



# MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2014

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

**PRECIPITATION** during October was near normal throughout much of the state, but above normal across most of south-central, southeastern and northeastern Ohio, and below normal in northwestern and west-central Ohio. The state average was 2.89 inches, 0.25 inch above normal. Regional averages ranged from 4.58 inches, 1.93 inches above normal, for the South Central Region to 2.02 inches, 0.49 inch below normal, for the West Central Region. This was the tenth wettest October on record for the South Central Region. West Union (Adams County) reported the greatest amount of October precipitation, 5.98 inches. Grover Hill (Paulding County) reported the least amount, 1.35 inches.

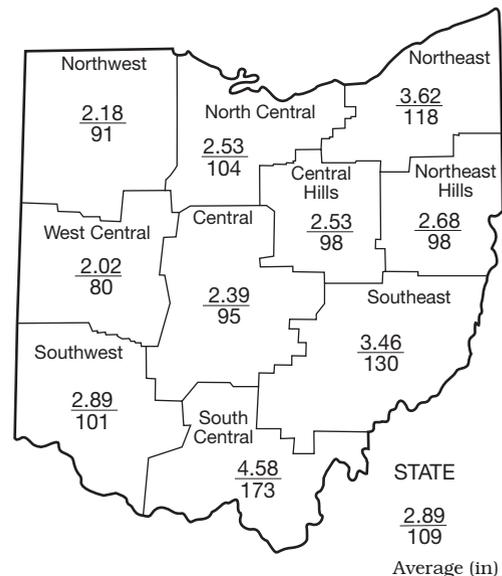
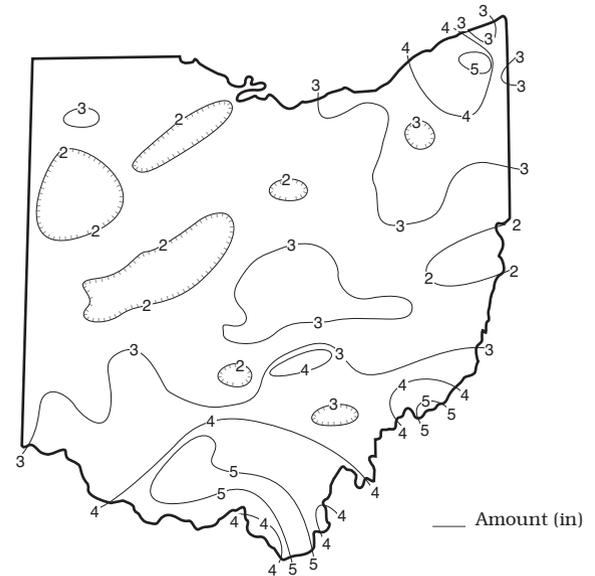
Precipitation fell on several days during October, but daily totals seldom exceeded 0.5 inch. The greatest precipitation totals for the month were in the south-central areas of the state along with the Ohio River counties in southeastern Ohio and the Lake Erie counties of northeastern Ohio. The first week of October was wet statewide with most areas reporting between 0.5 and 1.0 inch of rain and more than 2 inches in parts of northwestern Ohio. More than 1 inch of rain fell across portions of northwestern Ohio on October 2. Showers and thunderstorms were most numerous across southern Ohio on October 6 and 7, producing as much as 1 inch of rain. Most areas in the southern half of the state received at least 0.25 inch during October 9-10, with nearly 1 inch falling in extreme southern Ohio. Rain on October 14 was widespread with brief heavy downpours. Most areas of the state received at least 0.5 inch with some eastern and southern areas recording more than 1 inch. The second half of the month was drier across most of the state when compared to the first half, which was beneficial for farmers harvesting crops. Scattered, light showers fell on a few days during the third week of the month throughout most of the state, but areas in northeastern Ohio, especially the lakeshore counties of Lake Erie, experienced heavier showers nearly every day during this period. The last ten days of October continued to be relatively dry across most of the state. Showers on October 28 were light at most locations, but areas in south-central and southeastern Ohio received around 1 inch. The month ended with light showers falling across the state with amounts of 0.25 inch or less reported on October 31.

Precipitation for the 2014 calendar year is above normal in the northern two-thirds of Ohio and below normal in the southern one-third. The state average is 34.57 inches, 1.51 inches above normal. Regional averages range from 40.07 inches, 7.03 inches above normal, for the Northeast Region to 30.41 inches, 0.85 inch above normal, for the Northwest Region.

Water supplies throughout Ohio are in a favorable position as the 2015 water year begins. Most of the state received near to above normal

(continued on back)

## PRECIPITATION OCTOBER



## PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1961-2010					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	-0.21	+1.56	-0.11	+0.80	+2.41	+0.9
North Central	+0.10	-0.40	+1.06	+2.87	+7.56	+2.6
Northeast	+0.54	+1.83	+6.37	+7.51	+11.70	+2.7
West Central	-0.49	-1.59	-0.51	+2.42	+1.54	-1.4
Central	-0.13	-2.11	-0.44	+1.47	+3.04	-1.0
Central Hills	-0.05	-1.03	+1.64	+3.69	+6.32	-0.5
Northeast Hills	-0.06	+1.66	+5.47	+6.09	+5.53	-0.5
Southwest	+0.03	-0.87	-1.48	+0.03	-0.47	-0.8
South Central	+1.93	-0.21	-1.61	+1.21	-0.13	-1.2
Southeast	+0.80	-0.41	-1.28	+1.25	+2.36	-1.4
State	+0.25	-0.16	+0.89	+2.67	+3.90	

\*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

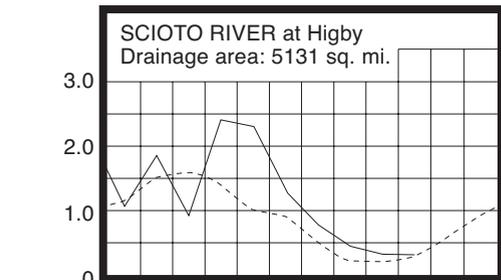
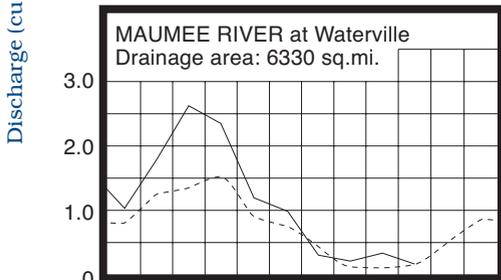
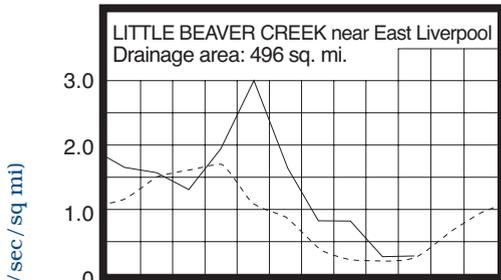
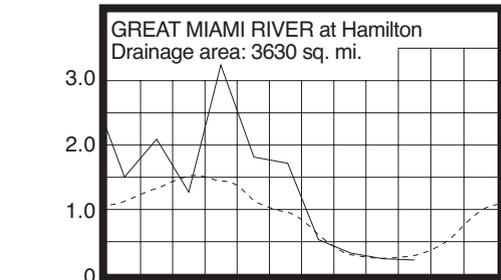
River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	539	201	147	158	119
Great Miami River at Hamilton	3,630	752	73	61	101	134
Huron River at Milan	371	31	58	36	123	166
Killbuck Creek at Killbuck	464	127	90	116	173	132
Little Beaver Creek near East Liverpool	496	138	111	95	157	113
Maumee River at Waterville	6,330	1,072	107	74	90	119
Muskingum River at McConnelsville	7,422	1,945	84	98	146	112
Scioto River near Prospect	567	25	72	32	113	134
Scioto River at Higby	5,131	1,618	108	97	124	119
Stillwater River at Pleasant Hill	503	56	68	47	80	117

**STREAMFLOW** during October was below normal across much of the state, but above normal in some northwestern, northeastern and south-central Ohio basins. October flows were less than the September flows throughout most of the state, but were greater in some areas of northeastern and central Ohio.

Flows at the beginning of the month were below normal statewide. Most drainage basins in the state had their lowest flows on October 1-2. Generally, flows increased from these lows during the next two weeks. Greatest flows occurred throughout most of the state during this period, mainly around October 16-19. Flows declined from these peaks through the end of the month across most of the state. Flows at the end of October were below normal across most of the state, but above normal in a few

northeastern and south-central Ohio basins.

### MEAN STREAM DISCHARGE

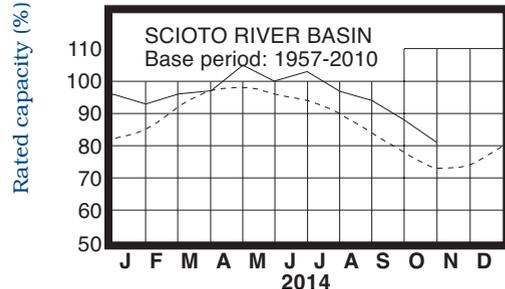
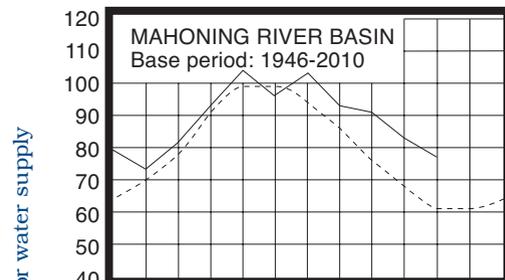


Base period for all streams: 1981-2010

**RESERVOIR STORAGE** for water supply during October decreased in both the Mahoning and Scioto river basins. Month-end storage remained above normal in both basins.

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 77 percent of rated capacity for water supply compared with 83 percent for last month and 78 percent for October 2013. Month-end storage in the Scioto basin index reservoirs was 81 percent of rated capacity for water supply compared with 88 percent for both last month and October 2013. Surface water supplies are favorable throughout Ohio as the start of the 2015 water year recharge season begins.

### RESERVOIR STORAGE FOR WATER SUPPLY



Normal - - - - Current ———

## GROUND-WATER LEVELS

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

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	16.03	+0.95	-0.84	-0.67
Fa-1	Jasper Mill, Fayette Co.	Limestone	10.95	-1.61	-0.64	-0.60
Fr-10	Columbus, Franklin Co.	Gravel	43.22	+1.54	-0.09	+0.86
H-1	Harrison, Hamilton Co.	Gravel	24.34	-0.77	-0.33	-0.10
Hn-2a	Dola, Hardin Co.	Dolomite	9.36	-0.11	-0.59	-1.54
Po-124	Freedom, Portage Co.	Sandstone	76.95	+0.10	-0.07	+0.17
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.32	+0.81	-1.66	+1.97

**GROUND WATER** levels during October declined throughout the state. Net declines during October from last month's levels were greater than usually observed in most aquifers. Levels declined steadily throughout the month in most aquifers; a few unconsolidated aquifers showed some improvement during the first half of the month, and then declined during the second half.

Ground water storage is in a favorable position as the 2015 water year begins. However, some areas of the state have received below normal precipitation during three of the past four months. As a result, ground water levels across much of the state are now lower than they were a year ago, especially in aquifers in western Ohio. Levels in aquifers in eastern Ohio continue to be above normal while they are below normal in western Ohio. Near the end of October, the Ohio Agricultural Statistics Service reports that soil moisture was rated as being short or very short in 12 percent of the state, adequate in 68 percent of the state, and surplus in 20 percent of the state. Near normal precipitation and other climatic conditions during the next several months should provide adequate recharge to ground water supplies, helping to ensure that ground water storage remains favorable in Ohio.

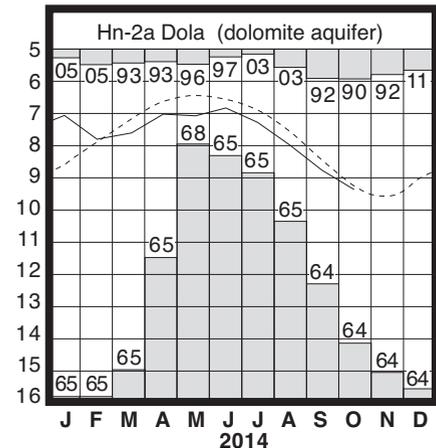
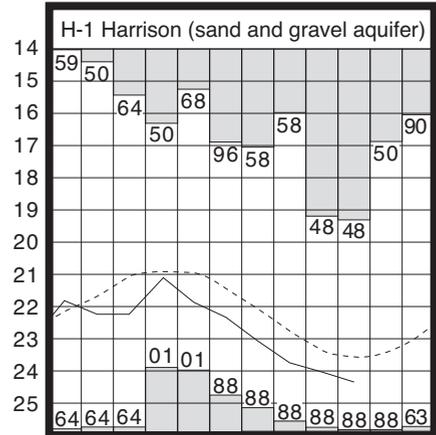
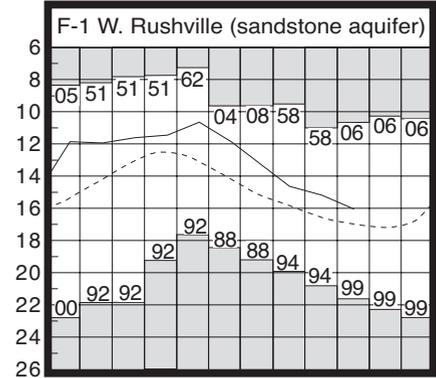
**LAKE ERIE** level declined during October. The mean level was 571.69 feet (IGLD-1985), 0.19 foot below last month's mean level and 0.63 foot above normal. This month's level is 0.59 foot above the October 2013 level and 2.49 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 2.53 inches, 0.25 inch below normal. For the entire Great Lakes basin, October precipitation averaged 3.84 inches, 0.95 inch above normal. For calendar year 2014 through October, precipitation in the Lake Erie basin has averaged 30.56 inches, 0.66 inch above normal, while precipitation in the entire Great Lakes basin has averaged 30.34 inches, 2.81 inches above 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 as much as 21 inches above normal to about 3 inches below the normal seasonal level.

## GROUND-WATER LEVELS

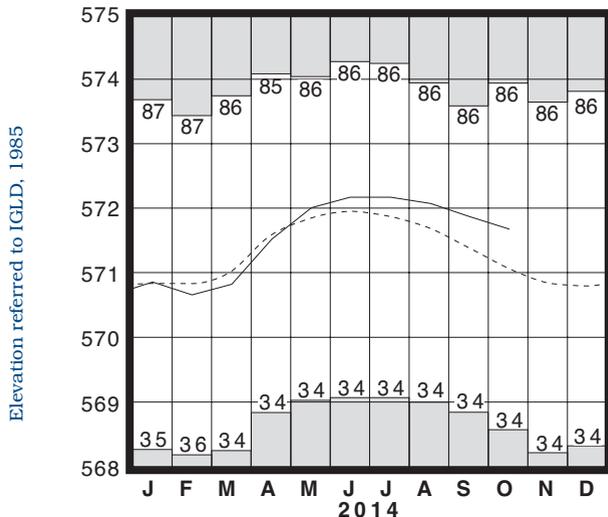
Water level (ft below land surface)



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

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

## LAKE ERIE LEVELS



Base period: 1918-2010

■ Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

precipitation during October. However, some areas of the state have received below normal precipitation during the past few months. Water supplies throughout the state will benefit from near normal precipitation and other climatic conditions during the next several months, the 2015 recharge season.

### SUMMARY

Precipitation during October was near normal throughout much of the state. Streamflow was below normal across much of the state, but above normal in some northwestern, northeastern and south-central Ohio basins. Reservoir storage decreased but remained above normal. Ground water levels declined but continue to be above normal in eastern Ohio. Lake Erie level declined 0.19 foot and was 0.63 foot above the long-term October average.

### NOTES AND COMMENTS

#### Editorial

The purpose of this report is to disseminate current hydrologic data in a timely and brief format. Observation points have been selected which are considered to be sufficiently representative of hydrologic conditions in the state to permit an evaluation of the current water-supply situation. These key observation stations offer the best available data on the basis of accuracy and length of record, minimal artificial effects on data, and availability of records. Data from these stations are collected by various agencies at the end of each month and processed immediately. Because of the time limitations involved, all data presented in this report must be considered preliminary and may be subject to revision before publication in regular form by the agencies involved. The remarks in this report include the writer's opinion of the cause and significance of the phenomena reported. The author is indebted to the various agencies and individuals who make this data available.

More complete and detailed information regarding water resources can be obtained by contacting the Division of Soil and Water Resources or visiting our website at: <http://soilandwater.ohiodnr.gov>. Comments and suggestions regarding this report are always welcome.

### 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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