



# MONTHLY WATER INVENTORY REPORT FOR OHIO

May 2016

Compiled By Scott C. Kirk

Hydrologist, Water Inventory Unit

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

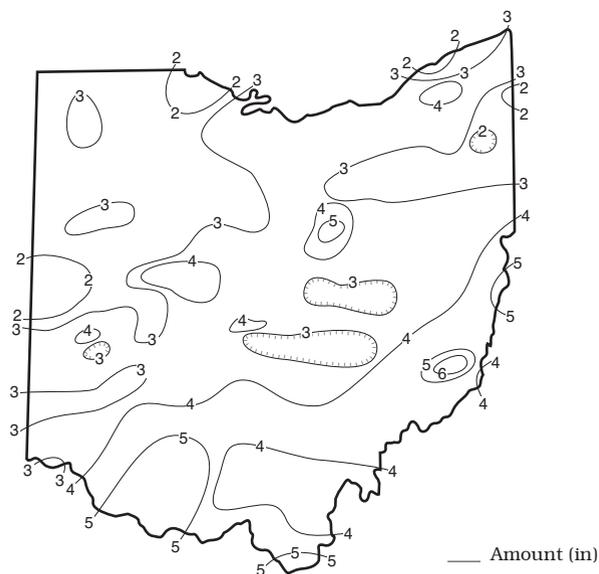
**PRECIPITATION** during May was below normal throughout most of Ohio but above normal in scattered locations, especially in the south-central and southeastern areas. Only the Southeast Region had slightly above normal precipitation. The state average was 3.40 inches, 0.69 inch below normal. Regional averages ranged from 4.26 inches, 0.03 inch above normal, for the Southeast Region to 2.67 inches, 1.04 inches below normal, for the Northwest Region. Woodsfield (Monroe County), reported the greatest amount of May precipitation, 6.46 inches. Pymatuning Reservoir (Ashtabula County) reported the least amount, 1.38 inches.

Precipitation during the month fell as showers and thunderstorms with the first half of May having more days with precipitation than the second half. The month began with widespread rain on May 1 and 2 with the greatest amounts falling across northern and extreme south-central Ohio. Some areas in northeastern Ohio reported around 1 inch while extreme south-central Ohio received nearly 2 inches of rain. Precipitation during May 5-7 was spotty, but areas in eastern Ohio reported as much as an inch of rain. The second week of May also had rain on most days. Precipitation was widespread during the week with most areas reporting between 0.75 and 1.5 inches of rain. Showers became widely scattered and isolated during the second half of the month. Rain during May 17-18 brought 0.25 to 0.5 inch amounts to southern Ohio, but little rain fell in northern areas of the state. Showers and thunderstorms were most numerous across eastern Ohio during May 20-22 with 0.25 to 0.5 inch common and a few areas reporting around 1 inch. Much less rain fell in western Ohio. The remainder of the month was rather dry in most locations. Scattered showers and storms moved across the state during May 28-29 with some heavy downpours, but most areas of the state received just light amounts or missed the rain completely. The drier conditions after the middle of the month allowed farmers the opportunity to catch up on field activities. During the second half of the month, areas in northwestern Ohio reported less than 0.25 inch total precipitation.

Precipitation for the 2016 water year is above normal across much of the state, but below normal in parts of northwestern, east-central and southeastern Ohio. The state average is 24.63 inches, 0.38 inch above normal. Regional averages range from 28.46 inches, 1.35 inches above normal, for the Southwest Region to 21.26 inches, 0.12 inch below normal, for the Northwest Region.

Precipitation for the 2016 calendar year is below normal in the southern two-thirds of Ohio and above normal in the northern third. The state average is 15.48 inches, 0.14 inch below normal. Regional averages range from 16.75 inches, 1.13 inches below normal, for the Southwest Region to 13.73 inches, 1.48 inches below normal, for the West Central Region.

## PRECIPITATION MAY

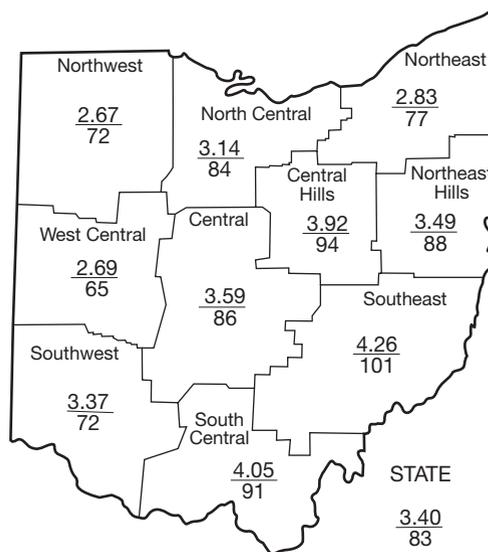


## PRECIPITATION

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	-1.04	+0.96	+1.33	+7.49	+5.10	-0.4
North Central	-0.58	+1.50	+2.08	+4.91	+2.40	+0.6
Northeast	-0.85	+0.32	+1.63	+2.48	+6.80	-1.3
West Central	-1.42	-1.21	+0.70	+5.78	+3.35	-1.1
Central	-0.60	+0.07	+1.32	+2.58	-0.66	-1.6
Central Hills	-0.23	+0.58	+1.82	+1.64	+2.02	-0.5
Northeast Hills	-0.48	+0.09	+0.50	+0.77	+3.00	-2.0
Southwest	-1.28	-1.05	+0.75	+5.59	+2.85	-0.5
South Central	-0.39	-1.44	+1.21	+3.45	+2.16	-1.7
Southeast	+0.03	+0.49	+1.04	+2.04	+1.04	-2.1
State	-0.69	+0.03	+1.23	+3.66	+2.78	

\*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

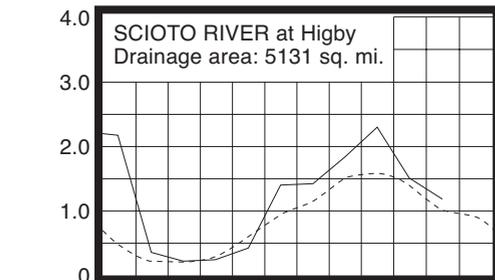
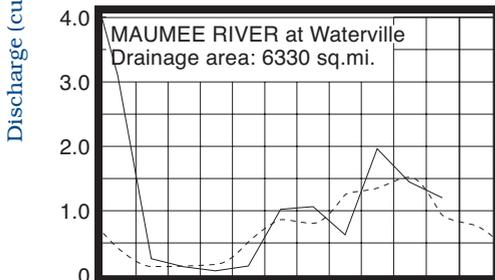
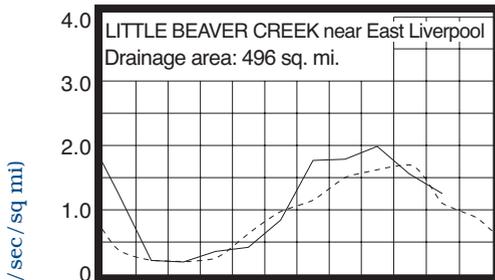
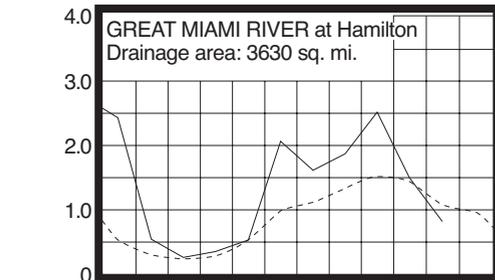
River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	638	104	82	88	103
Great Miami River at Hamilton	3,630	2,961	70	98	116	141
Huron River at Milan	371	607	164	128	107	128
Killbuck Creek at Killbuck	464	597	127	104	95	95
Little Beaver Creek near East Liverpool	496	621	114	96	98	99
Maumee River at Waterville	6,330	7,581	129	105	91	149
Muskingum River at McConnelsville	7,422	8,657	103	103	88	87
Scioto River near Prospect	567	425	94	91	98	146
Scioto River at Higby	5,131	6,105	118	105	109	126
Stillwater River at Pleasant Hill	503	243	47	89	113	138

**STREAMFLOW** during May was above normal across northern and eastern Ohio, and below normal in central and southwestern Ohio. Flows were high enough to be considered excessive in some basins in north-central Ohio while in west-central Ohio flows were low enough to be considered deficient. Flows during May were less than the flows during April throughout the state.

Streamflow at the beginning of the month was above normal in northern and southwestern Ohio, and below normal elsewhere. Generally, flows declined throughout the month with some temporary increases noted following local precipitation. Most drainage basins recorded their greatest flows for May near the beginning of the month. Some drainage basins in central Ohio had their greatest flows around

mid-month following local storms. Lowest flows for May occurred at or just before the end of the month across the state. Flows at the end of May were below normal across nearly all of Ohio.

### MEAN STREAM DISCHARGE

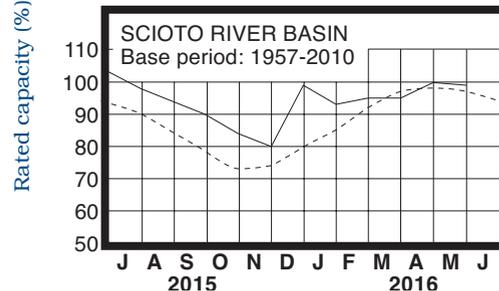
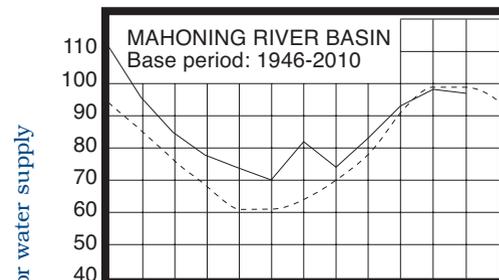


Base period for all streams: 1981-2010

**RESERVOIR STORAGE** for water supply during May declined slightly in both the Mahoning and Scioto river basins. Month-end storage remained slightly below normal in the Mahoning basin and slightly above normal in the Scioto basin.

Reservoir storage at the end of May in the Mahoning basin index reservoirs was 97 percent of rated capacity for water supply compared with 98 percent for last month and 97 percent for May 2015. Month-end storage in the Scioto basin index reservoirs was 99 percent of rated capacity for water supply compared with 100 percent for both last month and May 2015. Surface water supplies remain at favorable levels in spite of the below normal precipitation most of Ohio received during May.

### 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 May showed mixed responses. Generally, levels declined in most aquifers across Ohio, except for some rises noted in consolidated aquifers in northern Ohio and a few unconsolidated aquifers in east-central areas of the state. However, most of these rises were early in the month and levels declined steadily during the remainder of May. Levels in most other aquifers were rather stable or declined slightly throughout the month.

Ground water storage remains below normal across much of Ohio, but is above normal in some consolidated aquifers and deeper, unconsolidated aquifers in central, southeastern and northwestern areas of the state. Current ground water levels are above the levels of a year ago in most aquifers throughout Ohio. Even with below normal levels across much of Ohio, current ground water supplies are adequate throughout the state. However, little recharge can normally be expected during the summer high use season. Ample precipitation during the next few months can possibly reduce the rate of decline in many aquifers as well as be a benefit for agricultural concerns in the state. Soil moisture is favorable in many areas of Ohio. The Ohio Agricultural Statistics Service reports that near the end of May, soil moisture was rated as being short in 7 percent of the state, adequate in 77 percent of the state and surplus in 16 percent of the state.

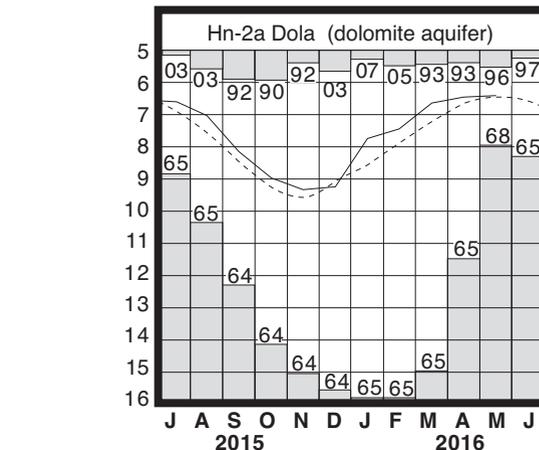
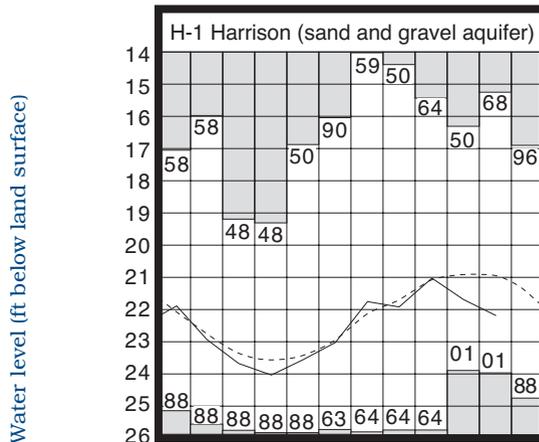
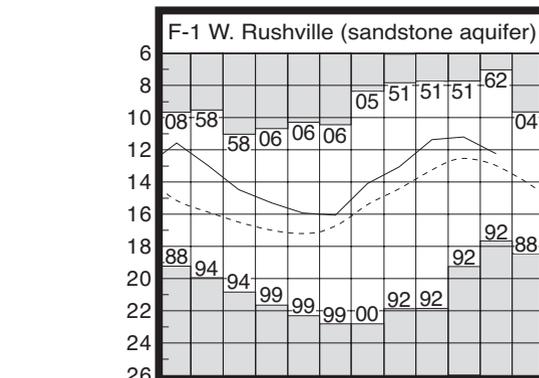
**LAKE ERIE** level rose during May. The mean level was 573.03 feet (IGLD-1985), 0.20 foot above last month's mean level and 1.18 feet above normal. This month's level is 1.15 feet above the May 2015 level and 3.83 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during May averaged 2.12 inches, 1.27 inches below normal. Precipitation in the entire Great Lakes basin during May was 1.99 inches, 1.04 inches below normal. For the 2016 calendar year through May, precipitation in the Lake Erie basin has averaged 13.70 inches, 0.21 inch below normal, while the entire Great Lakes basin has averaged 12.19 inches, 0.46 inch 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 about 4 inches above to as much as 21 inches above the normal seasonal average.

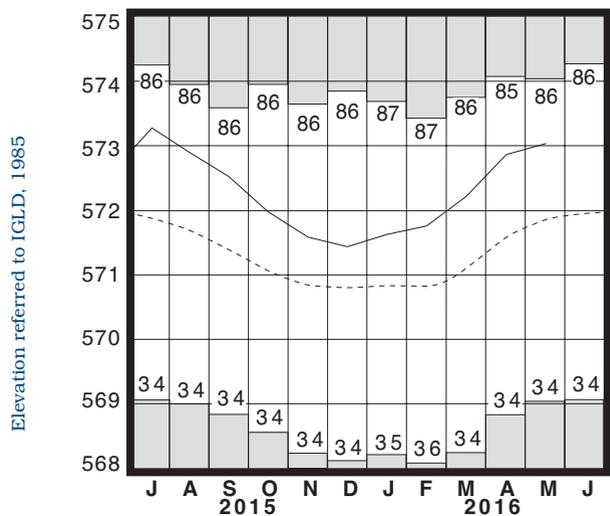
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	12.21	+0.89	-0.87	+0.52
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.28	-1.08	-0.12	+0.49
Fr-10	Columbus, Franklin Co.	Gravel	41.36	+1.20	-0.27	+0.45
H-1	Harrison, Hamilton Co.	Gravel	22.19	-1.24	-0.49	+0.25
Hn-2a	Dola, Hardin Co.	Dolomite	6.41	+0.06	+0.10	+0.86
Po-124	Freedom, Portage Co.	Sandstone	76.82	-0.65	+0.27	-0.45
Tu-1	Strasburg, Tuscarawas Co.	Gravel	12.05	-0.20	+0.28	+0.18

## GROUND-WATER LEVELS



Base periods: F-1, 1947-2010; H-1 1951-2010.  
Hn-2a, 1955-2010

## LAKE ERIE LEVELS



Base period: 1918-2010

Record high and low, year of occurrence

Normal - - - - Current ———

## SUMMARY

Precipitation during May was below normal throughout most of the state but above normal in areas of south-central and southeastern Ohio. Streamflow was above normal in northern and eastern Ohio, and below normal in central and southwestern areas of the state. Reservoir storage declined slightly but remained at near normal levels. Ground water storage showed mixed responses but remained adequate statewide, in spite of being below normal across much of Ohio. Lake Erie level rose 0.20 foot and was 1.18 feet above the long-term May 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.

## 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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