



MONTHLY WATER INVENTORY REPORT FOR OHIO

September 2010

<http://www.ohiodnr.gov/tabid/4191/Default.aspx>

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PRECIPITATION during September was below normal throughout most of the state with only a few scattered locations, mainly in northeastern and east-central Ohio, having above normal precipitation. The state average was 2.17 inches, 0.78 inch below normal. Regional averages ranged from 2.83 inches, 0.66 inch below normal, for the Northeast Region to 1.23 inches, 1.64 inches below normal, for the Southwest Region. Millersburg (Holmes County) reported the greatest amount of September precipitation, 4.08 inches. Miamitown (Hamilton County) reported the least amount, 0.34 inch. Several areas in southwestern Ohio, as well as a few other scattered locations, reported less than 1 inch of precipitation for the month.

Most of the September precipitation fell during the second half of the month. The dry conditions that existed during the second half of August continued into September. Many areas of the state received less than 0.25 inch of rain during the first 15 days of the month. The dry weather during most of the month benefitted farmers, allowing time to harvest their crops and contributing to their low moisture content. However, it also increased the potential for wildfires. Light showers fell during September 2-3 across much of the state with the greatest amounts falling in northern Ohio. Widely scattered showers and thunderstorms on September 7 moved across the southeastern two-thirds of the state. Most areas received less than 0.25 inch of rain, but scattered strong storms brought brief, heavy rains and damaging winds to isolated areas. Light showers on September 11 fell mainly across the northern half of the state with around 0.25 inch common. The month's most noteworthy storms occurred on September 16 as a cold front triggered severe storms across northern, central and eastern Ohio. Many of these storms produced large hail, damaging winds, tornadoes and locally heavy rain. The hardest hit areas were in Athens, Meigs, Perry and Wayne counties. Much of northern and eastern Ohio received 0.5-1.5 inches of rain from these storms, but little or no rain fell in western and southern Ohio. The month's most widespread precipitation fell during September 27-28. Most areas of the state received at least 0.50 inch of much-needed rain during this period with some areas from north-central through south-central Ohio recording more than 2 inches. This rain was a welcome relief to firefighters that had been battling several wildfires across the state. However, much of southwestern Ohio once again missed most of the rain, keeping conditions extremely dry in that part of the state.

Precipitation during the 2010 calendar year is below normal throughout most of the state, but above normal across much of northwestern and south-central Ohio. The average for the state is 28.96 inches, 0.85 inch below normal. Regional averages range from 34.67 inches, 2.46 inches

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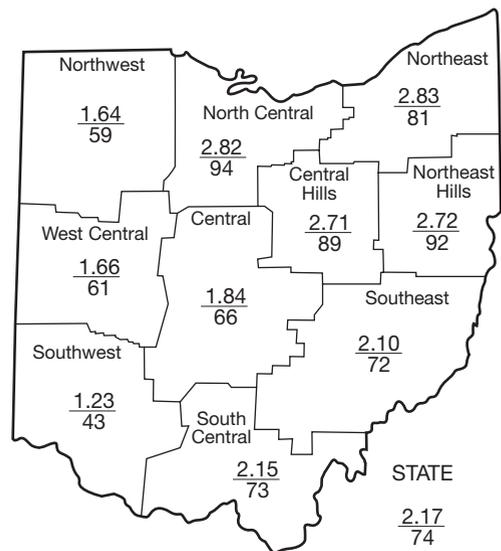
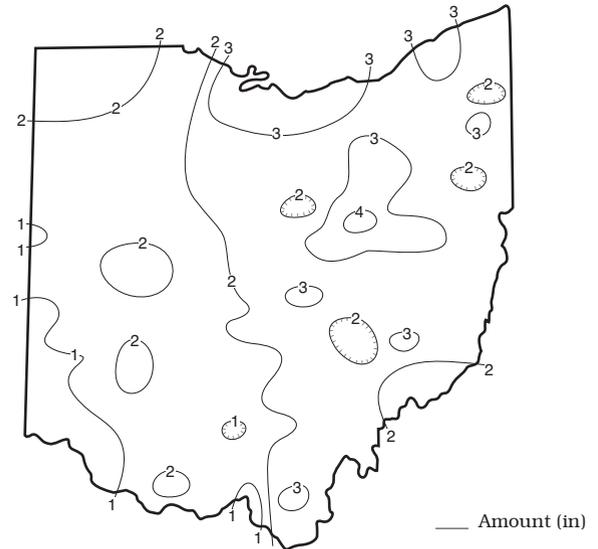
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	-1.12	-3.35	+1.89	+1.12	+2.29	-1.4
North Central	-0.18	-1.32	+2.11	-0.09	+0.31	+0.5
Northeast	-0.66	-1.21	-0.40	-1.19	+1.74	-1.2
West Central	-1.07	-2.54	-0.93	-1.08	-4.19	-1.2
Central	-0.95	-1.71	-0.24	-0.53	-2.00	-1.4
Central Hills	-0.35	-2.26	-0.75	-1.03	-2.38	-1.2
Northeast Hills	-0.24	-2.54	-0.78	-1.95	-5.13	-1.9
Southwest	-1.64	-4.02	-2.23	-3.96	-6.36	-1.9
South Central	-0.80	-0.93	+4.28	+2.71	+4.37	-0.8
Southeast	-0.81	-1.73	-0.21	-1.37	-2.32	-1.9
State	-0.78	-2.17	+0.27	-0.75	-1.38	

*Above +4 = Extreme Moist Spell
3.0 To 3.9 = Very Moist Spell
2.0 To 2.9 = Unusual Moist Spell
1.0 To 1.9 = Moist Spell
0.5 To 0.9 = Incipient Moist Spell
0.4 To -0.4 = Near Normal

-0.5 To -0.9 = Incipient Drought
-1.0 To -1.9 = Mild Drought
-2.0 To -2.9 = Moderate Drought
-3.0 To -3.9 = Severe Drought
Below -4.0 = Extreme Drought

PRECIPITATION SEPTEMBER



Average (in)
Percent of normal

MEAN STREAM DISCHARGE

This Month

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	48	27	26	63	82
Great Miami River at Hamilton	3,630	566	58	62	95	100
Huron River at Milan	371	18	39	24	68	64
Killbuck Creek at Killbuck	464	88	79	57	79	84
Little Beaver Creek near East Liverpool	496	59	52	46	92	99
Maumee River at Waterville	6,330	383	50	43	125	93
Muskingum River at McConnelsville	7,422	919	37	84	114	71
Scioto River near Prospect	567	14	46	45	85	80
Scioto River at Higby	5,131	550	41	49	79	91
Stillwater River at Pleasant Hill	503	35	58	45	100	96

STREAMFLOW during September was noticeably below normal throughout Ohio. Flows were low enough to be considered deficient across most of the state. Flows during September were less than August flows statewide.

Flows at the beginning of the month were below normal throughout the state. Flows generally declined during the first half of the month in most areas of Ohio, although there were some temporary rises noted following local precipitation near the end of the first week. Lowest flows for the month occurred during September 6-10 in southwestern and southeastern areas of the state. Most of the remainder of Ohio experienced the month's lowest flows during September 26-27, just prior to the month's most widespread rainfall. Greatest

flows for the month occurred on September 29 or 30 throughout most of Ohio. At the end of the month, flows remained below normal across much of the state, but were above normal in parts of north-central, east-central and south-central Ohio.

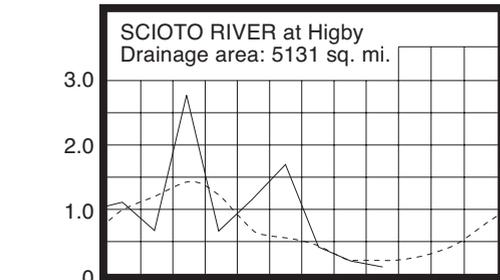
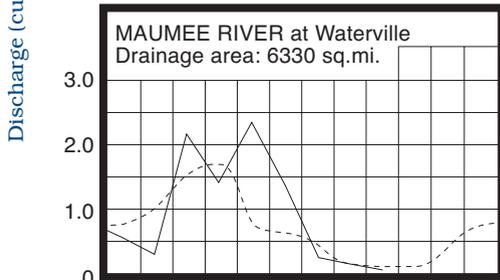
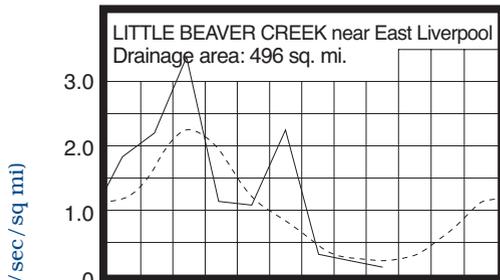
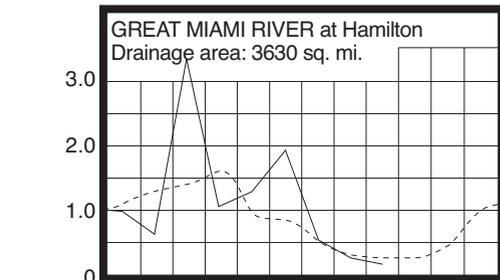
Streamflow for the 2010 water year was below normal throughout most of the state (see Mean Stream Discharge table, past 12 months column). Flows during October were above normal across most of Ohio, but were generally below normal the next four months. March flows increased to above normal due to precipitation and melting snow and ice. After being below normal during April, flows increased to above normal during May and June. Flows were below normal throughout much of the state during July, but above normal in central and southwestern Ohio. Locally severe flooding occurred from Clermont County east to Lawrence County following heavy rains that fell during July 20-21. Below normal precipitation during August and September reduced flows statewide.

RESERVOIR STORAGE for water supply during September decreased in both the Mahoning and Scioto river basins. Storage remained above normal in both basins.

Reservoir storage at the end of August in the Mahoning basin index reservoirs was 77 percent of rated capacity for water supply compared with 84 percent for last month and 76 percent for September 2009. Month-end storage in the Scioto basin index reservoirs was 78 percent of rated capacity for water supply compared with 86 percent for last month and 90 percent for September 2009.

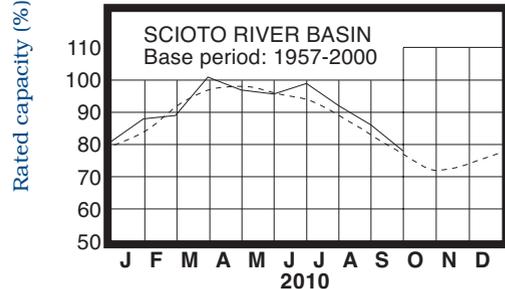
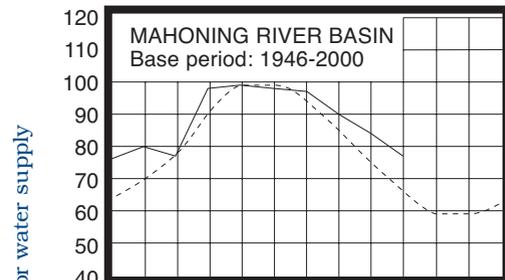
Surface water supplies were adequate statewide during the 2010 water year. Storage in reservoirs remained near or above normal throughout most of the water year. Although conditions were rather dry in many areas of the state during the past three months, above normal rainfall and streamflow during May and June helped keep surface water supplies adequate throughout the summer months.

MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

RESERVOIR STORAGE FOR WATER SUPPLY



Normal - - - - Current ———

GROUND-WATER LEVELS

Based on daily lowest level in feet below land-surface datum

GROUND WATER levels during September declined throughout the state. Net declines during September from the August levels were greater than usually observed in most aquifers. Most aquifers declined steadily throughout the month, although a few aquifers showed some slight improvement during the last week of September in response to widespread precipitation.

Ground water supplies during the 2010 water year were adequate throughout the state. The water year started with most aquifers below normal, but above normal in some consolidated aquifers in eastern Ohio. The 2010 recharge season got off to a promising beginning as precipitation during October was above normal nearly statewide. However, precipitation was below normal during five of the next six months throughout most of Ohio. The combination of this and frozen soils during much of the winter, contributed to recharge rates being reduced across the state. Above normal precipitation during May and June was extremely beneficial to ground water supplies, especially since July, August and September were rather dry. The 2010 water year ended as it began with ground water supplies generally below normal, but above normal in some consolidated aquifers in eastern Ohio. Current ground water levels range from nearly 1.5 feet above to about 1.5 feet below the September 2009 levels. Conditions currently are not favorable for recharge; however, a return to normal precipitation during the next few months would help improve the situation. The Ohio Agricultural Statistics Service reports that near the end of September, soil moisture was rated as being short or very short in 64 percent of the state, adequate in 35 percent of the state, and surplus in 1 percent of the state.

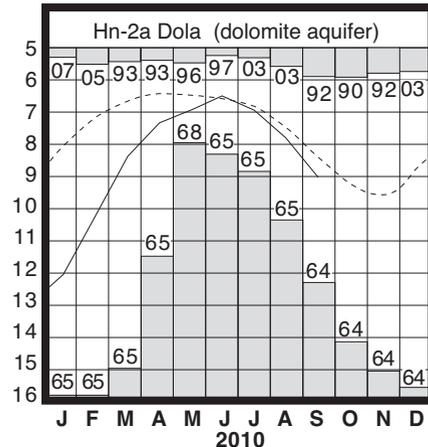
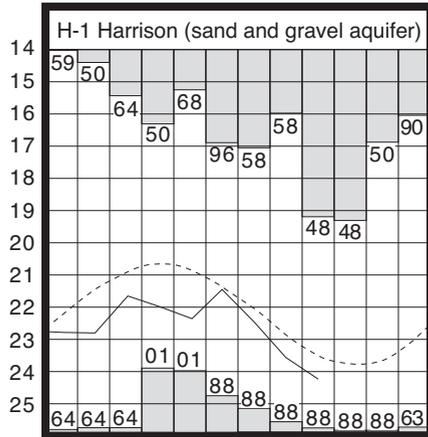
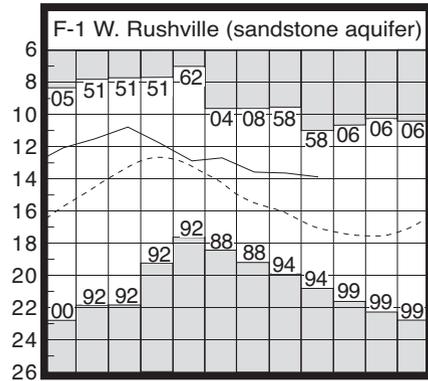
Note: Observation well WN-8, located in Wayne County at The Ohio State University OARDC campus in Wooster, was destroyed by a tornado on September 16. Pictures of the damage can be viewed on our web site at <http://www.dnr.state.oh.us/tabid/21817/Default.aspx>. An update on this storm will be included in next month's issue.

LAKE ERIE level declined during September. The mean level was 570.93 feet (IGLD-1985), 0.56 foot lower than last month's mean level and 0.49 foot below normal. This month's mean level is 0.72 foot lower than the September 2009 level and 1.73 feet above Low Water Datum.

Lake Erie's level was above normal during the first three months of the 2010 water year and below normal during the last nine months. The U.S. Army Corps of Engineers reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should remain below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 6 inches above to as much as 14 inches below the normal seasonal average.

Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	13.88	+3.08	-0.24	+1.38
Fa-1	Jasper Mill, Fayette Co.	Limestone	10.82	-2.05	-1.29	-1.59
Fr-10	Columbus, Franklin Co.	Gravel	45.34	-1.05	-0.70	+0.41
H-1	Harrison, Hamilton Co.	Gravel	24.22	-0.72	-0.65	-0.39
Hn-2a	Dola, Hardin Co.	Dolomite	9.01	-0.61	-1.21	+1.09
Po-124	Freedom, Portage Co.	Sandstone	77.15	+1.02	-0.41	-0.79
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.08	-1.28	-0.68	+0.81

GROUND-WATER LEVELS

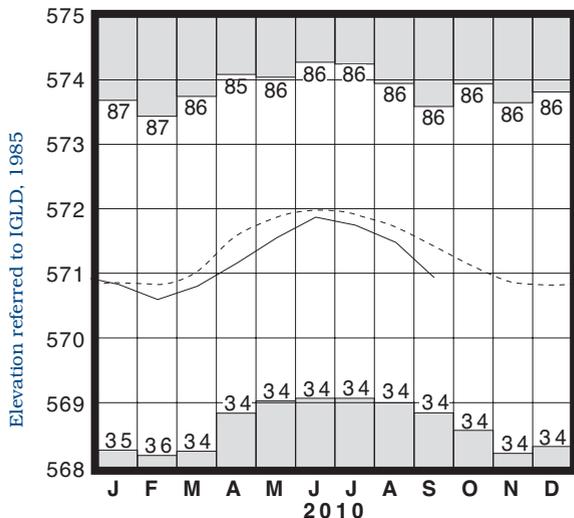


Water level (ft below land surface)

Base periods: F-1, 1947-2000 H-1, 1951-2000.

Hn-2a, 1955-2000 ■ Record high and low, year of occurrence

LAKE ERIE LEVELS



Base period: 1918-2000

■ Record high and low, year of occurrence

Normal - - - - Current ———

above normal, for the South Central Region to 26.84 inches, 0.15 inch above normal, for the Northwest Region.

Precipitation during the 2010 water year (October 1, 2009-September 30, 2010) was below normal across most of the state, but above normal in the Northwest and South Central regions. The average for the state was 37.27 inches, 0.75 inch below normal. Regional averages ranged from 43.33 inches, 2.71 inches above normal, for the South Central Region to 35.05 inches, 0.09 inch below normal, for the North Central Region (see Precipitation table, departure from normal, past 12 months column). South Point (Lawrence County) reported the greatest amount of precipitation during the 2010 water year, 54.91 inches. Prospect (Marion County) reported the least amount, 29.55 inches.

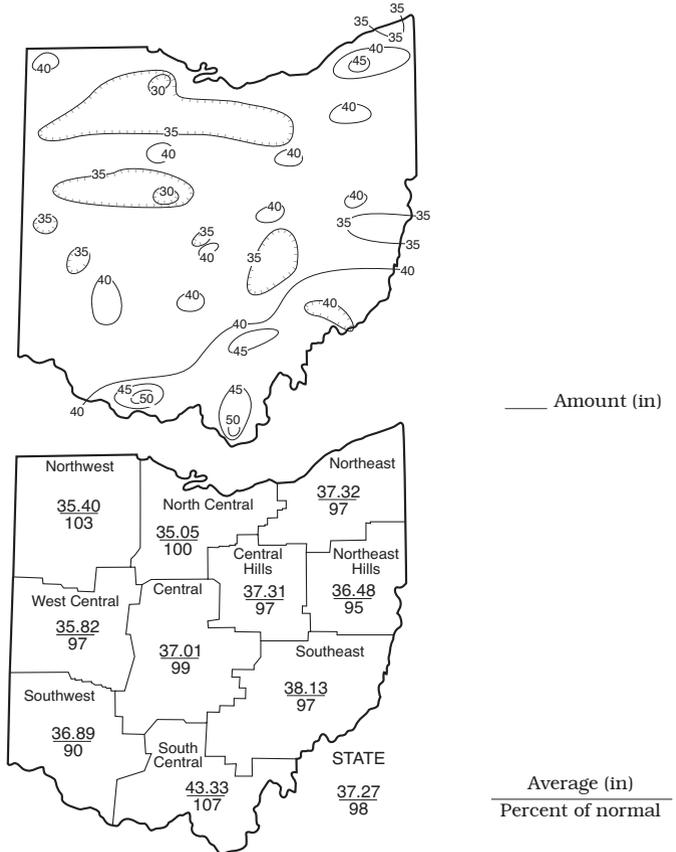
The 2010 water year began with above normal precipitation during October, but was followed by a very dry November in which all 10 of the state's climatic regions ranked in their top 11 driest Novembers of record. Precipitation during December was above normal across much of the state while in January it was below normal throughout most of Ohio. Precipitation was below normal in the western half of the state during February and in most of the state during March and April. May and June saw above normal precipitation throughout most of Ohio with this being the fifth wettest June during the past 128 years for the state as a whole. Precipitation during July-September was below normal across most of the state with some areas, especially in southwestern Ohio, experiencing very dry conditions during this period. Even with below normal precipitation across most of the state during the 2010 water year, water supplies were adequate throughout the year.

SUMMARY

Precipitation during September was below normal throughout most of Ohio. Streamflow was noticeably below normal statewide and low enough to be considered deficient across most of the state. Reservoir storage decreased in both the Mahoning and Scioto river basins, and remained above normal in both basins. Ground water levels declined and were below normal throughout most of the state. Lake Erie level declined 0.56 foot and was 0.49 foot below the long-term September average.

Precipitation for the 2010 water year was below normal across most of the state, but above normal in the Northwest and South Central Regions. Streamflow was below normal throughout most of the state. Surface water supplies were near or above normal and ground water supplies were adequate throughout the water year. Lake Erie level declined and was below normal during the last nine months of the water year. Water supplies were adequate throughout Ohio during the 2010 water year.

PRECIPITATION 2010 WATER YEAR



ACKNOWLEDGMENTS

This report has been compiled from Division data and from information supplied by the following:

Precipitation data:

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service; The Miami Conservancy District; U.S. Army Corps of Engineers, Muskingum Area.

Streamflow and reservoir storage data:

U.S. Geological Survey, Water Resources Division.

Lake Erie level data:

U.S. Army Corps of Engineers, Detroit District.

Palmer Drought Severity Index:

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Weather Service.



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