

MONTHLY REPORT OF HYDROLOGIC CONDITIONS

REPORT FOR:
MONTH YEAR
January 2009

TO: Hydrologic Information Center, W/OS31
NOAA's National Weather Service
1325 East West Highway
Silver Spring, MD 20910-3283

SIGNATURE
John Gordon, MIC
Mike Callahan, Hydrologist

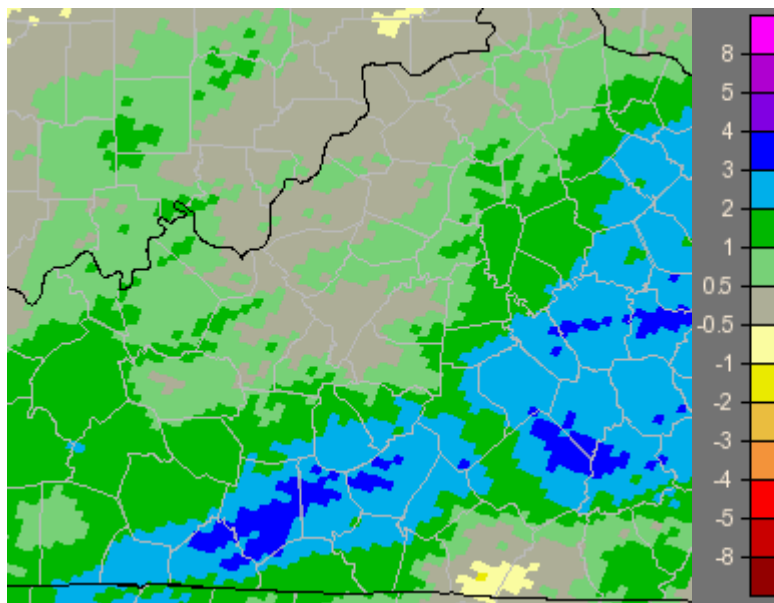
DATE
February 8, 2009

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

An X inside this box indicates that no flooding occurred within this hydrologic service area.

The hydrologic service area (HSA) for this office covers Central Kentucky and South Central Indiana.

January was a wet month over the southern parts of the HSA but near normal over the north. Most locations in the south collected between one and three inches above normal amounts, mostly due to a single event. The wettest county was Barren. Here are specific values for major airports: Louisville 3.63 inches, 0.35 inches above normal; Lexington 4.32 inches, 0.98 inches above normal; Bowling Green 5.45 inches, 1.30 inches above normal.



January 2009 Precipitation Departure from Normal

Most of the precipitation that fell this month came in two periods. The first came on the 3rd through the 6th, when most locations collected around an inch of rain. The big event was a prolonged winter storm that struck on the 27th and 28th. It dumped between 2 and 3 inches of liquid in the north and up to 6 inches in the south. The liquid was a mixture of snow, sleet and freezing rain. Up to seven inches of snow were observed in the north but almost all locations saw between a half and one inch of ice, making this one of the worst ice storms in history in Kentucky. The far south collected heavy rain which resulted in minor flooding on the Green and Barren Rivers in Southern and Central Kentucky. Some minor flooding also occurred on Stoner Creek north of Lexington. Indiana saw no flooding. Fortunately, no injuries or damage was reported due to the floods. The ice, however, caused widespread tree damage

and power outages. At the time of this report, many areas still do not have power. Most of Central Kentucky received a presidential disaster declaration, the first for President Obama.

At the end of the month, soils were wet, and stream flows were above normal. Reservoir levels were near normal except in the Green River Basin where they were between 10 and 20 feet above pool. No areas remained in a drought.

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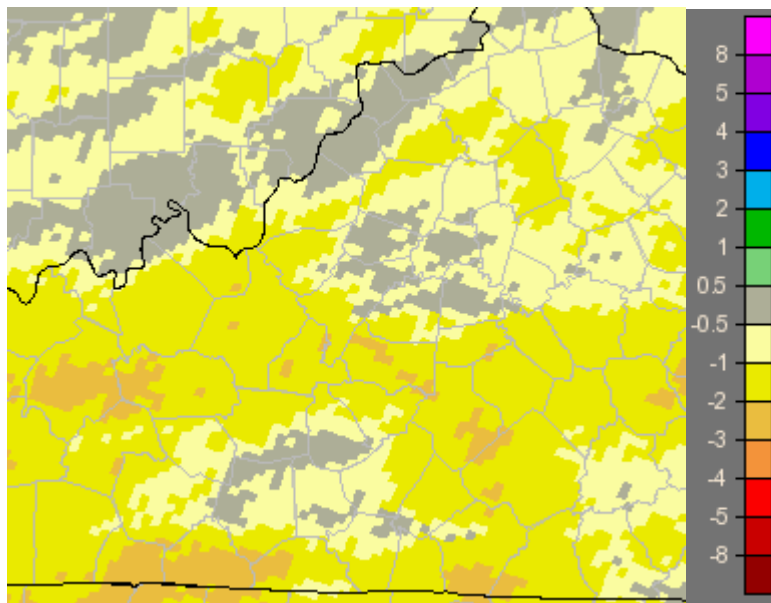
DATE
March 10, 2009

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

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The hydrologic service area (HSA) for this office covers Central Kentucky and South Central Indiana.

Precipitation totals for February 2009 were near normal in the north, but one to three inches below normal in the south. However, there was an area of near normal precipitation in the south central section. The driest areas were in Allen County. Here are specific values for major airports: Louisville 2.02 inches, 1.05 inches below normal; Lexington 2.54 inches, 0.73 inches below normal; Bowling Green 3.35 inches, 0.80 inches below normal.



February 2009 Precipitation Departure from Normal

Minor flooding from the rains and ice at the end of January carried over into the first days of February on the middle of the Green River. All flooding had ended by the afternoon of the 3rd.

Little precipitation fell during the month, until the 10th and 11th. During those two days, portions in the north collected about an inch of rain, amounts were lighter in the south. The situation was reversed on the 17th and 18th, when locations in the south saw an inch of rain but locations in the north recorded lighter amounts. The final three days of the month gave everybody around an inch and kept the month from being too dry.

At the end of the month stream flows, reservoir levels, and soil moisture were near normal.

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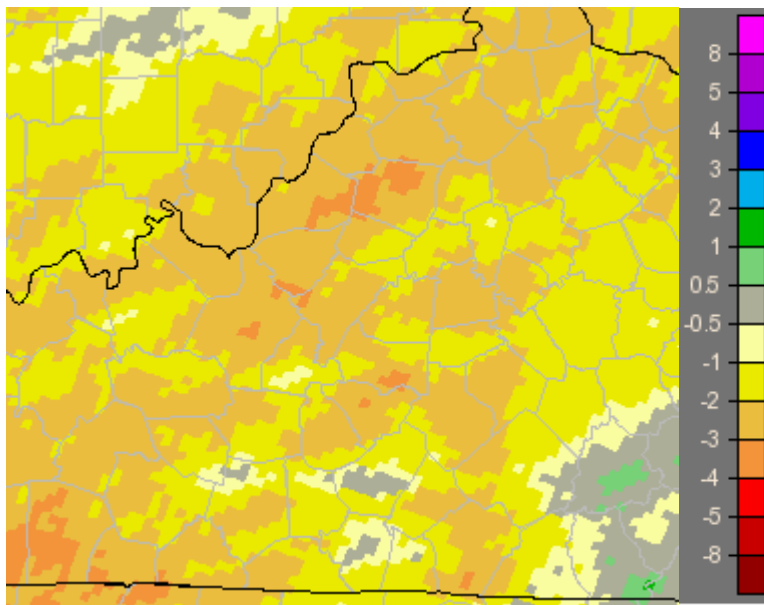
DATE
April 3, 2009

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

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The hydrologic service area (HSA) for this office covers Central Kentucky and South Central Indiana.

Precipitation totals for March 2009 were one to three inches below normal over much of the HSA. The driest areas were in Logan County. Here are specific values for major airports: Louisville 1.36 inches, 3.05 inches below normal; Lexington 2.39 inches, 2.02 inches below normal; Bowling Green 3.07 inches, 1.90 inches below normal.



March 2009 Precipitation Departure from Normal

A winter storm brought the first significant snow of the season to the south on the 11th and 12th. Locations there collected around a half inch of liquid for the two days with one to three inches of snow. Locations in the north received little precipitation. Most of the rain during the month fell from the 24th through the 28th. Towns in the south saw up to two inches while in the north amounts were again lower.

At the end of the month, stream flows and reservoir levels were near normal but soil moisture was below normal.

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April 2009

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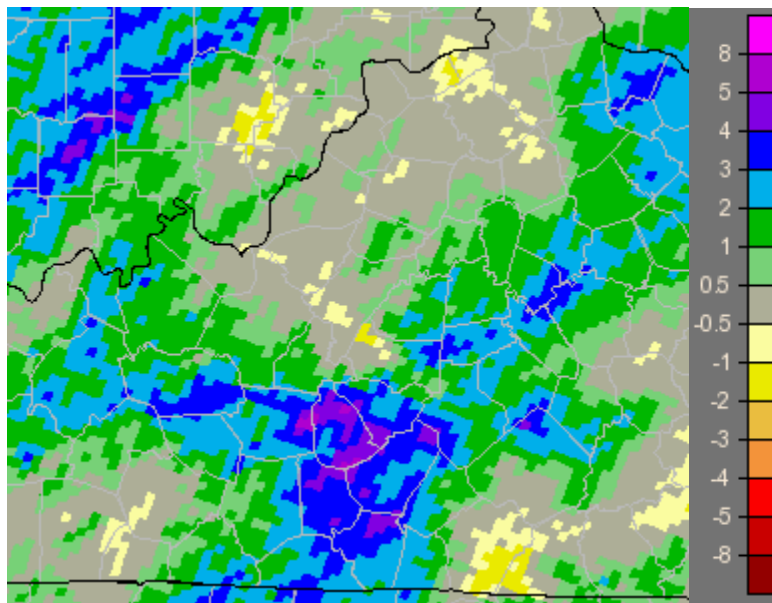
DATE
May 7, 2009

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

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Precipitation totals for April 2009 were near normal over much of the HSA, however, parts of South Central Kentucky exceeded normal by as much as 4 inches. The wettest areas were in Green County. Here are specific values for major airports: Louisville 4.43 inches, 0.52 inches above normal; Lexington 4.78 inches, 1.11 inches above normal; Bowling Green 4.82 inches, 0.83 inches above normal.



April 2009 Precipitation Departure from Normal

The first week of April was wet with most locations adding up between one to three inches of rain and the largest amounts in the south. The 10th through the 14th was another wet period where most spots collected from one to two inches with the highest amounts in the east. Yet another wet period ran from the 18th through the 21st. This time towns saw between one to two inches with the higher amounts in the north. The month ended on the damp side on the last three days but amounts were light. In general, the rain in April was just what one needed without receiving too much.

At the end of the month, stream flows, reservoir levels, and soil moisture were near normal.

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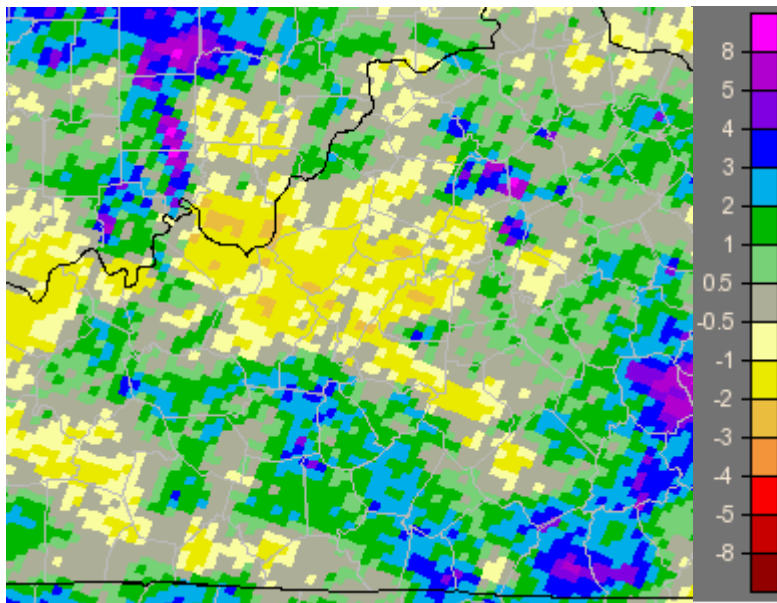
DATE
June 4, 2009

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Precipitation totals for May 2009 varied greatly from two inches below normal to four inches above. The wettest areas were in Orange County. Here are specific values for major airports: Louisville 4.59 inches, 0.29 inches below normal; Lexington 6.04 inches, 1.26 inches above normal; Bowling Green 6.28 inches, 0.92 inches above normal, Frankfort 4.99 inches, 0.38 inches above normal.



May 2009 Precipitation Departure from Normal

The first two weeks of May were wet, especially from the 7th through the 9th. Most locations collected at least an inch of rain during that period but some towns in Central and Southern Kentucky saw much more, with some locations seeing over four inches. This resulted in flash flooding on the 8th which washed out some roads and bridges. The resulting river flooding affected the Green and Rough Rivers in Kentucky and was only minor since the area of coverage was not widespread. However, there was a flood related death on the 9th due to a pickup driving around barriers and attempting to cross a low-water crossing near Franklin KY in Simpson County. The road was flooded by 4 feet of water from the West Branch of Drakes Creek.

There was another period of light rain from the 13th through the 16th. However, most locations collected less than a half inch on any one day.

Finally, heavier rains fell from the 25th through the 30th. During this time, most locations collected between one and two inches of rain with the greatest amounts in the south. This rain brought most of the south to above normal totals.

At the end of the month, stream flows and soil moisture were near normal. Reservoir levels were also near normal except at Barren River Lake and Patoka Lakes where levels were about 4 feet above normal.

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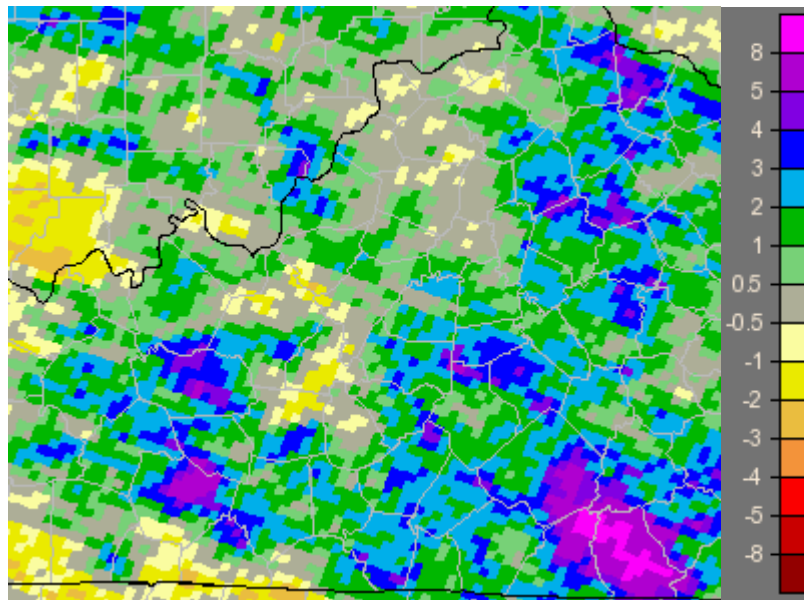
DATE
July 17, 2009

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

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Precipitation totals for June 2009 varied greatly from two inches below normal to four inches above. The wettest areas were in Warren County. Here are specific values for major airports: Louisville 9.22 inches, 5.46 inches below normal; Lexington 5.19 inches, 0.61 inches above normal; Bowling Green 7.92 inches, 3.63 inches above normal, Frankfort 4.86 inches, 0.46 inches above normal. This was the second wettest June on record in Louisville. However, the rain was not widespread across all of Louisville. Just down the road at Bowman Field, the total was 6.57 inches which was only 2.81 inches above.



June 2009 Precipitation Departure from Normal

The first period of heavy rain fell from the 2nd through the 4th when most locations collected between one and two inches. Another period of heavy rain fell from the 10th through the 12th where most towns saw between one and three inches. This rain caused some near bankfull rises on the Green River in Kentucky. Another inch was recorded in the north and west from the 14th through the 16th. The remainder of the month had scatted showers and thunderstorms and patterns were difficult to discern.

At the end of the month, stream flows, reservoir levels, and soil moisture were all near normal.

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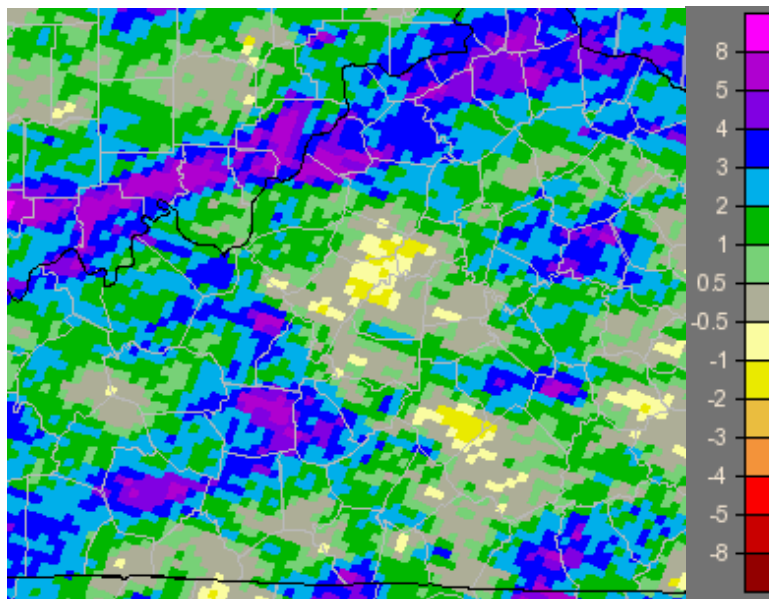
DATE
August 11, 2009

When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).

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July 2009 was a cool and wet month. Precipitation totals varied from near normal to five inches above. The wettest areas were in Crawford County. Here are specific values for major airports: Louisville 6.02 inches, 1.72 inches above normal; Lexington 7.57 inches, 2.76 inches above normal; Bowling Green 8.89 inches, 4.35 inches above normal, Frankfort 7.16 inches, 2.98 inches above normal. This was the coldest July on record in Frankfort, the second coldest in Louisville and Lexington, and the fourth coldest in Bowling Green. The wedge of below normal totals southeast of Louisville in the map below is not correct and should be ignored.



July 2009 Precipitation Departure from Normal

Rain was due to scattered thunderstorms and patterns were difficult to discern through the 21st. From the 22nd through the 25th, most locations picked up between one to three inches with the most rain in the east. The final four days of the month were wet with most locations collecting between one and three inches with the wettest areas in the north.

This last shot of rain triggered some minor flooding on Stoner Creek in East Central Kentucky on the last day of the month. Even though the flooding was minor, river flooding of any kind is rare in the HSA during the summer months.

At the end of the month, due to the recent rainfall, stream flows and soil moisture were above normal. Reservoir levels were near normal.

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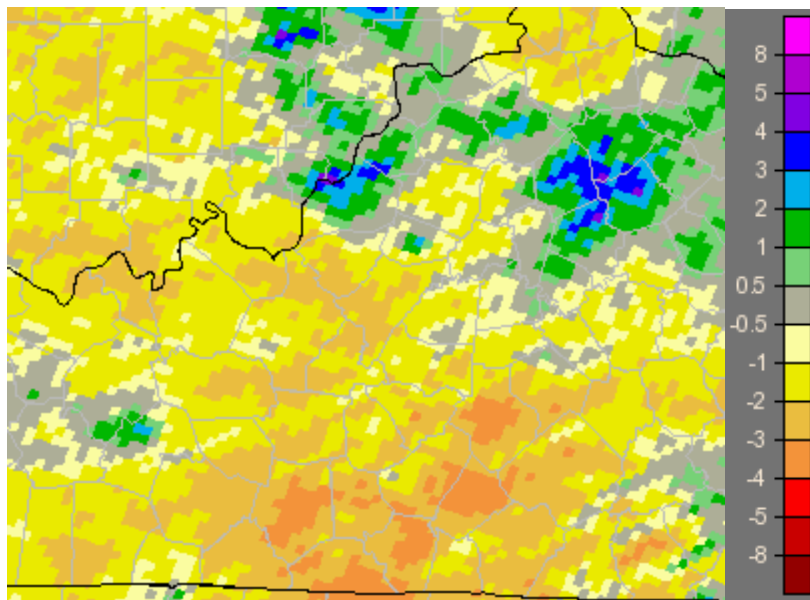
DATE
September 10, 2009

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August 2009 was a dry month except for the areas around Louisville and Lexington. Precipitation totals varied greatly from three inches below to over four inches above. The wettest areas were in near the Ohio River between Clark County IN and Jefferson County. Here are specific values for major airports: Louisville 5.88 inches, 2.47 inches above normal; Lexington 4.53 inches, 0.76 inches above normal; Bowling Green 1.77 inches, 1.59 inches below normal, Frankfort 2.56 inches, 1.02 inches below normal.



August 2009 Precipitation Departure from Normal

The big rain this month occurred on the 4th. A stationary thunderstorm dumped up to seven inches on downtown Louisville near and just across the Ohio River, most of this in two hours. This resulted in massive flash flooding throughout the metropolitan area, including the cities of Jeffersonville and New Albany in Indiana. The flooding was some of the worst seen in Louisville and paralyzed the city for several hours. Major highways and interstates were closed. The rain completely overwhelmed the sewage system and backups flooded hundreds of basements. The treatment plants were forced to dump over a million gallons of raw sewage into the Ohio River. Luckily, there were no deaths but several rescues were required and preliminary damages to vehicles and property are estimated near 50 million dollars. The return period for this storm was greater than 1000 years.

Flash flooding also was reported to a lesser degree near Lexington on that day. In other parts of the state, the rain was much lighter amounting to between one to two inches. The rain did trigger minor river flooding on Stoner Creek in North Central Kentucky and the headwaters of the Muscatatuck River in South Central Indiana.

The remainder of the month had scattered thunderstorms and patterns were difficult to discern, but for the most part, areas in the south were drier than those in the north.

At the end of the month, stream flows and reservoir levels were near normal. Soil moisture was above normal.

NWS FORM E-3 U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE FLOOD STAGE REPORT	HYDROLOGIC SERVICE AREA: Louisville KY	
	MONTH: August	YEAR: 2009

RIVER AND STATION	FLOOD STAGE (FEET)	ABOVE FLOOD STAGE (UTC)		PRELIMINARY CREST (UTC)		
		FROM	TO	STAGE (FEET)	DATE	TIME (UTC)

Stoner Creek Paris	18	07/31/09 2050 08/05/09 0500	08/01/09 1235 08/05/09 2125	18.7E 19.3E	08/01/09 08/05/09	0500 0800
Muscatatuck River Deputy IN	20	08/04/09 2135	08/05/09 2145	29.91	08/05/09	0715

E – Estimated crest

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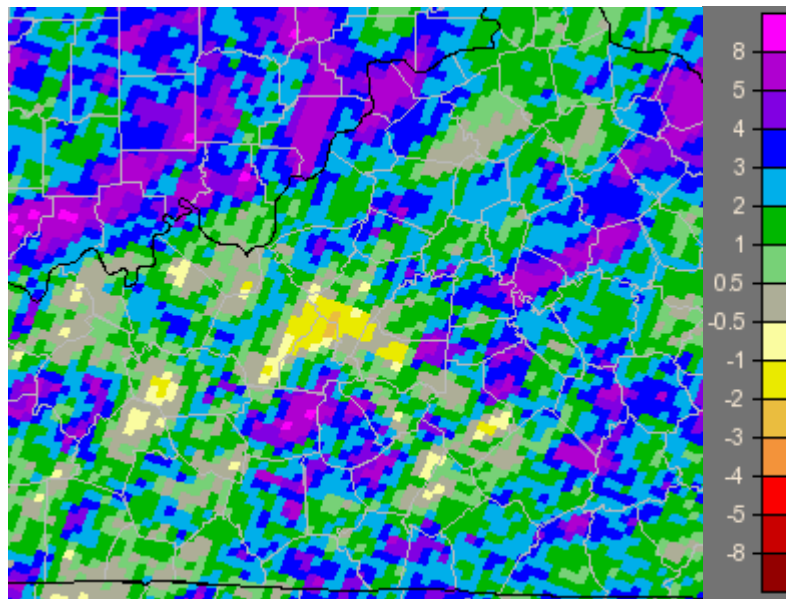
DATE
October 6, 2009

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September 2009 was a wet month across the HSA. (The region of below normal precipitation in Central Kentucky is due to bad radar data and should be ignored.) Precipitation totals varied from almost two inches above to more than 6 inches above. The wettest areas were in Hart County in Central Kentucky. Here are specific values for major airports: Louisville 5.70 inches, 2.65 inches above normal; Lexington 5.90 inches, 2.79 inches above normal; Bowling Green 5.73 inches, 1.60 inches above normal, Frankfort 6.97 inches, 3.82 inches above normal. This was the 8th wettest September in Frankfort and Lexington, and the 10th wettest in Louisville.



September 2009 Precipitation Departure from Normal

Rainfall was concentrated in the period from the 20th through the 26th. A prolonged upper air pattern with abundant Gulf moisture resulted in 7 days of heavy showers and thunderstorms. Locations in the north collected between 4 to 6 inches while amounts in the south were lighter. This did trigger minor flooding on Stoner Creek in East Central Kentucky. No reports of injuries or damages were received.

At the end of the month, stream flows and soil moisture were above normal. Reservoir levels were near normal.

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 October 2009

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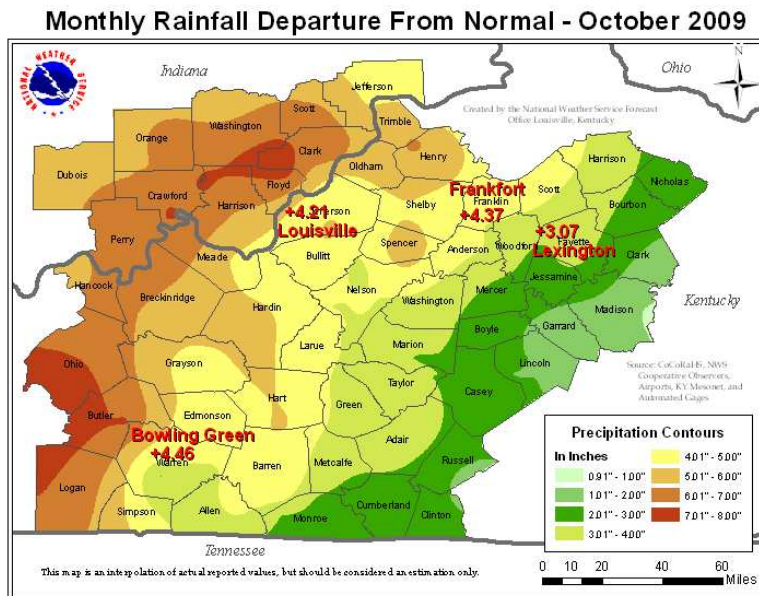
DATE
 November 5, 2009

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October 2009 was a wet month across the HSA. Precipitation totals varied from an inch above normal in the east to more than 6 inches above in the west. The wettest areas were in Clark County in South Central Indiana. Here are specific values for major airports: Louisville 7.00 inches, 4.21 inches above normal; Lexington 5.77 inches, 3.07 inches above normal; Bowling Green 7.63 inches, 4.46 inches above normal, Frankfort 7.03 inches, 4.37 inches above normal. This was the 3rd wettest October in Frankfort, the 4th wettest in Bowling Green, the 6th wettest in Louisville and the 8th wettest in Lexington.



The heaviest rain fell on the 8th and 9th when between 3 and 4 inches fell across South Central Indiana. This resulted in minor flooding on the Blue and Muscatatuck Rivers. No damage or injuries were reported. Rainfall was well distributed during the remainder of the month. No single day saw more than two inches but measurable rain fell 13 out of the 31 days which is quite unusual for October. This rain saturated the ground and helped recharge subsurface water which had been depleted due to a long period drought in this area.

At the end of the month, streamflows were well above normal, in fact some locations were at record highs for the date. However, one must remember late October is when streamflows are normally at their lowest for the year. Soil moisture and reservoir levels were above normal as well.

NWS FORM E-3 U.S. DEPARTMENT OF COMMERCE NOAA, NATIONAL WEATHER SERVICE FLOOD STAGE REPORT	HYDROLOGIC SERVICE AREA: Louisville KY	
	MONTH: October	YEAR: 2009

RIVER AND STATION	FLOOD STAGE (FEET)	ABOVE FLOOD STAGE (UTC)		PRELIMINARY CREST (UTC)		
		FROM	TO	STAGE (FEET)	DATE	TIME (UTC)

Blue River Fredericksburg	20	10/09/09 1555	10/10/09 0655	22.55	10/09/09	2345
Muscatatuck River Deputy	20	10/09/09 1035	10/10/09 0130	23.35	10/09/09	1615

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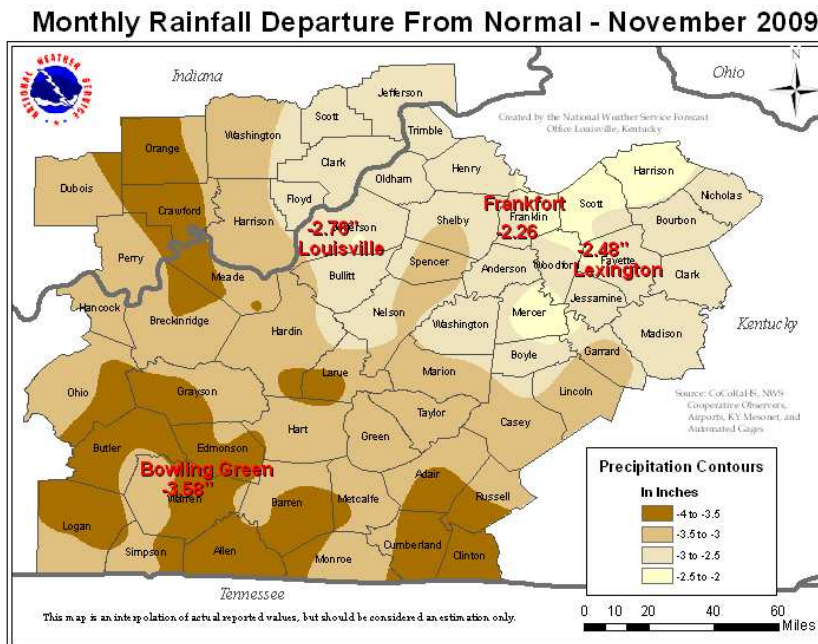
DATE
December 2, 2009

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The hydrologic service area (HSA) for this office covers Central Kentucky and South Central Indiana.

November 2009 was a dry month across the HSA. Precipitation totals varied from two inches below normal in the northeast to four inches below in the south. The driest areas were in Allen County. Here are specific values for major airports: Louisville 1.05 inches, 2.76 inches below normal; Lexington 0.96 inches, 2.48 inches below normal; Bowling Green 0.88 inches, 3.58 inches below normal, Frankfort 1.07 inches, 2.26 inches below normal. This was the 3rd driest October in Bowling Green, the 5th driest in Lexington, the 6th driest in Frankfort, and the 9th driest in Louisville.



Due to the heavy rains which fell at the end of October, there was some minor flooding on the Rough River in Central Kentucky on the 1st. No damage or injuries were reported. Hardly any rain fell until the 16th. Most of the rain which fell this month occurred from the 16th through the 18th. Locations in the north collected around an inch while in the south it was closer to a half inch. There were some light showers on the final two days of the month which the south saw up to a half inch but the north was lighter.

At the end of the month, soil moisture and streamflows were normal. Reservoir levels were near normal except at Barren River Lake which was 6 feet above and Rough River Lake which was 11 feet above.

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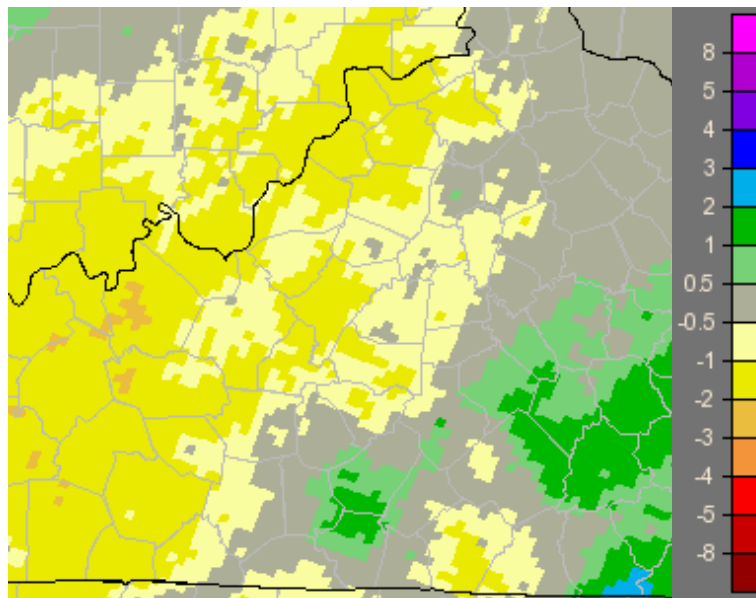
DATE
January 5, 2010

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December 2009 was near normal with precipitation over most of the HSA. Precipitation totals varied from a little over an inch below normal in the southwest to an inch above in the south central parts. The driest areas were in Breckinridge County. Here are specific values for major airports: Louisville 2.85 inches, 0.84 inches below normal; Lexington 4.02 inches, 0.01 inches below normal; Bowling Green 3.86 inches, 1.20 inches below normal, Frankfort 4.06 inches, 0.35 inches above normal.



December 2009 Precipitation Departure from Normal

Heavy rains moved over the area from the 8th through the 9th. Between two and three inches fell over the south in 24 hours. Amounts were about an inch lighter in the north. There was some flash flooding and one death occurred in Adair County. The rain resulted in minor flooding on Stoner Creek in East Central Kentucky and the Green in Central Kentucky. No damages or injuries were reported there.

The remainder of the month was quite dry. There was about a half inch of rain on the 18th and 19th in the north and central sections. Also, about an inch of snow was seen on the 19th and 20th in the east.

At the end of the month, soil moisture and streamflows were slightly below normal. Reservoir levels were near normal.