

weather, eliminating the need for expensive fuel dry down. Farmers were harvesting Indiana crops at a record pace this month.

Field crop fires were a constant threat this month. Fireman and farmers battled a number of large fires. Perhaps the largest occurred on September 23rd in a soybean field in southern Rush county which later jumped a county road into a corn field. State police ordered the evacuation of the town of Williamstown nearby. Eventually this fire traveled 2.5 miles. Farmers disked land around the fires in an attempt to stop them. A few homes were threatened by the spreading fires. Details of other major fires are listed in the following weekly weather narratives.

In anticipation of the increased fire danger due to very dry soil conditions most Indiana counties have now declared open burning bans. The first ban was declared on September 6th in Daviess county in southwest Indiana. Each week more counties joined the "ban wagon" as the drought intensified and moved northward. By the end of September 58 of the 92 counties had declared open burn bans.

September 1st – 10th

A week ago there were early signs that the hot and humid summer of 2010 may be finally fading away. Temperatures these first ten days of September confirm this cooling trend, as on only 3 of the 10 days were temperatures above normal. The slide began from the opening day, as state average temperatures plunged 14° to settle at 7° below normal by September 4th. A brief two day warm up lifted temperatures to 4° above normal on September 7th but cool weather returned the next day. The interval finished at 6° below normal, marking one of the coolest weeks in Indiana all summer long. Normally daily maximum temperatures this week should range between 82° and 88° north to south across our state. Daily minimums should vary from 60° in the far north to 65° in the southwest.

A stalled cold front to start the month gathered strength and finally pulled south through Indiana on September 3rd as Hurricane Earl spun along the Virginia coast. A large high pressure center escorted cool temperatures into the Midwest but this system moved quickly eastward allowing the brief warm up in Indiana. A larger dome of cool Canadian air reclaimed Indiana on September 8th, allowing pleasant refreshing air into the state for the remainder of the ten day interval.

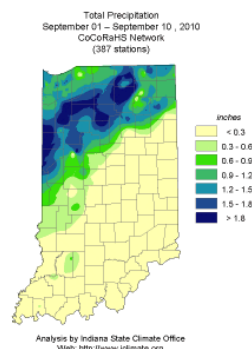
Nearly all the rainfall this week came with the passage of the first cold front with about a half inch reported in northern Indiana on each of September 2nd and 3rd. A few tenths fell in central Indiana while southern Indiana essentially remained dry. Very little to no rain fell in the state afterwards. For the week total rainfall averaged about 1.3 inches in northern Indiana, 0.4 inch in central, and just 0.1 inch in the south. A few northern Indiana cities did receive locally heavy rain on September 3rd, including 2.54 and 2.33 inches noted by two CoCoRaHS observers in Syracuse, and 2.41 inches in Leesburg. These two cities also reported the highest rainfall totals for the week: 2.79 inches and 2.63 inches at two Syracuse locations, and 2.61 inches and 2.56 inches at two points in Leesburg. Normally northern Indiana averages about 1.1 inch while the rest of the state expects 0.9 inch during this ten 10 day interval.

A pronounced drying trend has been underway across Indiana for the past month. Minor drought conditions across the southern half of Indiana in mid-August spread to cover two-thirds of the state by the start of September. The drought has intensified statewide since, evolving into a moderate drought over the southeast quarter of Indiana as of approximately September 7th. The Indiana office of the National Agricultural Statistics Service (NASS) September 10th survey of soil moisture conditions rated 78% of the state with short or very short topsoil moisture and 74% of subsoil moisture to be deficient.

The drought coupled with low humidity has caused field crops and natural vegetation to mature and dry down at a record pace. The NASS survey reports that 13% of the corn crop has been harvested, ahead of the record 10% in 1991. About 7% of soybeans have been harvested which would just be starting in a normal year. Natural field dry down has eliminated the need for post harvest drying in many places, saving fuel costs for farmers.

The drought has created ideal conditions not only for harvest but also wild fires. Field crop fires set off by combines prompted some counties to declare outdoor burn bans. Daviess county declared the first ban on September 6th, followed by Bartholomew, Hamilton, Lawrence, Spencer, and Warrick counties the next day. Three more counties established burn bans on September 8th: Orange, Shelby, and Wayne. The next day Crawford county joined the burn ban, extending the list to 10 counties with burn bans by September 10th.

Counties declaring open burn bans as of Sep 10th



September 11th – 17th

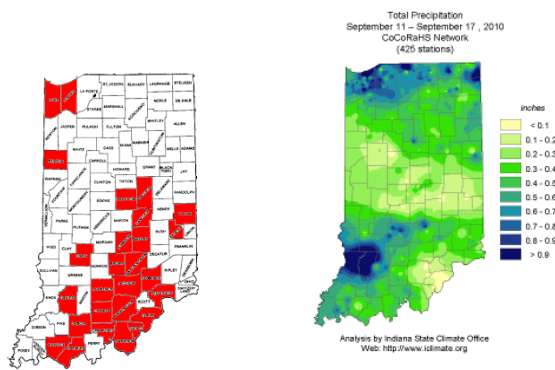
The passage of a series of weak weather fronts through Indiana this week provided little rain and no drought relief. A zonal jet stream present in the upper atmosphere across the country usually results in a quiet weather pattern and such was the case this week. Temperature swings were not as dramatic, starting the week at 4° below normal, then rising slightly to 2° above normal on September 13th. State average temperatures peaked at 5° above normal two days later before ending the week at 1° below normal. Overall for the week state average temperatures were 1° above normal for this time of year. Normally daily maximum temperatures vary between 77° and 84° north to south across Indiana in mid-September while daily minimums should range between 57° and 61°.

Rainfall continues to be scarce. Less than a third of an inch was common at the start of the week as the first cold front skipped quickly through Indiana. A weak second cold front on September 14th stalled in Kentucky, then returned northward as a warm front two days later. Finally a third cold front on September 17th also passed through Indiana but like the others carried very little moisture with many locations receiving less than 0.2 inch. For the week rainfall totals averaged just 0.5 inch in northern and southern Indiana, and just 0.3 inch in central sections. Normally nearly 0.9 inch would be expected in northern Indiana this week and about 0.8 inch elsewhere across the state. The heaviest one day total in Indiana was 0.99 inch reported by the CoCoRaHS observer in Plainville in Daviess county. This observer also noted the state's highest weekly total rainfall at 1.87 inch.

With the lack of significant rainfall the drought continued to intensify. Except for southwestern most counties, moderate (D1) drought conditions have developed across much of the southern third of the state (see drought maps in the last section of this report). The Indiana Agricultural Statistics Service survey now concludes that 84% of Indiana topsoil is short or very short of moisture while 80% of subsoils need moisture. Yet the dry soils have allowed crop harvest to continue at a record pace. About 27% of the state's corn crops have now been harvested, ahead of the 20% high mark noted in 1991. Soybean harvest has advanced to 20% complete, well ahead of the 3% normal progress. Mature grain continues to dry down rapidly in the field, eliminating the need for post harvest artificial drying in many cases. But there is new concern that the national projections of record Indiana soybean yield should be revised downward given that these drought conditions may shorten the seed-fill period. Field fires continued in the driest parts of Indiana which has hindered harvest in those areas.

As the drought intensifies the list of Indiana counties that have declared open burn bans has grown longer this week. New counties which have declared burn bans include: Owen and Johnson on September 13th, Dubois and Fayette on September 14th, Hancock, Jefferson, Jennings, and Washington on September 15th, Benton and Madison on September 16th, and Brown, Clark, Floyd, Harrison, Jackson, Lake, and Porter on September 17th. The total number of counties with burn bans is now 27 with more additions likely next week if the drought persists.

Counties declaring open burn bans as of Sep 17th



September 18th – 24th

Summer isn't quite finished yet! According to the calendar summer didn't end until September 23rd and nature complied by delivering a hot week to Indiana. Temperatures peaked in the 90's this week which is unseasonably warm for this time of year. At the start of the week temperatures were just 2° above normal but then jumped to 15° above normal by September 21st. A couple days later the anomaly stretched to 19° above normal before cooling a few degrees at the close of the week. Overall for this week temperatures averaged 11° above the long term normal. Usually in this week of September daily maximum temperatures range from 73° to 80° north to south across the state. Daily minimums normally vary between 52° in northern counties to 56° in the far southwest.

A weak cold front to start the week pulled stationary at the Ohio River on September 20th. The next day this front returned north bound as a warm front into upper Michigan, dragging summer heat behind it into Indiana. The strong Bermuda ridge in the upper atmosphere that has persisted over the southern states for months was at work again, pumping dry summer heat into Indiana and the Midwest.

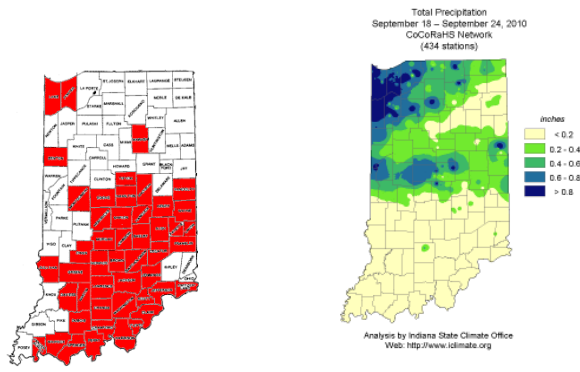
The storm track remains mostly north of Indiana keeping rainfall totals low as has been the case for several weeks now. Reports of light rainfall were largely confined to September 22nd and 23rd with mostly sprinkles noted on the remaining days this week. For the week rainfall averaged around 0.4 inch in northern and central Indiana and less than a tenth of an inch across the south. These totals are below the normal weekly amounts of 0.7 inch in northern and central sections and about 0.8 inch in the south. As expected a few locally heavier showers were noted, such as 1.50 inch observed by the CoCoRaHS reporter in Portland on September 23rd. The Syracuse observer recorded 1.08 inch the previous day while 1.03 inch was measured at Covington on September 23rd. Rensselaer had the heaviest weekly CoCoRaHS rainfall total at 1.63 inch. The Indianapolis airport is recording its longest dry spell in 47 years as its last significant rainfall occurred on July 28.

With continued subnormal rainfall the Indiana 2010 drought continues to intensify. About 60% of Indiana is now in drought status, primarily the central and southern areas. Nearly half the state is now classified to be in at least moderate drought while severe drought has developed over about 20% of the state mostly in southeastern counties (see drought maps in the last section of this report). The weekly soil moisture survey by the Indiana Agricultural Statistics Service pegs 86% of Indiana topsoil as short or very short of moisture and 82% of subsoil moisture in these categories. The light showers this week did not interfere with the record pace of crop harvest. About 46% of Indiana's corn has already been harvested and about 41% of soybeans. Soils are too dry in southern Indiana at this time to plant wheat and pasture is in generally poor shape.

Wild fires continue to be a major impact and concern of the current Indiana drought. Numerous fires have been reported in farm fields across Indiana. On September 21st, a corn field caught fire in southwest Marion county, requiring 100 firefighters to control the 150 acre blaze. Gusting winds carried the fire to different sections of the field while wind blown embers slightly damaged the roof of a nearby house. On September 23rd, a large fire was burning in a soybean field in southern Rush county. The fire later jumped a county road into a corn field. State police then ordered the evacuation of the town of Williamstown nearby. Eventually this fire had traveled 2.5 miles. Farmers disked land around the fires in an attempt to stop them. A few homes were threatened by the spreading fires. Other field fires this week were reported in Carroll, Johnson, Shelby, Decatur, Benton, and White counties.

In anticipation of the continued threat of wild fires, 21 more counties this week joined the list of Indiana counties which have declared burn bans and advisories. These additional counties were Decatur, Morgan, and Switzerland on September 20th; Boone, Hendricks, Randolph, and Union on September 21st; Martin, Rush, Sullivan, and Vanderburgh on September 22nd; Henry, Marion, Monroe, Montgomery, and Scott on September 23rd; and Franklin, Greene, Perry, Tipton, and Wabash on September 24th. The total number of counties with burn bans is now 48, more than half the state's 92 counties. More additions are likely next week if the drought persists.

*Counties declaring open burn
bans as of Sep 24th*



September 25th – 30th

It was a rare cool week these final days of September as a deep low pressure center in the upper atmosphere continuously tapped cool dry air from Canada. On September 26th through the 28th daily temperatures remained about 4° below normal across the state. Temperatures rose slightly to 1° below normal to close out the week and month. Overall for the week state average temperatures were 2° below normal. Daily maximum temperatures normally range from 73° to 80° north to south across Indiana while daily minimums typically vary between 51° in the northern tier of counties to 54° in the far southwest.

Expanding high pressure in the western half of the country pinched closed a low pressure trough over Indiana. This allowed cool Canadian air to filter into Indiana all week long until this trough merged with the remains of tropical storm Nicole. This system moved east to the Atlantic coast where it then produced substantial flooding. As expected the trough produced frequent rainfall while over Indiana but the daily amounts were very light. Only one cold front passed through Indiana on September 26th.

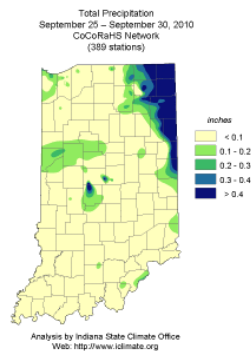
On average only a few hundredths of rain fell each of the first four days. For the week totals averaged less than 0.2 inch in northern Indiana, about 0.1 inch in central, and just 0.05 inch in the south. Normally this last week of September about 0.6 inch should fall across the state. The heaviest single day rainfall amounts included 0.73 inch at Butler, 0.64 inch in Hudson, and 0.61

inch at Fort Wayne. The largest weekly total was 0.73 inch at Butler and 0.62 inch in Fort Wayne according to the CoCoRaHS observers in these locations.

Drought conditions in Indiana continue to worsen. About 80% of Indiana is now in drought status, including about 20% classified as in severe drought (D2 class), another 30% in moderate drought status (D1 class), and the approximately remaining 30% of the drought region labeled as unusually dry (D0 class), the beginning stages of drought (see drought maps in the last section of this report). The region on Indiana generally south of I-70 is in the D1 or D2 categories. The western tier of counties north of Terre Haute and southern parts of north central Indiana are the only parts of the state still drought free. Much of the rest of Indiana including the northeast is in D0 status now. Some good news is that field crops are being harvested at a record pace with about 60% of Indiana's corn and soybeans completed.

Field fires persist along with the drought. In attempts to control human causes of these fires 10 more counties joined the list of those in Indiana that already have declared burn bans. The new counties which have enacted burn bans this week include Delaware and Ohio counties on September 25th; Blackford, Carroll, and Tippecanoe counties on September 27th; Gibson county on September 28th; Clay county on September 29th, and Miami, Posey, and Vermillion counties on September 30th. The total number of counties with burn bans is now 58, nearly two thirds of the 92 counties in the state. More counties will likely join this list if the drought persists into next week.

Counties declaring open burn bans as of Sep 30th



September Summary

Temperature

Region	Temperature	Normal	Deviation
Northwest	65.3	64.6	0.7
North Central	64.9	63.9	0.9
Northeast	64.7	63.5	1.2
West Central	67.3	65.9	1.4
Central	67.3	65.3	2.0
East Central	66.9	64.5	2.4
Southwest	70.2	68.2	1.9
South Central	69.8	67.5	2.3
Southeast	69.5	66.9	2.6
State	67.4	65.7	1.7

Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	2.79	3.21	-0.42	87
North Central	2.24	3.30	-1.06	68
Northeast	2.10	3.19	-1.09	66
West Central	1.93	3.03	-1.10	64
Central	0.71	2.99	-2.27	24
East Central	0.86	2.79	-1.93	31
Southwest	0.91	3.13	-2.22	29
South Central	0.62	3.11	-2.49	20
Southeast	0.53	2.97	-2.45	18
State	1.40	3.09	-1.69	45

Autumn 2010 to date (same as September)

Region	Temperature	Temperature	
		Normal	Deviation
Northwest	65.3	64.6	0.7
North Central	64.9	63.9	0.9
Northeast	64.7	63.5	1.2
West Central	67.3	65.9	1.4
Central	67.3	65.3	2.0
East Central	66.9	64.5	2.4
Southwest	70.2	68.2	1.9
South Central	69.8	67.5	2.3
Southeast	69.5	66.9	2.6
State	67.4	65.7	1.7

Region	Precipitation	Precipitation		
		Normal	Deviation	Percent of Normal
Northwest	2.79	3.21	-0.42	87
North Central	2.24	3.30	-1.06	68

Northeast	2.10	3.19	-1.09	66
West Central	1.93	3.03	-1.10	64
Central	0.71	2.99	-2.27	24
East Central	0.86	2.79	-1.93	31
Southwest	0.91	3.13	-2.22	29
South Central	0.62	3.11	-2.49	20
Southeast	0.53	2.97	-2.45	18
State	1.40	3.09	-1.69	45

2010 Annual to date

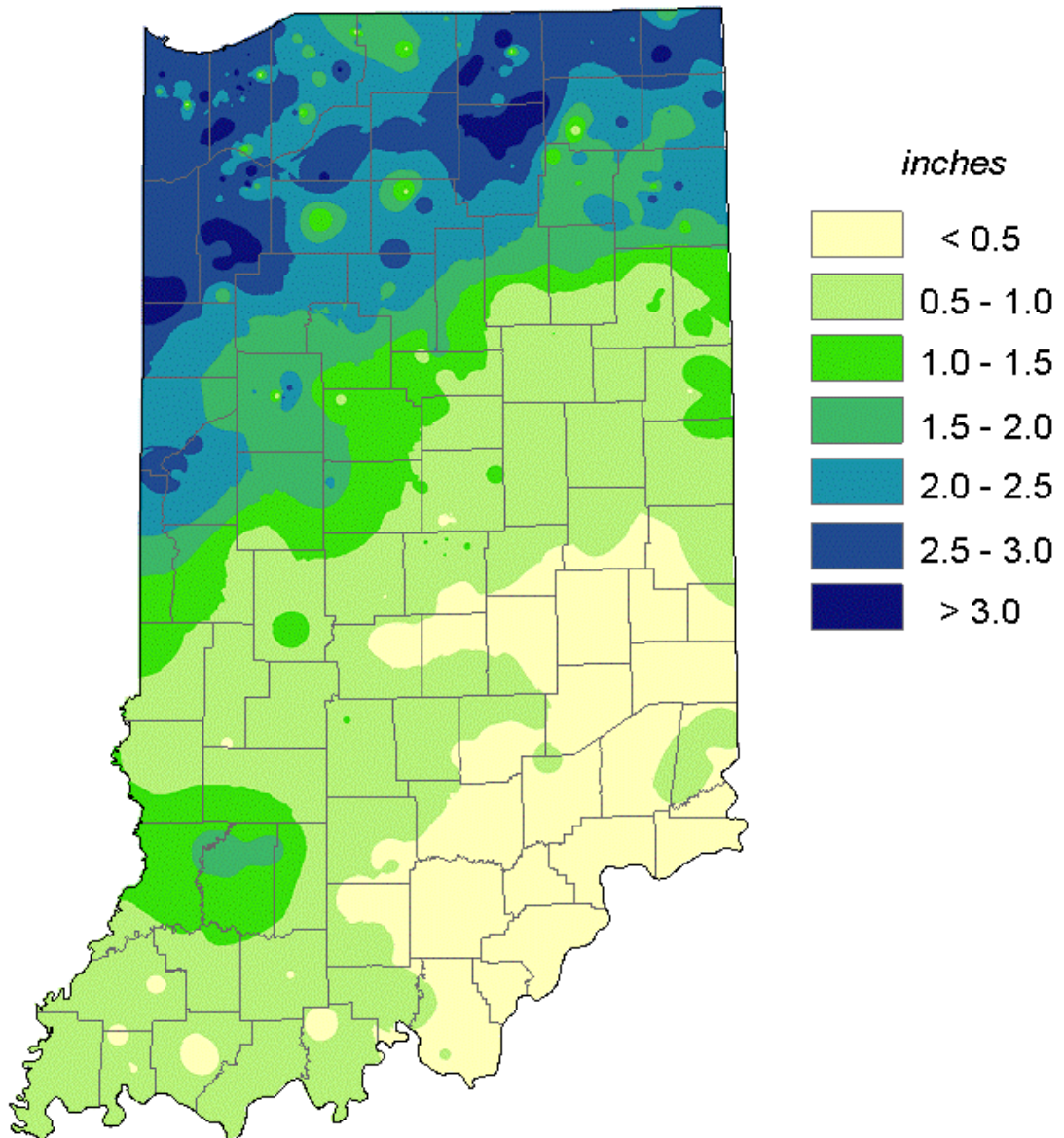
Temperature

Region	Temperature	Normal	Deviation
Northwest	55.1	53.5	1.7
North Central	54.9	53.0	1.9
Northeast	54.8	52.6	2.2
West Central	56.5	55.1	1.4
Central	56.3	54.6	1.7
East Central	55.7	53.8	1.9
Southwest	59.8	58.3	1.5
South Central	58.9	57.7	1.2
Southeast	58.2	56.8	1.4
State	56.8	55.1	1.7

Precipitation

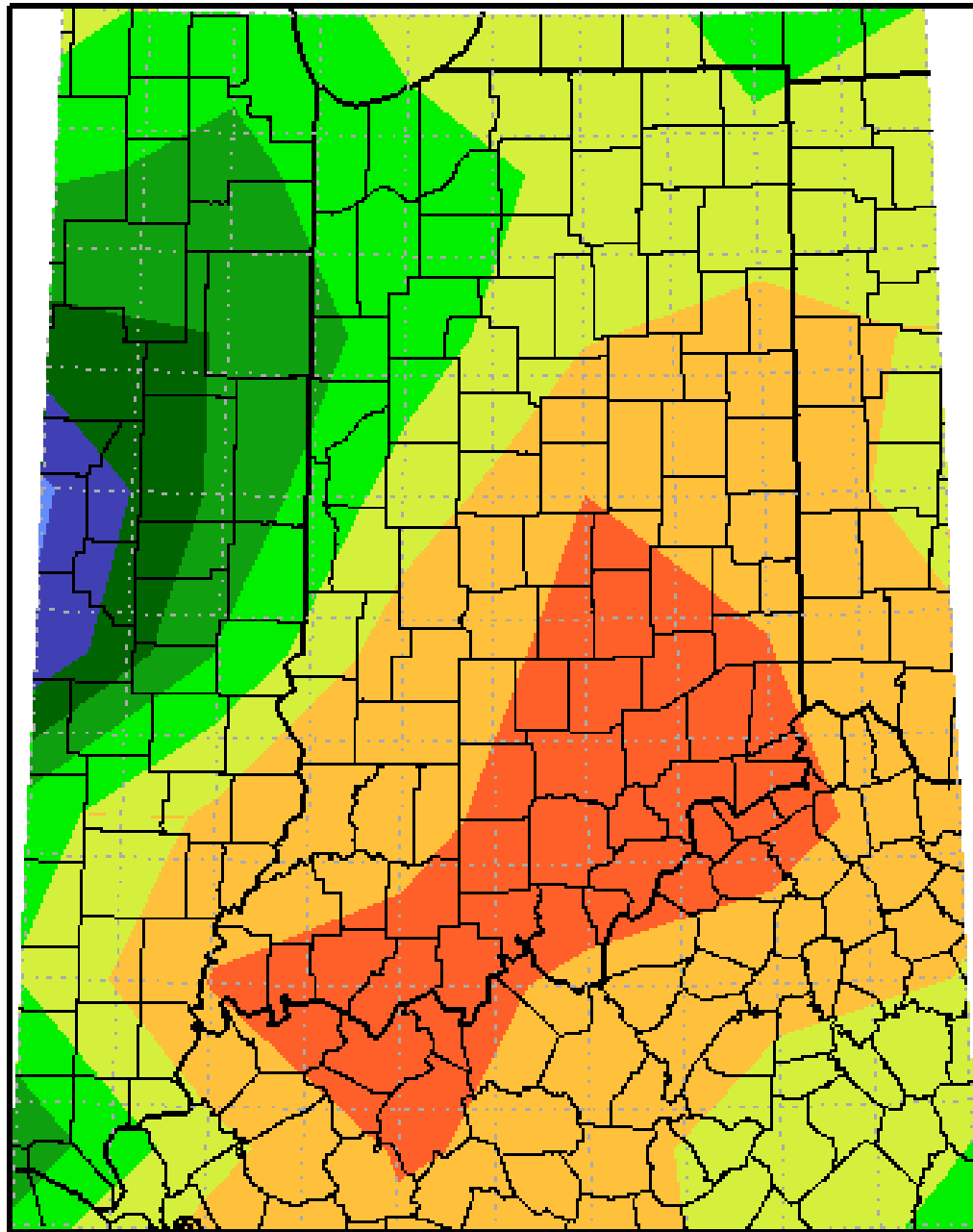
Region	Precipitation	Normal	Deviation	Percent of Normal
Northwest	31.16	29.28	1.88	106
North Central	29.28	29.30	-0.02	100
Northeast	27.98	28.34	-0.36	99
West Central	30.55	31.77	-1.22	96
Central	30.56	31.30	-0.73	98
East Central	29.54	30.27	-0.73	98
Southwest	29.73	34.71	-4.98	86
South Central	29.91	35.04	-5.13	85
Southeast	29.49	34.02	-4.54	87
State	29.90	31.63	-1.73	95

Monthly Precipitation
September 01 – September 30, 2010
CoCoRaHS Network
(453 stations)



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

**Total Precipitation Percent of Mean
September 1, 2010 to September 30, 2010**

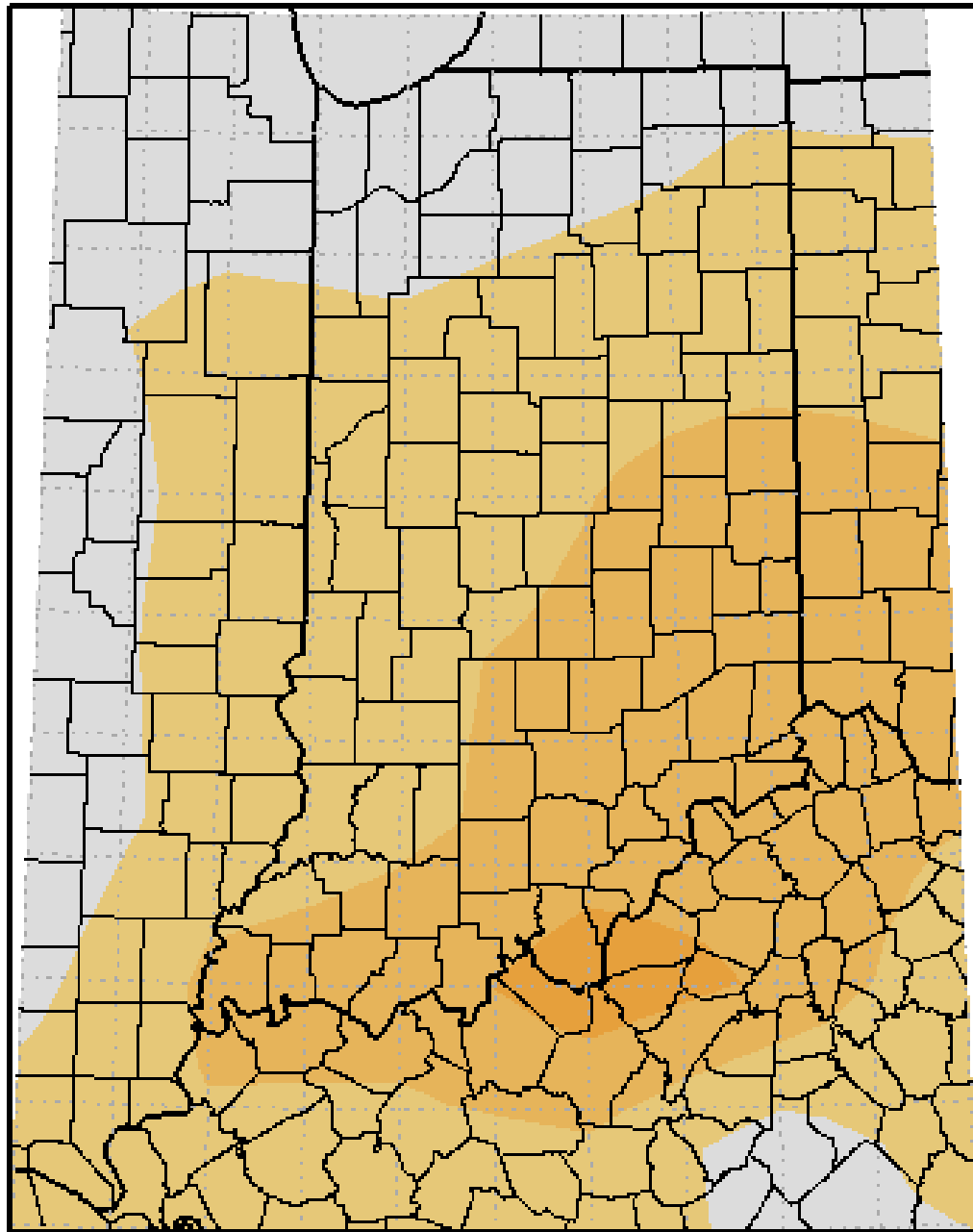


Midwestern Regional Climate Center

Illinois State Water Survey

Champaign, Illinois

**Average Temperature Departure from Mean in Degrees F
September 1, 2010 to September 30, 2010**



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.

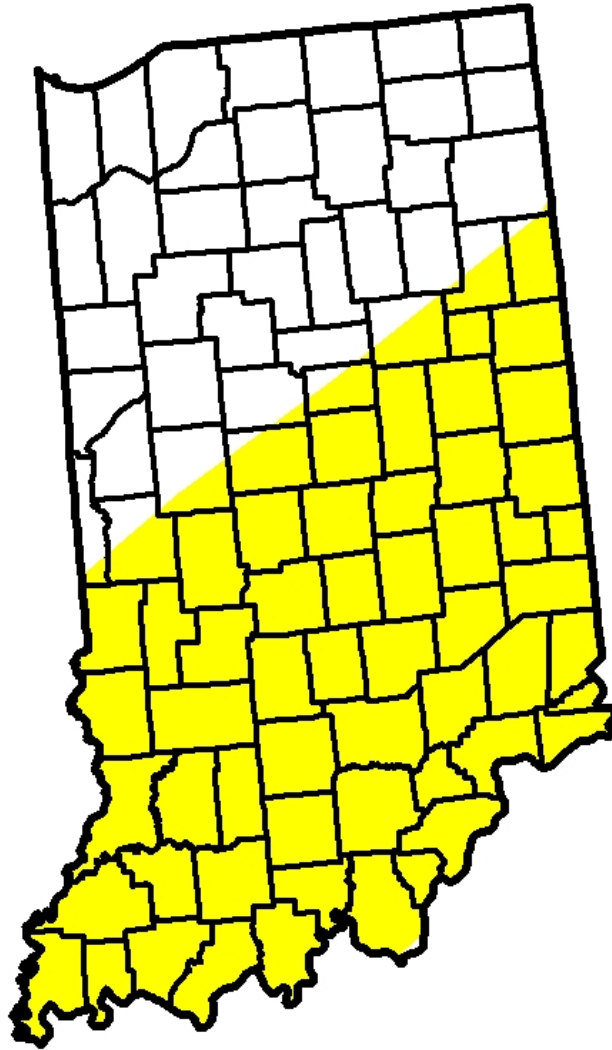
For example, September 28th has 20.27% of Indiana under no drought, and 79.73% of Indiana under at least D0 through D4 drought status. This is followed by 47.70% as D1 through D4 status. To obtain the amount that is D0 status, simply subtract the D1-D4 column from the D0-D4 column, thus giving you the percentage of area with abnormally dry conditions (32.03%) . 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:

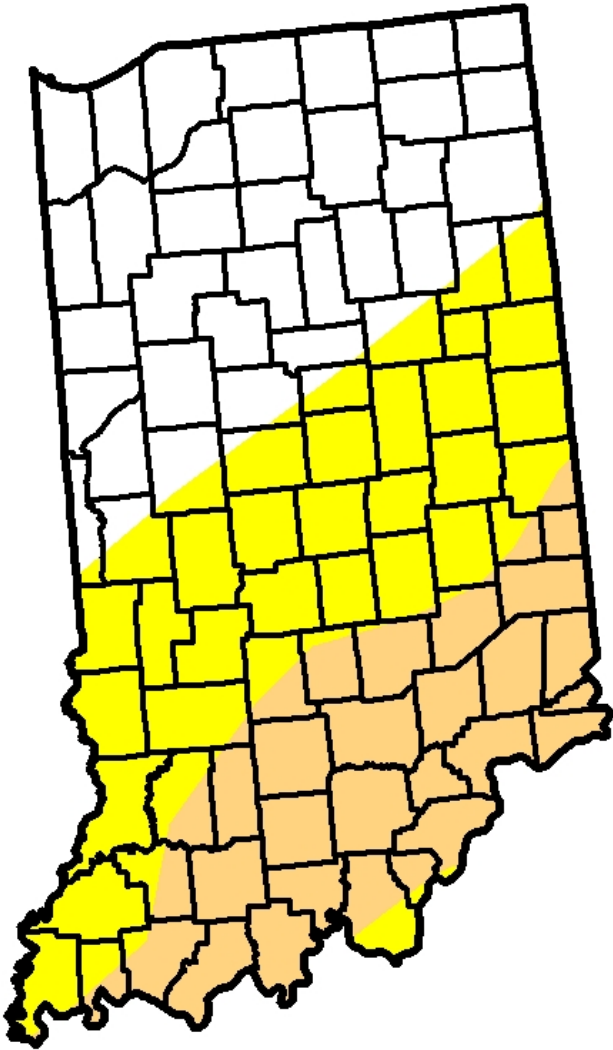


Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
09/28/10	20.27	79.73	47.70	18.50	0.00	0.00
09/21/10	38.60	61.40	42.50	18.50	0.00	0.00
09/14/10	38.60	61.40	25.88	0.00	0.00	0.00
09/07/10	38.65	61.35	0.01	0.00	0.00	0.00

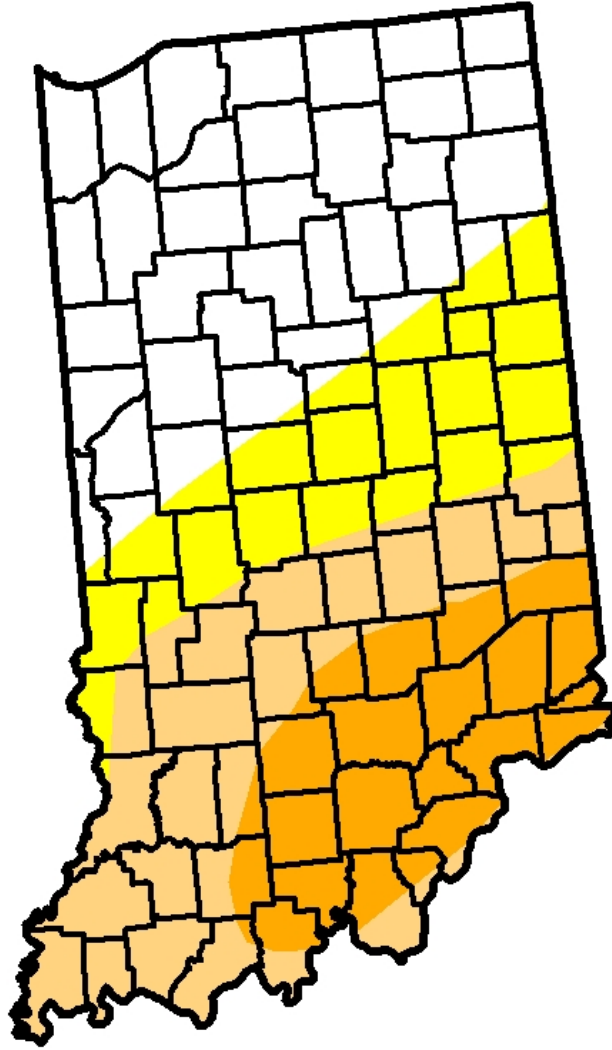
September 7th Drought Summary



September 14th Drought Summary



September 21st Drought Summary



September 28th Drought Summary

