined to be in abnormally dry (D0) status. The portion of Indiana defined within the D0 category has about doubled since a week earlier. The May 22nd edition considers 40% of total Indiana land area to be abnormally dry (D0 category) and about 1% of total area to be in moderate drought (D1 category).

Another view of the situation is provided in the May 21st edition of Indiana Weekly Weather and Crops. The soil moisture survey concludes that 43% of Indiana topsoil is now short or very short of moisture. The subsoil condition is rated at 35% short or very short.



May 22nd – 31st

A frontal passage at the end of last week brought cooler weather briefly to Indiana. So this week began with temperatures about 3°F below normal but it didn't take long for the heat to return. As surface high pressure slid over Indiana temperatures rebounded quickly to 12°F above normal by May 25th. A ridge in the upper atmosphere was forming over the eastern half of the country, blocking fronts from moving through the area. A cold front crossing the state on May 25th slowed and the next day stalled in Indiana as a stationary front, unable to advance against the upper block. The front reversed direction and returned north as a warm front on May 27th. The frontal episode was hardly noticed as temperatures continued to climb uninterrupted, peaking at 16°F above normal.

Two days later a burst of cold air behind a new and stronger second cold front succeeded in reaching the Ohio River. The upper block had broken into a zonal pressure pattern. Temperatures dropped quickly across Indiana, falling back to normal by May 30th. The cool air flow continued the final day of the month with temperatures closing out 5°F below normal. Most of the 10 day interval had been warm, however, wrapping into an average 7°F above normal. Usually the end of May sees daily maximum temperatures range from 73°F to 80°F north to south across the state. Daily minimums normally vary between 52°F in far northern counties to 58°F in the far southwest.

Except for moderate showers in the final few days of the month the rest of the 10 days was nearly dry. For the week about 0.2 inch of rain fell across northern Indiana, a half inch in central, and about 0.6 inch generally across the south. These totals are much below normal, about a tenth of normal in northern counties and about a third of normal elsewhere across the state. Locally heavy showers were observed by CoCoRaHS observers on May 29th and 30th, especially in south central Indiana. On May 29th the Jeffersonville volunteer recorded 2.51 inches while 2.38 inches was found in the gauge at Elizabeth. The next day two observers at Sellersburg measured 3.15 inches and 2.95 inches while 2.46 inches was noted at Jeffersonville that morning. This same area received yet more rain in these final days. Some local totals included 4.05 inches in Elizabeth, 3.34 inches at Sellersburg, 2.97 inches at Floyds Knobs and 2.46 inches in Jeffersonville.

Air sinking inside the upper ridge block warmed on its descent to the ground surface. On May 27th new all time record maximum temperatures for May were set in northern Indiana, especially where soils were already very dry. South Bend set a new May record of 97°F that day while Fort Wayne reached 95°F.

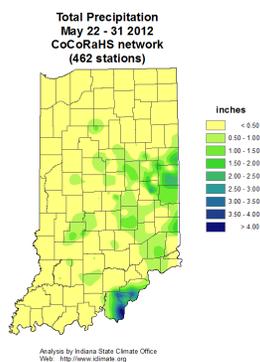
The northward return of the warm front had caused locally high winds in southwest Indiana. Trees fell in Dubois county on May 28th but caused no other significant damage.

Local severe weather was also noted at the very end of the month with the passage of the last cold front. In Spencer county a thunderstorm produced 1.0 inch diameter hail along with high winds in excess of 60 mph.

Concerns of wildfire continue in tandem with the high temperatures, low humidity, and windy conditions experienced in recent days. On May 24th a voluntary burn ban was issued for the city of Lafayette in west central Indiana until further notice. A series of brush fires in recent weeks along railway lines nearby ignited by passing trains is an indicator of how dry the ground has become.

According to the May 29th edition of the US Drought Monitor soil moisture conditions continue to deteriorate in Indiana. The area in northern Indiana classified as abnormally dry has now expanded to the southwest to cover some counties in west central Indiana. In general abnormally dry conditions now cover most of the state north of a line from Clinton to Bluffton except for Benton, Newton, Jasper, Lake, Porter, and Laporte counties. Conditions have worsened in the north central counties of Whitley, Kosciusko, Wabash, Miami, Fulton, and Cass which have been classified to D1 status, moderate drought.

In southern Indiana the region of abnormally dry conditions has not increased significantly since a week ago but the far southwest counties of Spencer, Warrick, Pike, Gibson, Vanderburgh, and Posey have been reclassified into moderate drought status (D1 category). Overall 15% of the total Indiana land area is now classified to be in moderate drought and 35% at least abnormally dry. In another view according to the May 27th edition of the Indiana Weekly Weather and Crop Report, 71% of Indiana topsoil was rated as short or very short of moisture. The subsoil rating was 54% short or very short of moisture.



May 2012

Region	Temperature	Temperature	
		Normal	Deviation
Northwest	66.0	60.8	5.2
North Central	65.8	60.3	5.5
Northeast	65.7	59.8	5.9
West Central	68.0	62.3	5.7
Central	67.6	61.7	5.9
East Central	67.1	60.8	6.3
Southwest	70.8	64.6	6.3
South Central	70.1	63.9	6.2
Southeast	68.7	63.0	5.6
State	67.8	62.0	5.8

Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	2.64	3.98	-1.34	66
North Central	1.90	3.85	-1.96	49
Northeast	1.88	3.78	-1.90	50
West Central	2.69	4.38	-1.69	61
Central	3.19	4.40	-1.20	73
East Central	3.50	4.31	-0.81	81
Southwest	2.16	4.99	-2.83	43
South Central	3.41	5.00	-1.59	68
Southeast	4.32	4.85	-0.53	89
State	2.79	4.40	-1.61	63

Spring (March - May)

Region	Temperature	Temperature	
		Normal	Deviation
Northwest	56.5	49.6	6.9
North Central	56.0	49.0	7.0
Northeast	55.5	48.5	6.9
West Central	58.8	51.5	7.3
Central	58.1	50.9	7.2
East Central	57.2	49.9	7.2
Southwest	62.0	54.7	7.3
South Central	61.0	54.1	6.9
Southeast	59.4	53.1	6.3
State	58.4	51.4	7.0

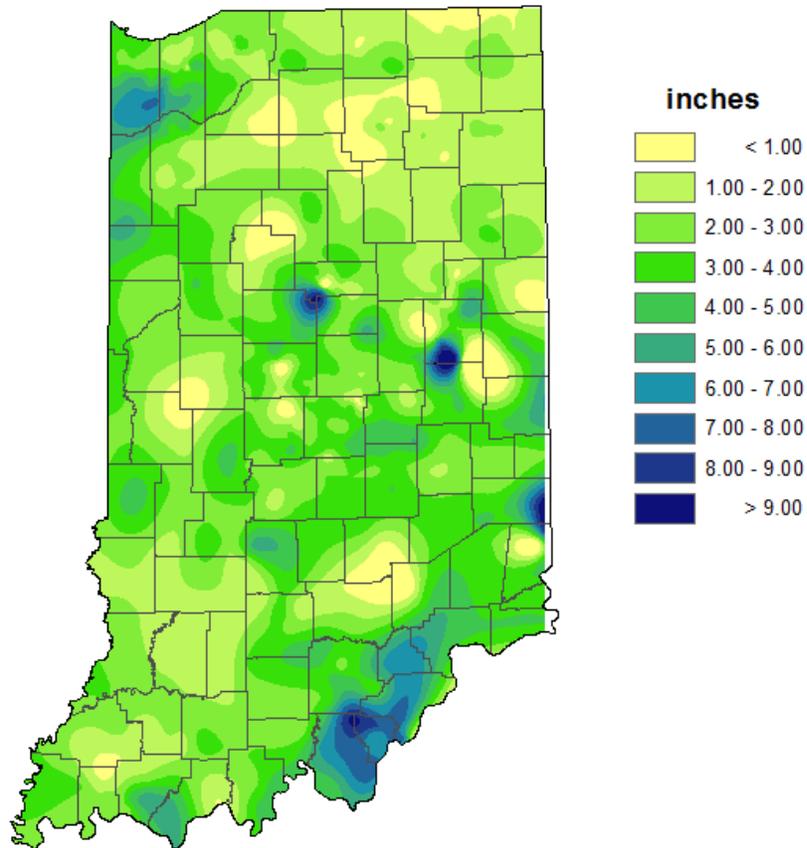
Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	6.07	10.50	-4.43	58
North Central	5.23	10.22	-5.00	51
Northeast	5.42	9.96	-4.54	54
West Central	7.38	11.61	-4.24	64
Central	9.48	11.59	-2.11	82
East Central	8.51	11.16	-2.66	76
Southwest	7.70	13.66	-5.96	56
South Central	11.08	13.59	-2.51	82
Southeast	11.60	13.01	-1.41	89
State	8.01	11.74	-3.73	68

2012 Annual (through May)

Region	Temperature	Temperature	
		Normal	Deviation
Northwest	46.2	40.0	6.1
North Central	45.9	39.7	6.3
Northeast	45.6	39.2	6.4
West Central	48.6	42.0	6.6
Central	48.2	41.6	6.6
East Central	47.4	40.8	6.6
Southwest	52.3	45.9	6.4
South Central	51.5	45.5	6.0
Southeast	50.2	44.5	5.7
State	48.5	42.2	6.3

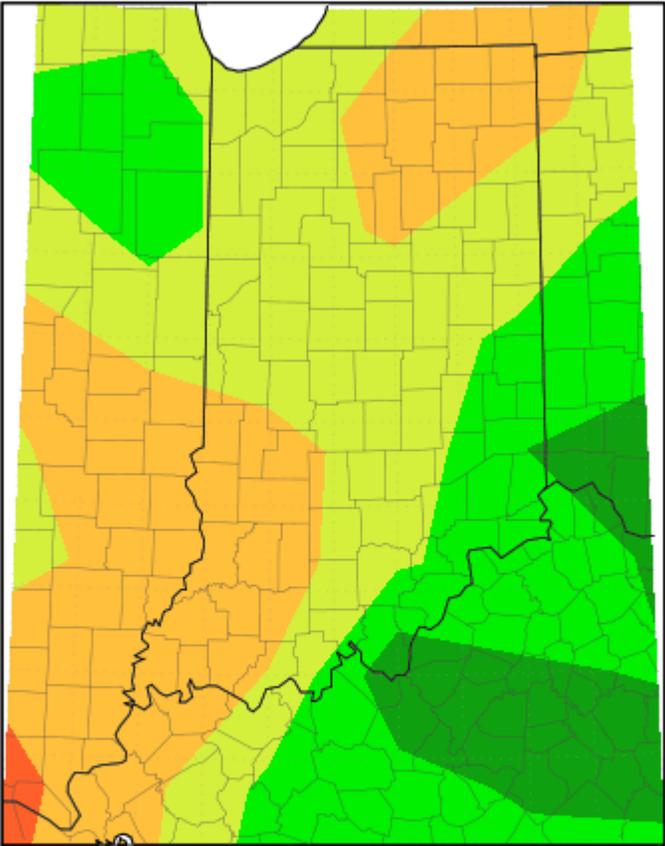
Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	10.28	14.08	-3.80	73
North Central	10.18	14.09	-3.91	72
Northeast	10.58	13.73	-3.16	77
West Central	12.01	16.06	-4.06	75
Central	14.54	16.21	-1.67	90
East Central	13.34	15.61	-2.27	85
Southwest	12.90	19.54	-6.64	66
South Central	16.82	19.62	-2.79	86
Southeast	17.77	18.82	-1.05	94
State	13.09	16.47	-3.38	79

**Total Precipitation
May 2012
CoCoRaHS network
(471 stations)**

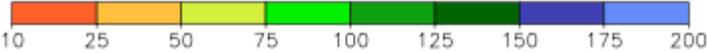


Analysis by Indiana State Climate Office
Web: <http://www.iclimate.org>

Accumulated Precipitation: Percent of Mean
May 1, 2012 to May 31, 2012

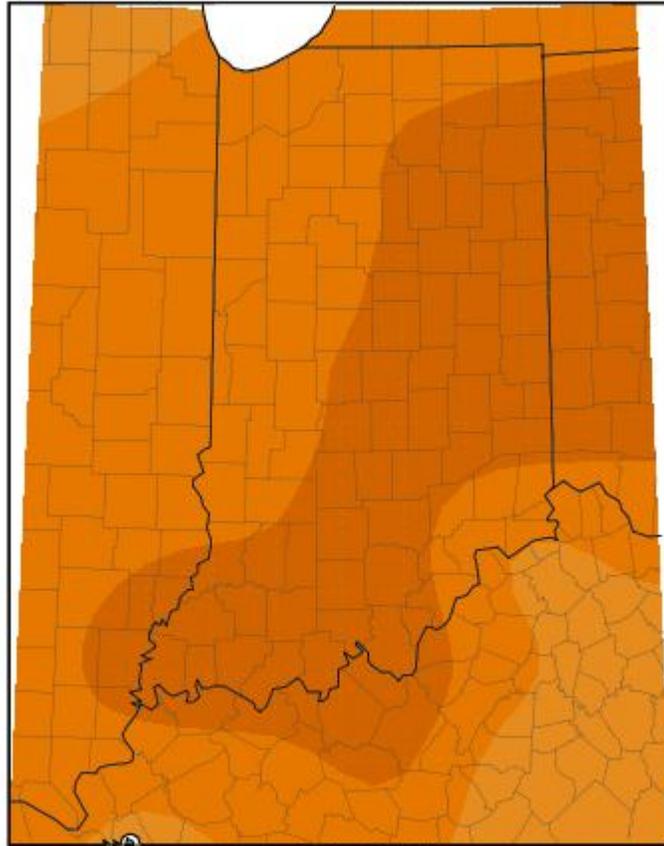


Mean period is 1981-2010.



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

Average Temperature (°F): Departure from Mean
May 1, 2012 to May 31, 2012



Mean period is 1981-2010.



Midwestern Regional Climate Center
Illinois State Water Survey, Prairie Research Institute
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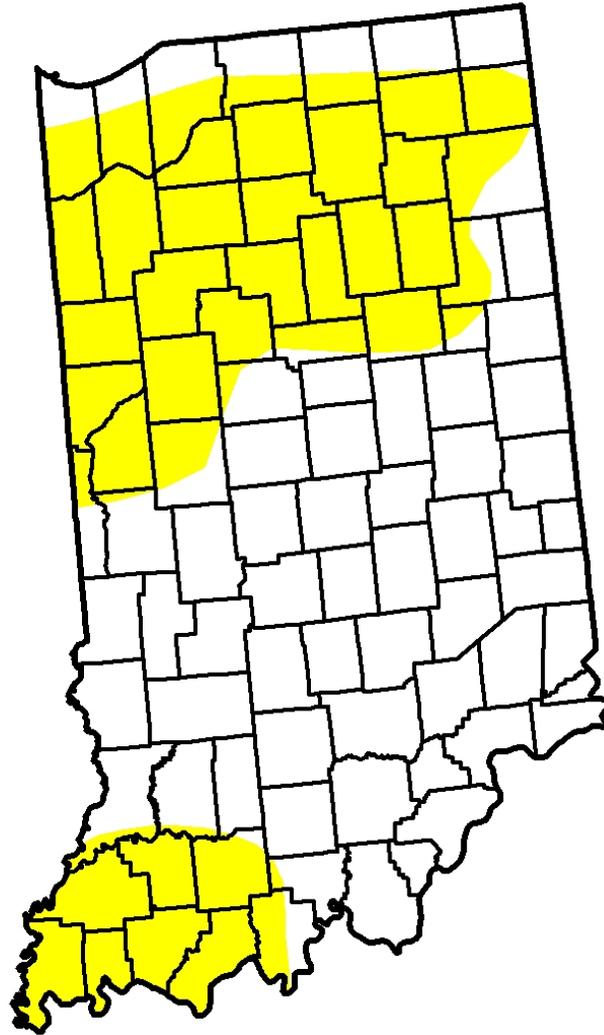
Drought Summary from the U.S. Drought Monitor

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.

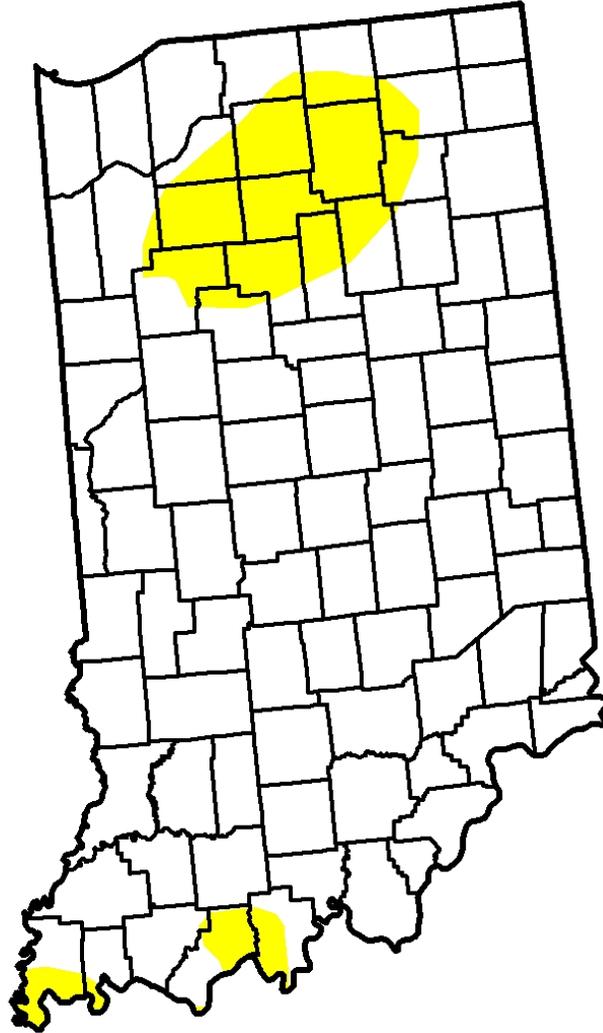
For example, May 29th has 15.2% of Indiana under at *least* D1-D4 drought status, 50.0% under at *least* D0 through D4 drought status, and 50.1% drought free. Subtracting the D1-D4 category (15.2%) from the D0-D4 category (50.0%), tells us that 34.8% of Indiana is in D0 category alone (abnormally dry). 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 29, 2012	50.05	49.95	15.21	0.00	0.00	0.00
May 22, 2012	59.34	40.66	0.73	0.00	0.00	0.00
May 15, 2012	78.86	21.14	0.31	0.00	0.00	0.00
May 8, 2012	88.34	11.66	0.00	0.00	0.00	0.00
May 1, 2012	59.94	40.06	0.00	0.00	0.00	0.00

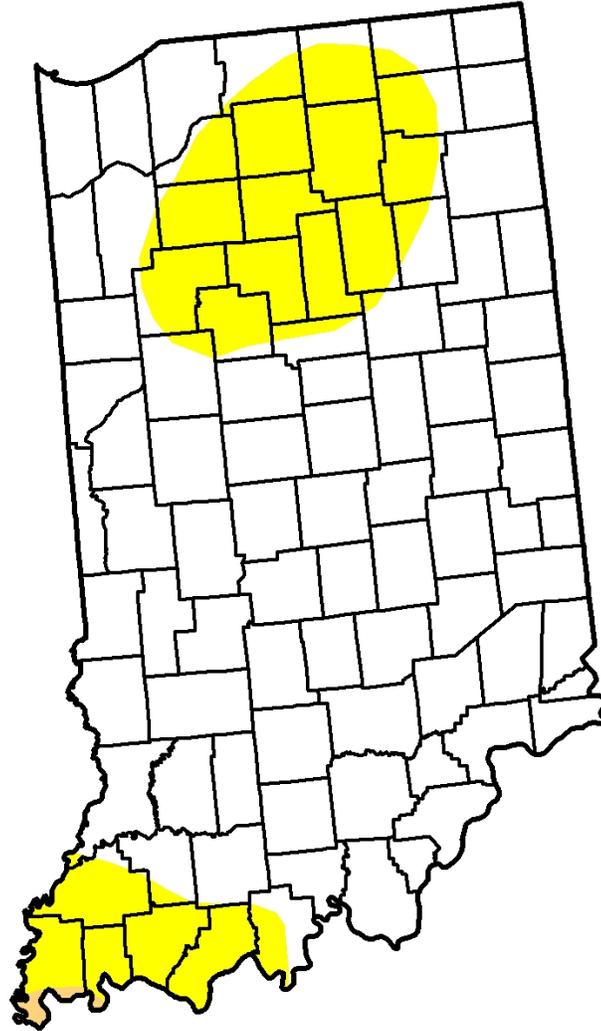
May 1st Drought Summary



May 8th Drought Summary



May 15th Drought Summary



May 22nd Drought Summary

