MONTHLY WATER INVENTORY REPORT FOR OHIO

April 2015

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

PRECIPITATION for April was above normal throughout most of the state; only the Northwest and Northeast regions had below normal precipitation. The state average was 4.48 inches, 0.93 inch above normal. Regional averages ranged from 6.62 inches, 2.98 inches above normal, for the South Central Region to 2.97 inches, 0.37 inch below normal, for the Northwest Region. This month tied as the thirteenth wettest April on record for the South Central Region. West Union (Adams County) reported the greatest amount of April precipitation, 8.77 inches. Ashtabula (Ashtabula County) reported the least amount, 1.80 inches.

Precipitation fell during each week of the month. Most of the precipitation fell as rain with small amounts of snow only reported at some locations in northeastern Ohio. Precipitation during April 2-4 was greatest across southern Ohio with 1-2 inches reported, decreasing to 0.25 to 0.5 inch in northwestern Ohio. Several rounds of showers and thunderstorms moved across the state during April 6-10. Most of the state received at least 1 inch of rain with more than 3 inches reported in areas of southern and eastern Ohio. Additional periods of heavy rain moved across southern Ohio on April 13 and 14 with 1-2 inches common. The second half of April was not as wet as the first half, but there were still several days with precipitation. Most areas of the state received amounts of 0.5 to 1 inch of precipitation during April 19-20, but some areas in west-central and southwest Ohio reported more than 1 inch. Storms crossing the southwestern half of the state on April 25 produced about 0.5 inch of rain. The month ended with light showers in many areas of Ohio.

Precipitation for the 2015 water year is below normal in the northern two-thirds of the state and above normal in the southern third. The state average is 19.47 inches, 0.69 inch below normal. Regional averages range from 25.56 inches, 3.60 inches above normal, for the South Central Region to 13.53 inches, 4.14 inches below normal, for the Northwest Region.

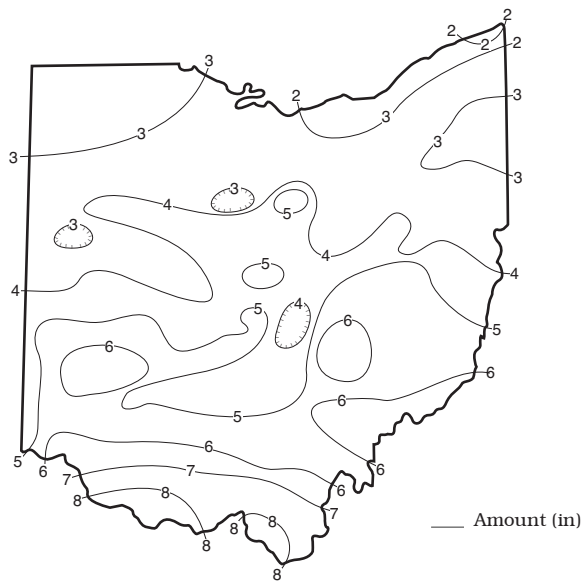
Precipitation for the 2015 calendar year is above normal in the southern two-thirds of Ohio and below normal in the northern third. The state average is 12.12 inches, 0.59 inch above normal. Regional averages range from 15.78 inches, 2.65 inches above normal, for the South Central Region to 8.03 inches, 1.79 inches below normal, for the Northwest Region.

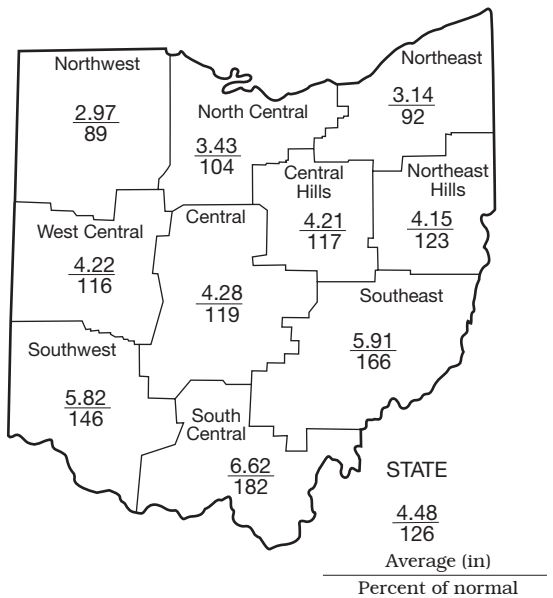
PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1961-2010					Palmer Drought Severity Index*
	This Month	Past 3 Mos.	Past 6 Mos.	Past 12 Mos.	Past 24 Mos.	
Northwest	-0.37	-1.71	-3.90	-4.04	-1.47	-1.3
North Central	+0.12	-0.70	-2.36	-1.58	+5.99	+0.4
Northeast	-0.28	-1.23	-1.77	+4.39	+11.76	-0.8
West Central	+0.59	+0.18	-1.28	-1.74	+0.05	-1.3
Central	+0.69	+0.61	-1.11	-1.78	+2.23	-0.7
Central Hills	+0.60	+0.12	-1.37	+0.79	+6.66	-0.8
Northeast Hills	+0.78	+0.42	-1.09	+4.38	+6.91	-0.9
Southwest	+1.84	+1.40	+0.38	-1.27	+2.15	+0.5
South Central	+2.98	+3.54	+1.67	-0.25	+3.08	+0.9
Southeast	+2.35	+2.68	+1.54	+0.24	+5.89	+0.1
State	+0.93	+0.53	-0.94	-0.09	+4.29	

*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 APRIL





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	1,339	91	94	94	112
Great Miami River at Hamilton	3,630	9,003	172	112	92	101
Huron River at Milan	371	487	83	119	91	111
Killbuck Creek at Killbuck	464	981	138	117	94	119
Little Beaver Creek near East Liverpool	496	1,268	151	143	118	123
Maumee River at Waterville	6,330	7,712	80	77	66	76
Muskingum River at McConnelsville	7,422	20,620	163	117	93	106
Scioto River near Prospect	567	1,165	137	112	76	92
Scioto River at Higby	5,131	10,810	150	108	85	101
Stillwater River at Pleasant Hill	503	1,008	150	107	84	85

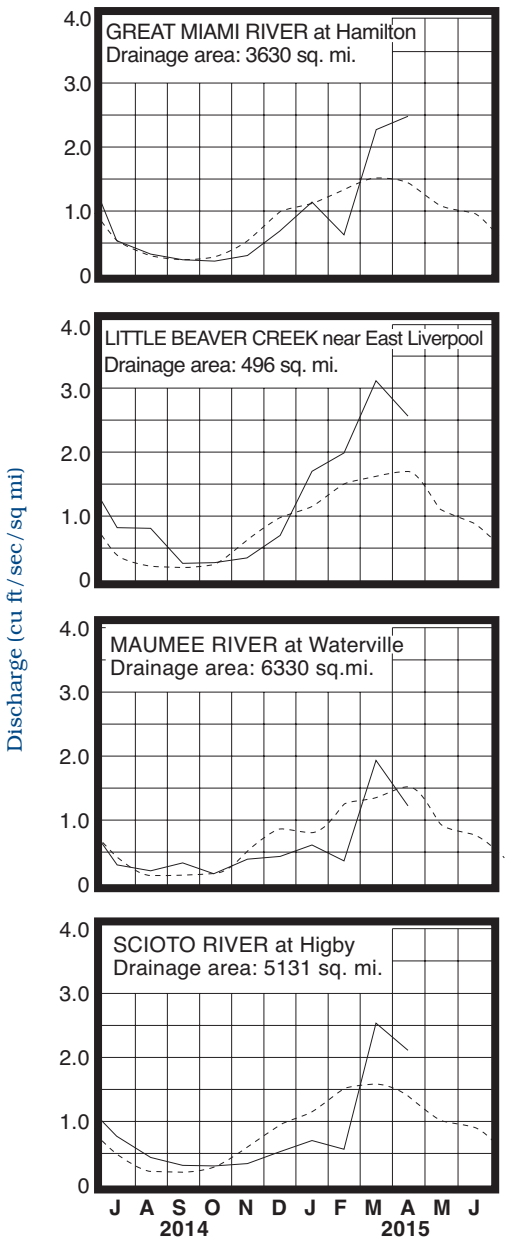
STREAMFLOW during April was generally above normal in the southern two-thirds of Ohio and below normal in the northern third. April flows declined from the March flows in most drainage basins. Flows were high enough to be considered excessive in many basins across the southern two-thirds of the state.

Flows at the beginning of April were below normal throughout most of Ohio. Flows increased after April 2 following widespread precipitation. Greatest flows for the month occurred during April 9-11 throughout the state with minor flooding common in many areas. Flows generally declined from these peaks through the end of the month, except for some temporary increases following local precipitation. Lowest flows occurred at or near the end of the month, except in the southwestern and south-central areas where they occurred near the beginning of April. Streamflow at the end of April was below normal statewide.

RESERVOIR STORAGE for water supply during April increased in both the Mahoning and Scioto river basin reservoirs. Storage at the end of the month was below normal in the Mahoning River basin and nearly normal in the Scioto River basin.

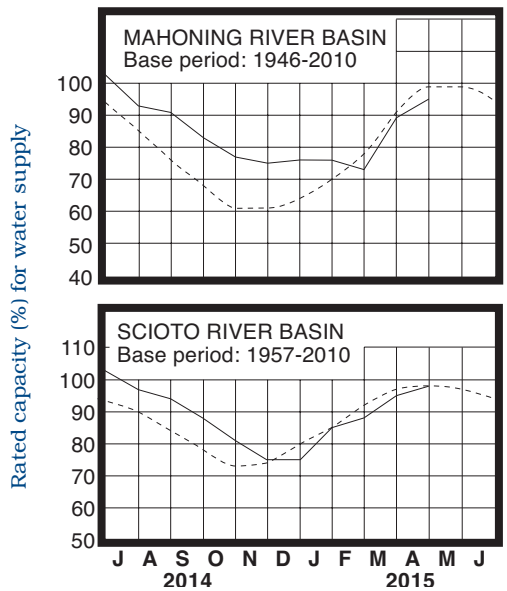
Reservoir storage at the end of April in the Mahoning basin index reservoirs was 95 percent of rated capacity for water supply compared with 89 percent for last month and 104 percent for April 2014. Month-end storage in the Scioto basin index reservoirs was 98 percent of rated capacity for water supply compared with 95 percent for last month and 105 percent for April 2014. Surface water supplies are adequate throughout the state.

MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

RESERVOIR STORAGE FOR WATER SUPPLY



Normal – – – – Current ———

GROUND-WATER LEVELS

GROUND WATER levels during April rose seasonally in all aquifers throughout the state. Net increases during April were greater than usually observed in most areas of Ohio. Generally, ground water levels in deeper aquifers rose throughout most of the month. Levels in shallower aquifers rose during the first half of the month, then were rather stable or declined during the second half of April.

As we approach the end of the recharge season, the ground water storage situation is in a favorable position across the state. The above normal precipitation during April across most of Ohio was a benefit for ground water supplies; however, ground water storage continues to remain at below normal levels throughout much of Ohio. Soil moisture conditions across the state are favorable for some additional improvement in ground water storage during the next month or two, provided there is near-normal precipitation and other climatic conditions. The Ohio Agricultural Statistics Service reports that near the end of April, soil moisture was rated as being adequate in 60 percent of the state and surplus in 40 percent of the state. Also, current levels are higher than they were at this time last year in most areas of Ohio.

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	11.33	+1.18	+1.62	+0.26
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.32	-1.31	+0.63	+0.35
Fr-10	Columbus, Franklin Co.	Gravel	41.72	+0.82	+0.52	+0.18
H-1	Harrison, Hamilton Co.	Gravel	21.45	-0.54	+0.45	-0.35
Hn-2a	Dola, Hardin Co.	Dolomite	6.83	-0.23	+0.94	+0.18
Po-124	Freedom, Portage Co.	Sandstone	76.40	-0.15	+0.54	+0.23
Tu-1	Strasburg, Tuscarawas Co.	Gravel	10.82	+0.69	+1.50	+1.38

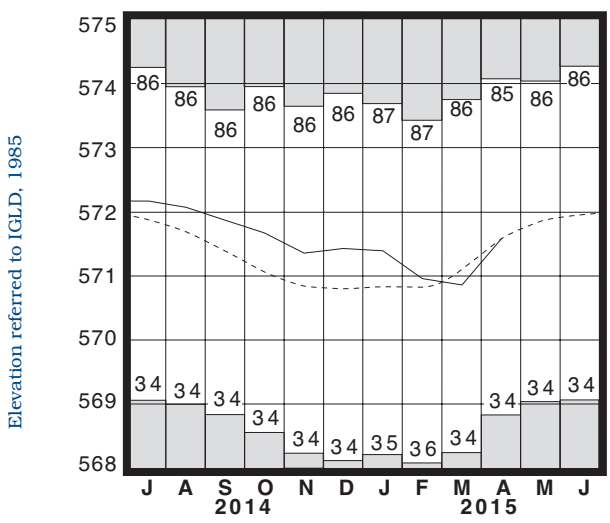
Note: The value, as published in the March issue in the Ground-Water Levels table (page 3) in the Departure From Normal column for observation well F-1, is incorrect. The correct value is +0.28. Correction to the table has been made in the online version.

LAKE ERIE level rose seasonally during April. The mean level was 571.59 feet (IGLD-1985), which is normal and 0.76 foot above last month's mean level. This month's level is 0.07 foot above the April 2014 level and 2.39 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during April averaged 2.79 inches, 0.40 inch below normal. For the entire Great Lakes basin, April precipitation averaged 2.29 inches, 0.27 inch below normal. For calendar year 2015 through April, precipitation in the Lake Erie basin has averaged 6.81 inches, 3.72 inches below normal, while the entire Great Lakes basin has averaged 5.43 inches, 3.27 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 near to above normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as high as 14 inches above to about 3 inches below the normal seasonal average.

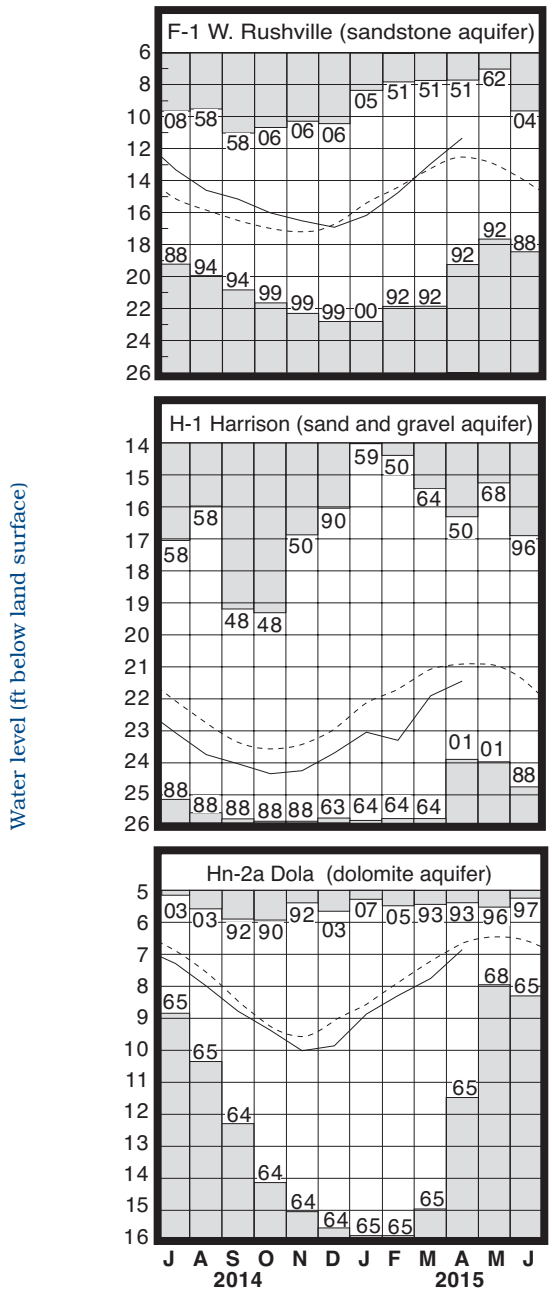
LAKE ERIE LEVELS



Base period: 1918-2010

Record high and low, year of occurrence

GROUND-WATER LEVELS



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 April was above normal throughout most of Ohio; only the Northwest and Northeast regions had below normal precipitation. Streamflow was above normal in the southern two-thirds of the state and below normal in the northern third. Reservoir storage increased and ground water levels rose statewide. Lake Erie level rose 0.76 foot and was normal for this time of the year.

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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