



MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2015

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<http://soilandwater.ohiodnr.gov/water-use-planning/water-inventory-levels>

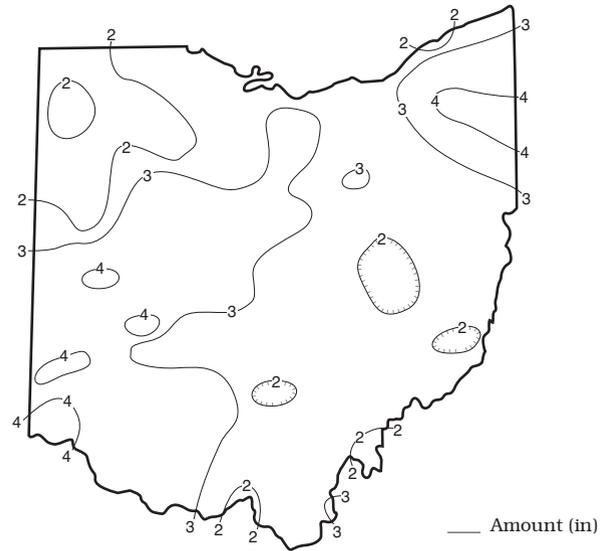
PRECIPITATION during October was near to above normal across much of the state, but below normal in northwestern and portions of eastern and south-central Ohio. The state average was 2.73 inches, 0.09 inch above normal. Regional averages ranged from 3.53 inches, 0.67 inch above normal, for the Southwest Region to 2.00 inches, 0.39 inch below normal, for the Northwest Region. Fairfield (Warren County) reported the greatest amount of October precipitation, 4.93 inches. Cambridge (Guernsey County) reported the least amount, 1.19 inches.

Across much of the state, the precipitation during October fell primarily during the last eight days of the month. October started off with light showers statewide during October 1-3 with most areas reporting less than 0.5 inch amounts; slightly greater amounts were reported in some areas of eastern Ohio. Light showers fell across the state on October 9 and in southern Ohio on October 12 with amounts of 0.25 inch or less reported during each period. Precipitation fell daily from October 14-17 in northeastern Ohio with amounts generally between 0.5 and 1 inch, but little or no rain was reported elsewhere. Many locations across the state received less than 0.5 inch of precipitation during the first 23 days of the month. The dry weather was ideal for the fall harvest. By the end of the month the harvest was nearly complete across Ohio. The wettest period for the month was October 24-31 with precipitation falling on several days during this time. Much of the state received between 0.25 and 0.5 inch of rain on October 24. The most significant precipitation for the month occurred during October 27-29. Amounts of 1-2 inches were common throughout the state with more than 3 inches falling in areas in southwestern Ohio. The month ended with light showers falling across most of the state.

Precipitation for the 2015 calendar year is above normal statewide. The average is 36.29 inches, 3.24 inches above normal. Regional averages range from 39.44 inches, 4.05 inches above normal, for the Southwest Region to 33.61 inches, 3.07 inches above normal, for the North Central Region.

The 2016 water year (October 1, 2015-September 30, 2016) is off to an adequate start as far as precipitation is concerned. However, even though the state average was above normal, many areas of Ohio received below normal precipitation during October. As we begin the 2016 water year recharge season, near to above normal precipitation across more of the state would be a benefit for water supplies throughout Ohio.

PRECIPITATION OCTOBER

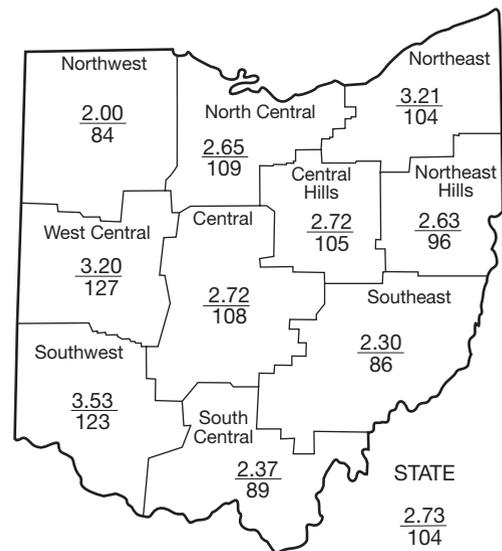


PRECIPITATION

Region	This Month	DEPARTURE FROM NORMAL (IN.) Base period 1961-2010				Palmer Drought Severity Index*
		Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	-0.39	-1.64	+8.30	+4.31	+5.08	+1.1
North Central	+0.22	+0.02	+3.52	+0.93	+3.52	+1.5
Northeast	+0.13	-1.37	+3.15	+1.38	+8.68	+0.1
West Central	+0.69	-1.40	+4.81	+3.59	+5.95	+0.1
Central	+0.20	-1.75	+1.02	-0.22	+1.07	-1.4
Central Hills	+0.14	-1.69	+0.88	-0.55	+3.65	-1.4
Northeast Hills	-0.11	-1.64	+1.11	+0.02	+6.11	-1.0
Southwest	+0.67	-0.59	+2.51	+2.89	+2.75	+0.8
South Central	-0.28	-1.27	+0.88	+2.82	+3.70	-1.2
Southeast	-0.36	-0.06	+0.60	+2.03	+3.29	-1.5
State	+0.09	-1.14	+2.67	+1.70	+4.34	

*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



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	216	81	41	146	109
Great Miami River at Hamilton	3,630	1,288	126	93	148	119
Huron River at Milan	371	91	169	62	130	113
Killbuck Creek at Killbuck	464	122	87	63	98	93
Little Beaver Creek near East Liverpool	496	174	140	53	110	108
Maumee River at Waterville	6,330	368	37	45	254	131
Muskingum River at McConnelsville	7,422	1,603	69	47	97	89
Scioto River near Prospect	567	88	252	50	221	128
Scioto River at Higby	5,131	1,249	83	71	130	103
Stillwater River at Pleasant Hill	503	110	134	73	164	115

STREAMFLOW during October was generally below normal in northwestern and much of eastern Ohio, and above normal from west-central and southwestern Ohio to central and into north-central areas of the state. Generally, flows during October were greater than the September flows, except in northwestern and southeastern Ohio drainage basins, where they were less.

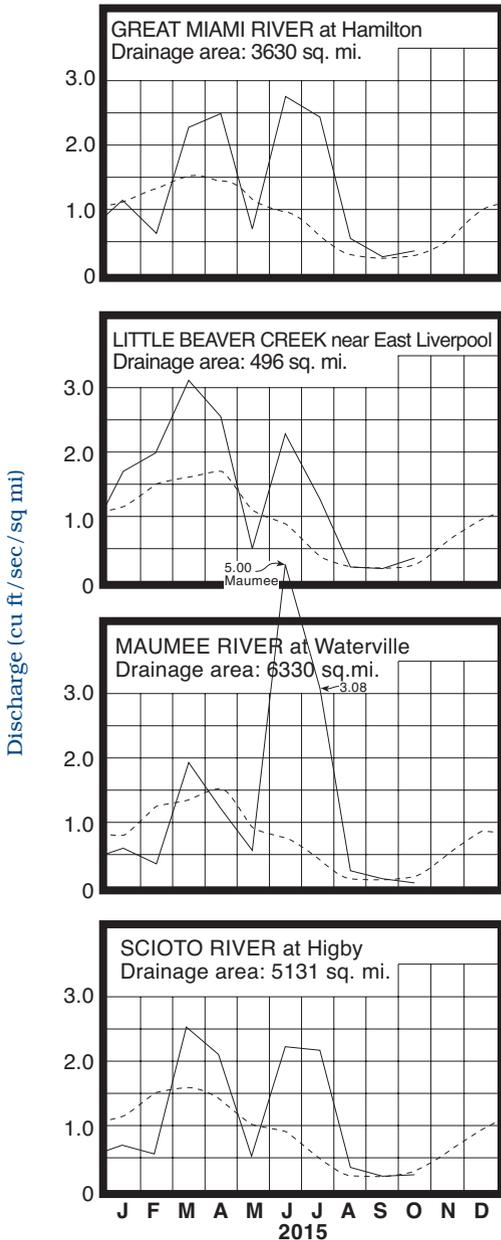
Flows at the beginning of the month were below normal throughout most of the state. Flows increased slightly during the first few days of the month following precipitation. Generally, flows then declined through October 24; some basins in northeastern Ohio experienced slight increases around mid-month. Lowest flows for the month occurred at various times during October, generally just after mid-month from

southwestern to northeastern areas, and during October 22-24 in most other areas of the state. Flows began to increase with the precipitation that fell on October 24, and then rose rapidly as a result of the rain that fell during October 27-28. Greatest flows for the month occurred between October 29 and 31 statewide following this widespread rainfall. By the end of October, flows had improved to above normal levels.

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

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 74 percent of rated capacity for water supply compared with 78 percent for last month and 77 percent for October 2014. Month-end storage in the Scioto basin index reservoirs was 84 percent of rated capacity for water supply compared with 90 percent for last month and 81 percent for October 2014. Surface water supplies are in good condition throughout Ohio as the 2016 water year recharge season begins.

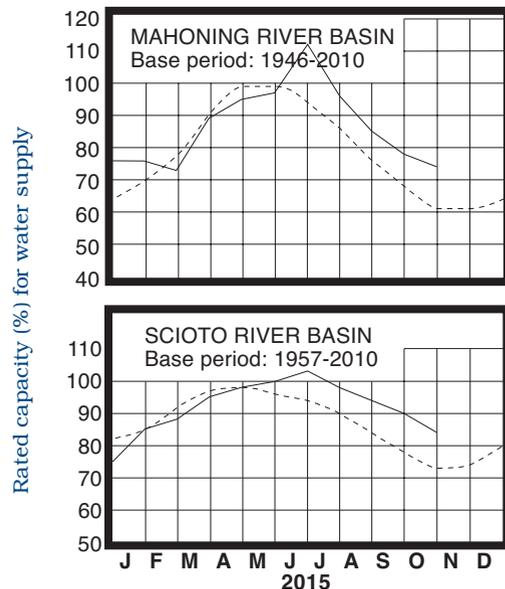
MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

Normal - - - - Current ———

RESERVOIR STORAGE FOR WATER SUPPLY



GROUND-WATER LEVELS

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

GROUND WATER levels during October declined throughout the state. In most aquifers the declines were greater than normally observed for October. Levels in most aquifers declined steadily throughout most of the month with only some slight increases noted during the last week of October as a result of widespread rain during that period.

Ground water supplies continue to remain adequate throughout the state. Current levels are generally higher than they were a year ago in most aquifers, but lower in some aquifers in the northeast quarter of Ohio. Ground water levels range from about 2 feet above normal to around 0.75 foot below normal across the state. Generally, levels in aquifers in northwestern, central and southeastern Ohio are above normal while in southwestern and northeastern Ohio they are below normal. The widespread precipitation during the last week of October has improved soil moisture conditions which should bode well for improvement to ground water storage during the 2016 recharge season. The Ohio Agricultural Statistics Service reports that at the end of October, soil moisture was rated as being short or very short in 28 percent of the state, adequate in 64 percent of the state, and surplus in 8 percent of the state. Near normal precipitation and other climatic conditions during the next several months should result in adequate recharge to Ohio's ground water supplies.

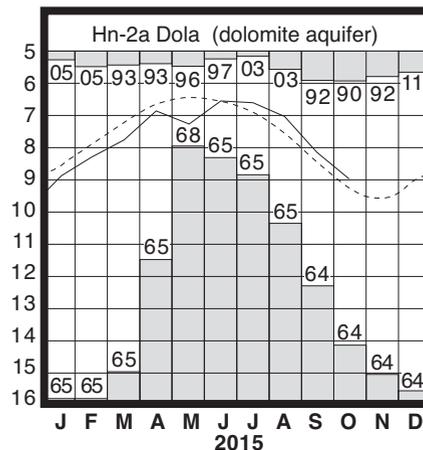
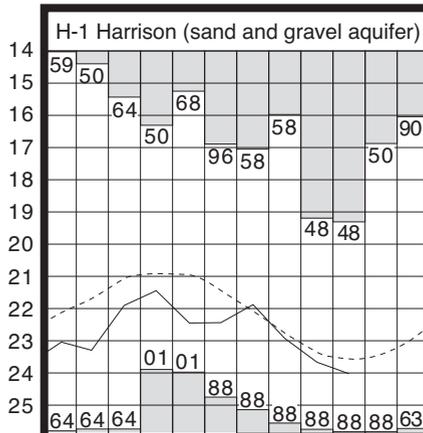
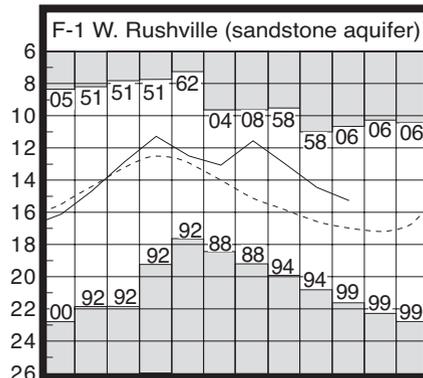
LAKE ERIE level declined during October. The mean level was 571.98 feet (IGLD-1985), 0.53 foot below last month's mean level and 0.92 foot above normal. This month's mean level is 0.29 foot above the October 2014 level and 2.78 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 2.55 inches, 0.28 inch below normal. For the entire Great Lakes basin, October precipitation averaged 2.72 inches, 0.19 inch below normal. For calendar year 2015 through October, precipitation in the Lake Erie basin has averaged 28.49 inches, 1.57 inches below normal, while the entire Great Lakes basin has averaged 24.26 inches, 3.34 inches below normal.

In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather patterns, the level of Lake Erie should remain above normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 3 inches below normal to as much as 21 inches above the normal seasonal average.

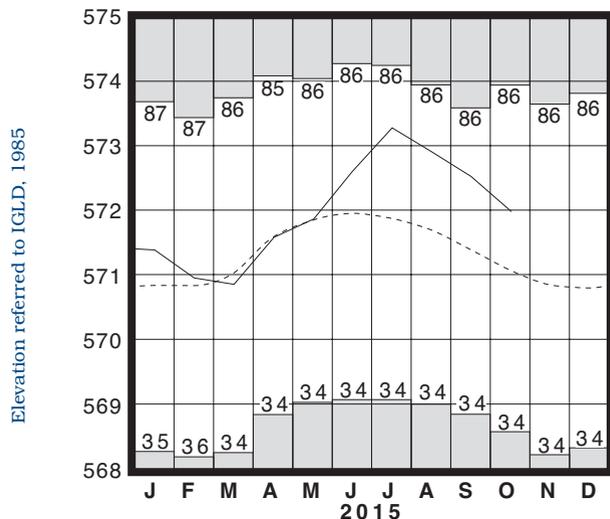
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	15.29	+1.69	-0.84	+0.74
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.67	-0.33	-0.25	+1.28
Fr-10	Columbus, Franklin Co.	Gravel	42.59	+2.17	-0.16	+0.63
H-1	Harrison, Hamilton Co.	Gravel	24.07	-0.50	-0.40	+0.27
Hn-2a	Dola, Hardin Co.	Dolomite	8.98	+0.27	-0.84	+0.38
Po-124	Freedom, Portage Co.	Sandstone	77.21	-0.16	-0.27	-0.26
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.86	-0.73	-0.42	-1.54

GROUND-WATER LEVELS



Water level (ft below land surface)

LAKE ERIE LEVELS



Base period: 1918-2010

■ Record high and low, year of occurrence

Base periods: F-1, 1947-2010; H-1 1951-2010.

Hn-2a, 1955-2010 ■ Record high and low, year of occurrence

Normal - - - - Current _____

SUMMARY

Precipitation during October was near to above normal across much of the state, but below normal in northwestern and portions of eastern and south-central Ohio. Streamflow was generally below normal in northwestern and much of eastern Ohio and above normal elsewhere. Reservoir storage decreased seasonally and remained above normal. Ground water levels declined statewide. Lake Erie level declined 0.53 foot and was 0.92 foot above the long-term October average.

NOTES AND COMMENTS

Division of Soil and Water Resources Employee Passes

We are saddened to report that Blaine Gerdes, long-time employee with the Division of Soil and Water Resources, passed away on October 3 after a short but courageous battle with cancer. Blaine was born on March 24, 1953 in Youngstown, Ohio. He began his career at the Ohio Department of Natural Resources (ODNR) in 1983 with the Division of Parks and Recreation. In 1984 he moved to the Division of Outdoor Recreation Services where he served as the Ohio State Trails administrator and later as the administrator of the Ohio Canal Land's Real Estate Program. While at the Division of Soil and Water Resources, Blaine worked on many projects. One of the projects he was passionate about was the development of the Larry Vance Conservation Park at the Farm Science Review property in Madison County. Blaine was named to oversee the development of new trails, stage and a Walk of Fame which recognizes farm families who are honored each year for exhibiting best practices for water, land and animal health. To honor Blaine and his years of dedication and passion he gave to the Conservation Park and the Conservation Farm Family Awards program, a sign will be placed at the Larry Vance Conservation Park in his memory.

Blaine is survived by his wife and two daughters. He will be missed by those of us who knew and had an opportunity to work with him.

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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