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And
Matt Price

Indiana State Climate Office
Monthly Weather Report
http://www.iclimate.org

Feb 5, 2015

January 2015 Climate Summary

Month Summary

A more typical winter returned to Indiana in January following a mild and near snowless December. The first half of January was difficult with four plunges of arctic air into the state and heavy snowfalls causing hazardous travel conditions. Interstates were closed on parts of 4 days early in the month. One death occurred in a 3-semi accident on I-80 in Lake county due to icy road conditions. Winter calmed in the second half of January with fewer travel problems. Large swings in temperature were noticeably absent the final week of the month.

The state average temperature was 25.3°F, just 0.7°F colder than normal, placing as the 45th coldest January on record since 1895. Some recent colder Januarys include a three year run. The January 2009 average was 21.4°F, good for 20th place. The next year its 23.9°F mean places at 39th coldest. Then January 2011 posted a 23.7°F average, settling into 38th place. Last January was quite cold at 19.3°F, ranking as 10th coldest. Recall January 1977? That was the coldest January on record with a bone chilling 10.1°F month average. The day split in January 2015 had 13 days of below normal temperature, and yes, 18 days above normal, and no days at normal. There were 8 days when the daily state temperature was 10°F or more below normal and 5 days when the daily average was at least 10°F above normal. The highest temperature of the month in the cooperative observer network was 62°F, recorded on January 3rd at the Evansville Airport and the next day at Cannelton. The coldest minimum was -13°F at Whitestown and New Castle 4 sse just days later on January 8th.

The January state precipitation average of 2.13" is 0.31" below normal. This ranks the month as the 53rd driest January on record. The same three consecutive recent Januarys come into play again. All were drier than 2015. January 2009 had a 1.63" state average placing at 35th driest. The next year 2010 posted 1.52", ranking at 27th driest. Then in January 2011 the month value was 1.50", good for 25th place. The driest January on record was in 1981, when the state mean was just 0.42". The highest single day precipitation amount among cooperative stations in January 2015 was 2.65" recorded on January 4th in Hazleton. That same day in the CoCoRaHS network the largest daily total was 2.19" at Princeton 1.0 nw.

Regionally January 2015 precipitation was near 90% of normal in northern and central Indiana, and 85% of normal in the south. Normal January precipitation ranges from about 1.9" in northwest Indiana to 3.1" in the south central area. Widespread precipitation fell on about 10 days this month.

Generally less than 4" of snow accumulated in the southern half of Indiana while 4" to 8" was common in the north half of the state. Only trace amounts were recorded in parts of south central Indiana. In the snow belt of far northern Indiana, St Joseph county tallied the most snow this month with 22" there. Widespread snowfall occurred on about 5 days in January.

January 1st – 10th

Arctic air plunged into Indiana on January 4th after a mild start to the new year. Two more surges of polar air days later reinforced the cold over the state. Moderate rain fell early in the week then heavy snow blanketed central Indiana and the lake effect region with the arrival of the bitter cold. Travel became hazardous. There were many accidents on January 5th and 6th and again on January 8th and 9th as drivers had to re-adjust after a nearly snowless December. One driver was pinned between vehicles and died at the scene.

High pressure which had spread across southeast states on New Year's Day transferred warm air northward into Indiana. The state temperature began the year at 5°F below normal but rose to 9°F above normal by January 3rd. The southern ridge had moved east and a storm system replaced it, supplying southern Indiana rain showers with Gulf moisture.

Arctic air from western Canada roared south into the Great Plains on January 4th, behind a strong cold front that had squeezed out the remaining moisture as it passed through Indiana in a second wet day. State temperatures tumbled 21°F by January 5th to 13°F below normal as a cold high pressure center moved overhead. The high center proceeded to the Gulf coast the next day.

A second push of arctic air was already in Nebraska behind a new cold front. The storm center was in Illinois and its warm front stretched into southern Indiana. A minor bump in state temperature was noted on January 6th to 12°F below normal. The next day the arctic mass rushed through Indiana all the way to the Gulf coast, dropping state temperatures to 19°F below normal, the coldest day of the 10 day interval.

The ridge of arctic air drifted to Arkansas early on January 8th, clearing Indiana skies and lifting temperatures slightly to 16°F below normal.

A third round of arctic air moved quickly from western Canada into the Great Plains on January 9th. The cold front of this Alberta clipper raced across Indiana in advance of the latest arctic surge. The high pressure ridge associated with this third arctic blast traveled the now usual path to the southeast, closing the 10 day interval sprawled across the eastern half of the country. The Indiana state temperature ended the 10 days at 10°F below normal. Overall the 10 day interval was intensely cold, averaging to 7°F below normal. Typically in these first 10 days of January daily maximum temperatures should range from 32°F to 41°F north to south across the state. Normal daily minimums vary between 18°F in far northern counties to 24°F in extreme southwest Indiana. The warmest daily maximum temperature observed in the cooperative observation network over the 10 days was 62°F at Evansville Airport on January 3rd. The coldest daily minimum was -13°F at New Castle 4 sse on January 8th.

Rain was reported the morning of January 2nd while both rain and snow were noted on January 3rd and 4th. The heaviest single day precipitation occurred on January 4th in southeast Indiana. Precipitation in Bright measured to 1.92" that day while Salem had 1.79", Brookville 1.75", and Moores Hill 1.71". Over the 10 days precipitation was generally heaviest across southern Indiana ranging from 1.5" to 2.5" with less than 1.5" generally north of a Vincennes to Richmond line. The CoCoRaHS observer at Francisco tallied 2.63" while the Petersburg gage summed to 2.50". The Batesville volunteer had 2.36", Moores Hill noted 2.34", and the observer at Osgood measured

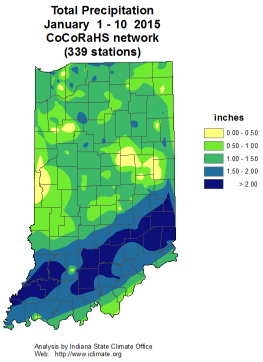
2.30”. Regionally about 1.2” of precipitation fell across northern Indiana, 1.3” in central, and about 1.7” through the south. These amounts are well above normal and equate to about 180% of normal in the north, 170% of normal in central counties, and 160% of normal across southern Indiana.

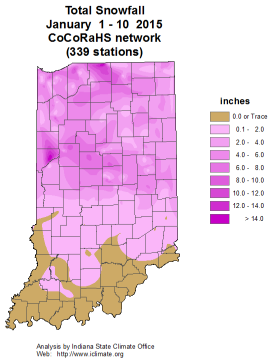
Snow was reported somewhere in Indiana every day beginning January 3rd. The largest single day amounts were collected the morning of January 6th across central Indiana. The CoCoRaHS observer in New Castle noted 7.0” that morning while 6.3” fell at Frankfort. In West Lafayette 6.1” was measured while in Attica and Muncie 6.0” was recorded. But the heaviest totals over the 10 days were seen in the northwest lake effect region. At South Bend 11.5” was totaled, Laporte had 10.4”, while two Wakarusa observers had 10.3” and 9.8”. In Hobart 9.5” was tallied. Generally in northern Indiana outside the lake effect region at least 2” was received over the 10 day interval. A trace or less of snow fell mostly south of a Vincennes to Brookville line.

Snowfall driven by wind gusts iced over highways, causing multiple accidents from January 6th through January 9th. On January 6th an icy I-65 led to numerous crashes in southern Jasper county, forcing the temporary closure of that highway. Several central Indiana schools cancelled class for a second day on January 7th due to severe wind chill.

Light snowfall the evening of January 8th caused multiple slide-offs and crashes in Tippecanoe county. I-65 had to be closed while accident scenes were cleared there and again in southern Jasper county. A few semi-trucks jackknifed due to the slick interstates.

Indiana travel conditions seemed to grow worse on January 9th. All interstates were ice covered and slick resulting in multiple slide-offs and spinouts as strong winds scattered the light snow cover from the night before. A 3-semi accident in Lake county on I-80 very early that morning resulted in the death of a UPS driver. Also early that morning on nearby I-65 a jackknifed semi forced that road to close. A travel advisory was posted in Lake, Porter, Newton, and Jasper counties where some schools decided to close due to blowing snow with wind chills near -25°F. Elsewhere across Indiana other state and US highways had to be temporarily closed January 9th due to the many slide-offs on ice covered highways.





January 11th – 17th

The fourth round of arctic air this month visited Indiana in mid-week. Yet the biggest weather impact this week was not again the cold but a freezing rain event at the start of the week. The brief warmup which brought in the ice was not welcomed. Hundreds of vehicle accidents occurred on January 12th and 13th. A dry and longer warming trend near the end of the week, however, was helpful in thawing highways and sidewalks, making Indiana travel safer.

High pressure had moved off the Delaware coast on January 11th. Southerly winds on the back side of this ridge transported warmer air into Indiana, raising the state temperature to 6°F below normal. Overnight a Texas storm system moved into Kentucky, tapping into Gulf moisture. Rain fell through the warming air over Indiana, then through a shallow layer of cold air before freezing when it hit the cold ground. By the next morning another blast of arctic air began moving across Indiana behind a cold front, changing the freezing rain to a mix with sleet and snow. Another cold front chased the first front through the state a few hours later, gradually lowering the state temperature to 10°F below normal.

On January 13th a high pressure center in the arctic cold mass drifted eastward across Wisconsin and Michigan, ending precipitation as Indiana temperatures fell to 12°F below normal, the coldest day of the week.

The high pressure ridge traveled southeast of Indiana the next two days, clearing skies and starting a sharp warming trend. By January 16th the state temperature had increased to 5°F above normal. A new storm system was developing over Minnesota on January 17th, pushing a warm front through Indiana as the week came to a close. The state was now squarely inside a warm air sector with temperatures soaring to 10°F above normal. A January thaw was underway, melting ice and snow remaining on the ground from earlier in the week. The weekly temperature averaged to 2°F below normal. Typically for this second week in January daily maximum temperatures should range between 31°F in northern Indiana to 41°F in the south. Daily minimums normally vary between 17°F and 24°F north to south. The warmest daily cooperative station temperature this week was 55°F at Boonville 1 s and the Evansville Airport on January 17th. The coldest daily minimum was -11°F at Lowell on January 15th.

The freezing rain event began late on January 11th and mixed with sleet and snow by the next morning, mostly impacting central Indiana. Ice accumulation north of I-70 averaged near 0.1" with up to 0.2" in the Lafayette and Tipton areas. Snow continued in the morning reports of January 13th and 14th but over a much smaller area as the storm departed the state. No precipitation fell the rest of the week. The heaviest single day of precipitation was recorded on January 12th due to the rain and freezing rain. A CoCoRaHS observer about 7 miles north of Indianapolis measured 0.90". South of the city an Indian Heights volunteer had 0.76". Rain gages in both Zionsville and Greencastle collected 0.72". The heaviest weekly precipitation was found on the north side of Indianapolis with 0.90". Two New Castle observers had 0.77" and 0.74". The town of Andrews also noted 0.74". Regionally about 0.3" of precipitation was recorded across northern Indiana, 0.5"

in central, and 0.4” in southern counties. These totals equate to about 80% of normal in the north, 120% of normal in central Indiana, and right about normal across the south third of the state.

The heaviest snowfall this week fell generally along a line from Morocco to Fort Wayne. Some of the heavier single day amounts included 4.0” at Auburn, and 3.0” at Wheatfield, Galveston, Huntington, and Columbia City, recorded the morning of January 12th. The largest weekly totals included CoCoRaHS sums of 3.6” at Bluffton, 3.5” in Fort Wayne, 3.4” in Huntington, and 3.0” at Leo and Columbia City. A trace or no snow fell this week mostly south of a Terre Haute to Portland line.

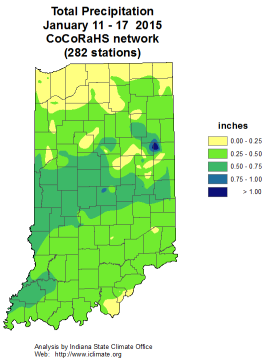
The freezing rain caused many traffic disruptions on January 12th. State police counted at least 150 vehicle accidents through that afternoon.

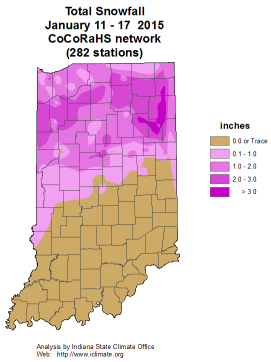
Allen, Lake, and Tippecanoe counties seemed to be prime areas for vehicle accidents. In Fort Wayne alone nearly 50 accidents were reported through the afternoon of January 12th and many schools there were closed.

In a Lake county incident, a hit semi jumped the median on I-65, jackknifed, and rolled over alongside the highway, spilling its cargo of steel coils. There were no injuries. The interstate was closed several hours while debris was cleared away.

There were several slide offs on state and US highways in Tippecanoe county. Rollover crashes were seen on other central Indiana highways. Black ice was cited as a common cause for accidents on January 12th and 13th, especially during darkness hours when melted ice refroze on highways.

On a positive note one dilemma of last winter is not in play this winter. Indiana counties report that salt supplies are holding up well. This was not the case a year ago when shortages already were widespread by this point in the winter season.





January 18th – 24th

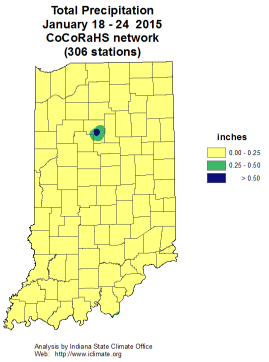
The influx of arctic air into Indiana was finally cut off this week and replaced by milder air imported from the Pacific Ocean. State temperatures were above normal on all 7 days. Also shut down was the transport of moisture into the state from the Gulf of Mexico. So not only was it a warm week but also a mostly dry one. The lack of storminess meant a welcome break from icy roads for Indiana travelers. There were no significant weather related accidents reported across the state this week.

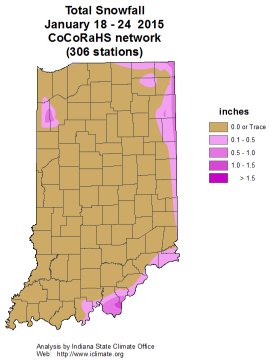
A cold front moved through Indiana to start the week. But unlike prior cold fronts this month there was no cold blast of air behind it. Rather a mild air mass of Pacific origin spread into the state with very little change in temperature, holding at near 11°F above normal. The next day a slowing weak cold front, this one of the arctic variety, stalled just to the north of Indiana. It remained there on January 20th while a complex of storm centers approached the state from the west. The next day the arctic air slid into eastern Canada rather than moving south and the tangle of fronts near Indiana merged and pushed southeast to the Carolinas. The new air mass behind the merged front was cooler than the air it replaced, dropping Indiana state temperatures initially to 10°F above normal.

Fronts still on the map dissolved on January 22nd as the strong high pressure ridge in the mild air mass sprawled over most continental states except along the Mexican border and east coast. As cooler air spread into Indiana the state temperature fell to 3°F above normal, then 2°F above normal by January 23rd. The next day a Texas storm hugged the Gulf and Atlantic coasts as it circled its way around the ridge towards New England. Back in Indiana the week ended with the state temperature at 4°F above normal. Overall for the week the state temperature averaged to near 8°F above normal. Usually at this point in January daily maximum temperatures range between 31°F and 41°F north to south across the state. Daily minimums typically vary between 17°F in far northern counties to 24°F in far southwest Indiana. The warmest daily cooperative station temperature this week was 57°F at Columbus, Evansville Airport, Mount Vernon, Tell City, and Brookville on January 19th, 20th, and 21st. The coolest minimum temperature in this network was 18°F at Huntington on January 18th.

Snowfall was limited to about 1” maximum in small areas at opposite ends of the state. The highest single day snowfall among CoCoRaHS observers was 1.2” recorded in Elizabeth in far southern Indiana. In northern Indiana Mount Ayr measured 1.1”, Fort Wayne had 0.6”, and Rensselaer noted 0.5”. Jeffersonville in southeast Indiana had 0.3”. The highest weekly totals were very close to these same amounts.

Precipitation totals were also light at less than 1”. Some of the heavier single day amounts were 0.38” and 0.32” at two locations in Logansport. A Rensselaer volunteer reported 0.20” while 0.19” was noted at Burnettsville. At Shamrock Lakes just 0.18” was observed. The largest weekly precipitation totals around the state included Logansport with 0.82”, Shamrock Lakes with 0.28”, and Andrews with 0.22”. Regionally on average about 0.05” was observed across northern and central Indiana and 0.1” over the south. These amounts equate to 10% or less of normal for all areas of the state this week.





January 25th – 31st

Gone this week were the extreme swings in state temperature seen thus far in January. What did continue was the drier than normal precipitation trend which began about mid-month. About 1 to 3 inches of snow fell this week in northeast and east central Indiana with generally less than an inch in the rest of the state. The lighter snowfall totals were reflected in another week of no reports of significant weather related accidents on Indiana roadways.

State temperatures began the week at 3°F above normal. A cold front was advancing through Indiana the morning of January 25th. An Alberta clipper system in Iowa rode along the cold front. By the next day the cold front and clipper system had moved on to the Virginias, allowing cooler air behind to drop Indiana temperatures to 3°F below normal. On January 27th two eastern storms merged off the New England coast into a historic snowstorm there.

High pressure in Quebec wedged southwest toward Indiana, forcing a nearby warm front to retreat into the Great Plains. Yet a warm up was underway in Indiana as the state temperature lifted to 1°F below normal. The high pressure wedge spread southward to the Gulf states and overhead Indiana on January 28th. The state temperature continued rising to 1°F above normal. The ridge finally relented the next day and slid to the Atlantic coast. The Midwest storm system was finally able to advance into Indiana. Its warm front edged into the southwest counties as the state temperature peaked at 4°F above normal on January 29th.

The storm raced northeast to New York the next day as its now occluded front and trailing cold front had passed through Indiana. High pressure behind the fronts tapped into cooler air, lowering the state temperature slightly to 2°F above normal.

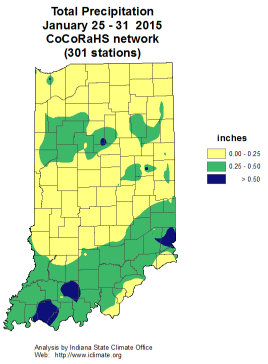
Weather systems now progressed quickly. High pressure in the Great Plains shifted east over Indiana on January 31st, providing a sunny and pleasant day. Yet another storm system raced toward Indiana in the final hours of January, primed to dump heavy snowfall over the north half of the state after the calendar flipped to February. The final day of January wrapped up with a state temperature at 1°F above normal. Overall for the week the state temperature averaged to 1°F above normal. Typically in late January the daily maximum temperature should range between 31°F in far

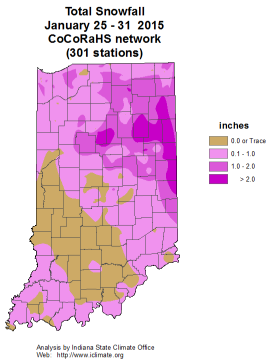
northern counties to 42°F in the southwest corner of the state. Daily minimums normally vary between 18°F and 24°F north to south across the state. The warmest high temperature in the cooperative observer network this week was 61°F at Mount Vernon on January 25th. The coolest low temperature in that network was 3°F at Angola and Farmland on January 28th.

Snowfall was reported in as a mix on January 26th and on January 27th and 30th. The heaviest single day snow amounts among CoCoRaHS volunteers were noted on January 26th in northeast and east central Indiana, including 3.5" in Bluffton, 3.3" at Bryant, and 3.0" at two locations in Portland and at Galveston. These amounts were close to the maximum weekly snow totals as well. For the week generally more than 2" was observed in east central counties, with 1" to 2" totals to the northeast. There was little to no snow in parts of west central and south central Indiana with less than an inch elsewhere.

A mix of rain and snow was reported on January 26th while just rain was noted on January 29th. The highest precipitation readings were taken on January 26th with 1.00" in Muncie, 0.65" in Galveston, and 0.60" in Boonville and Newburgh. Some of the highest precipitation numbers for the week were in scattered locations, including 1.00" in Muncie, 0.67" at Boonville, 0.66" in Huntingburg, and 0.65" at Galveston and Aurora. Generally up to 0.5" was tallied for the week in the southern third of the state and in part of west central Indiana. Less than 0.25" fell elsewhere. Regionally this week was drier than normal with about 0.2" reported in northern and central Indiana, and 0.35" in the south. These totals equate to about 50% of normal in the north, 40% of normal in central, and 60% of normal across southern Indiana.

Below normal precipitation in recent weeks has shown up on the January 27th edition of the US Drought Monitor. An abnormally dry rating (D0 category) has been introduced into parts of Lake, Porter, and Laporte counties in northwest Indiana. Traces of area along the Ohio River in extreme south central Indiana were also rated as abnormally dry with a tiny acreage rated in moderate drought (D1 category). This is an extension of very dry conditions in western Kentucky into fringe areas of Indiana. On a percentage basis the Drought Monitor calculates less than 1% of Indiana land area in D1 status with about 4% in the D0 category. The remaining 96% remains in normal soil moisture status for this time of year.





January 2015

Temperature

Region	Temperature	Normal	Deviation
Northwest	21.7	23.0	-1.4
North Central	21.2	23.2	-2.0
Northeast	20.6	23.1	-2.5
West Central	24.8	25.1	-0.4
Central	25.0	25.3	-0.4
East Central	24.0	24.7	-0.8
Southwest	30.4	29.9	0.5
South Central	30.2	29.9	0.3
Southeast	29.0	29.1	-0.1
State	25.3	26.0	-0.7

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	1.77	1.88	-0.11	94
North Central	1.82	2.05	-0.23	89
Northeast	1.78	1.98	-0.21	90
West Central	1.80	2.28	-0.48	79
Central	2.01	2.34	-0.33	86
East Central	2.36	2.29	0.07	103
Southwest	2.56	3.00	-0.44	85
South Central	2.72	3.10	-0.38	88
Southeast	2.46	3.00	-0.54	82
State	2.13	2.44	-0.31	87

Winter so far (December - January)

Temperature

Region	Temperature	Normal	Deviation
Northwest	27.0	25.8	1.2
North Central	26.8	25.9	0.8
Northeast	26.4	25.9	0.6
West Central	29.0	27.8	1.3
Central	29.5	28.0	1.4
East Central	28.7	27.4	1.2
Southwest	33.6	32.2	1.4
South Central	33.5	32.2	1.3
Southeast	32.7	31.6	1.1
State	29.7	28.6	1.2

Precipitation

Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	3.21	4.53	-1.33	71
North Central	3.37	4.84	-1.47	70
Northeast	3.35	4.67	-1.32	72
West Central	4.13	5.25	-1.12	79
Central	4.76	5.33	-0.57	89
East Central	4.86	5.16	-0.30	94
Southwest	6.26	6.53	-0.27	96
South Central	6.82	6.66	0.16	102
Southeast	6.17	6.41	-0.24	96
State	4.77	5.49	-0.72	87

2015 Annual (same as January)

Temperature

Region	Temperature	Normal	Deviation
Northwest	21.7	23.0	-1.4
North Central	21.2	23.2	-2.0
Northeast	20.6	23.1	-2.5
West Central	24.8	25.1	-0.4
Central	25.0	25.3	-0.4
East Central	24.0	24.7	-0.8
Southwest	30.4	29.9	0.5
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Precipitation

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West Central	1.80	2.28	-0.48	79
Central	2.01	2.34	-0.33	86
East Central	2.36	2.29	0.07	103
Southwest	2.56	3.00	-0.44	85
South Central	2.72	3.10	-0.38	88
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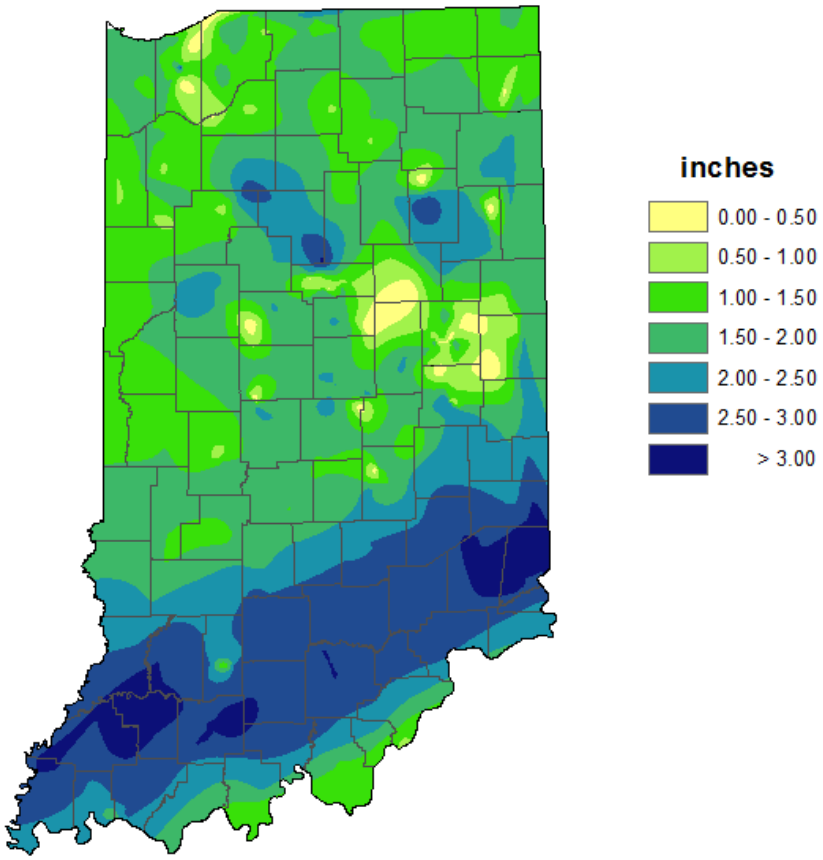
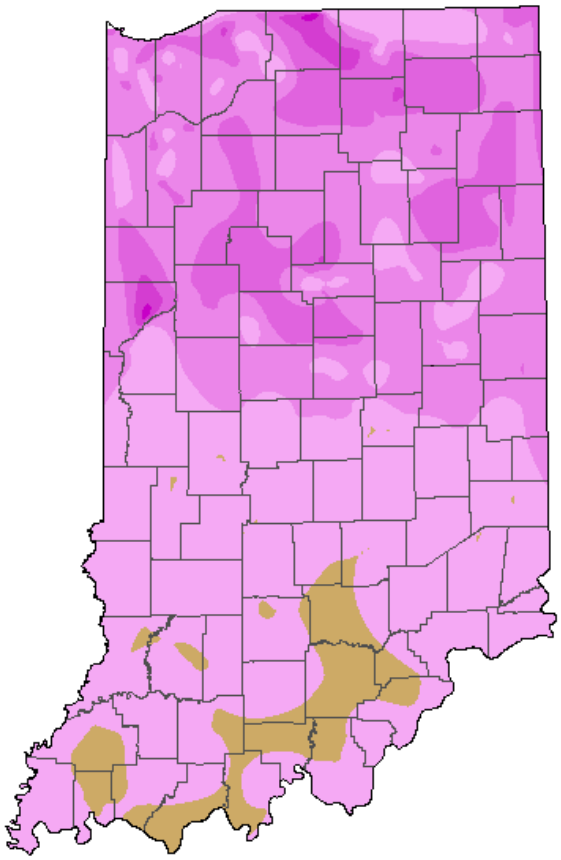
Total Precipitation
January 2015
CoCoRaHS network
(343 stations)



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

Total Snowfall
January 2015
CoCoRaHS network
(343 stations)



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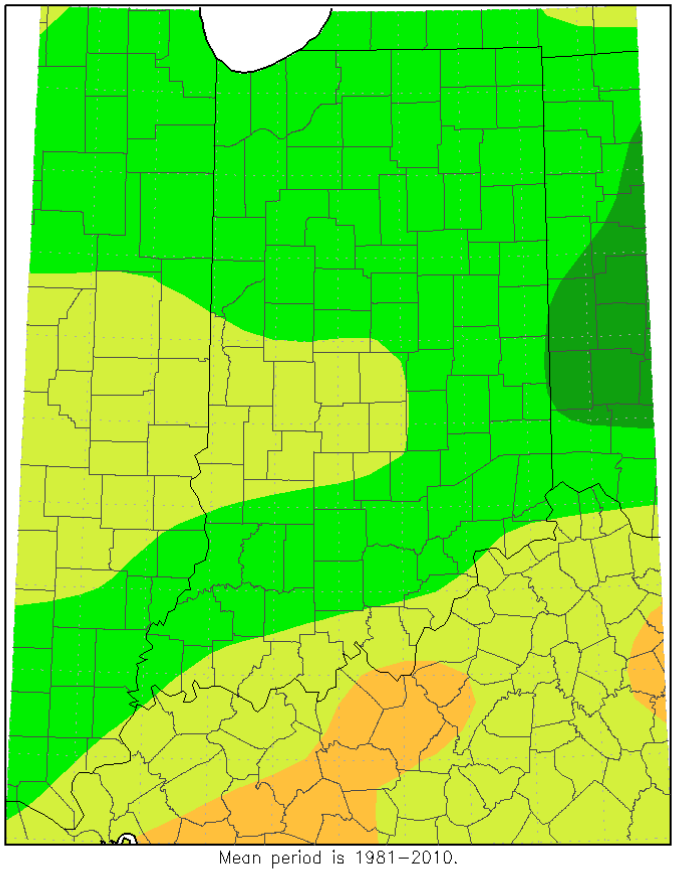
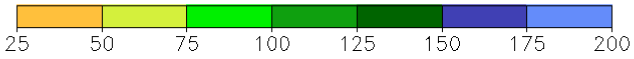
Web: http://www.iclimate.org

Accumulated Precipitation: Percent of Mean
January 1, 2015 to January 31, 2015



Mean period is 1981–2010.



Midwestern Regional Climate Center
cli–MATE: MRCC Application Tools Environment
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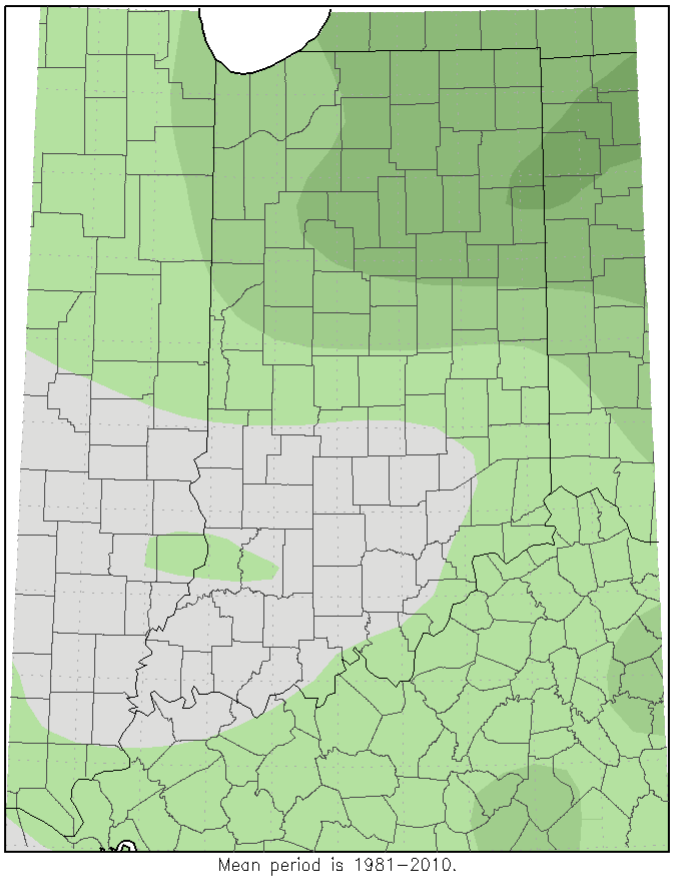
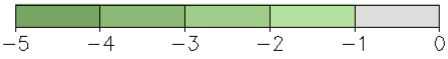
Average Temperature (°F): Departure from Mean
January 1, 2015 to January 31, 2015



Mean period is 1981–2010.



Midwestern Regional Climate Center
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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 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 what percentage of the state is drought free, and how much of the state is in drought by degree of severity (D1 - D4 category).

Statistics type: Traditional (D0-D4, D1-D4, etc.) Categorical (D0, D1, etc.)

Percent Area in U.S. Drought Monitor Categories

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2015-02-03	97.64	2.36	0.04	0.00	0.00	0.00
2015-01-27	96.10	3.90	0.03	0.00	0.00	0.00
2015-01-20	99.03	0.97	0.00	0.00	0.00	0.00
2015-01-13	99.03	0.97	0.00	0.00	0.00	0.00
2015-01-06	100.00	0.00	0.00	0.00	0.00	0.00

January 6th Drought Summary

January 13th Drought Summary

January 20th Drought Summary

January 27th Drought Summary