



MONTHLY WATER INVENTORY REPORT FOR OHIO

August 2014

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

PRECIPITATION during August varied greatly across the state, but was generally above normal in the eastern one-third, west-central and extreme south-central areas of Ohio, and below normal in the central one-third, northwestern and much of southwestern areas. The state average was 4.12 inches, 0.54 inch above normal. Regional averages ranged from 7.20 inches, 3.58 inches above normal, for the Northeast Hills Region to 1.70 inches, 1.74 inches below normal, for the North Central Region. This was the third wettest August on record for the Northeast Hills Region and the seventh wettest for the Northeast Region. Conversely, this was the thirteenth driest August on record for the North Central Region. Beach City Dam (Tuscarawas County) received the greatest amount of August precipitation, 10.34 inches. Paulding (Paulding County) reported the least amount, 0.88 inch.

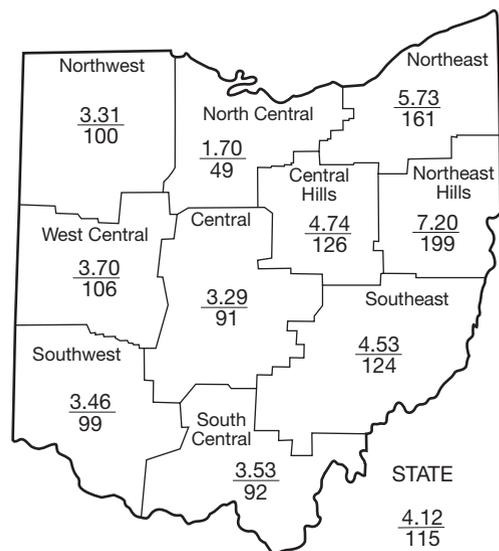
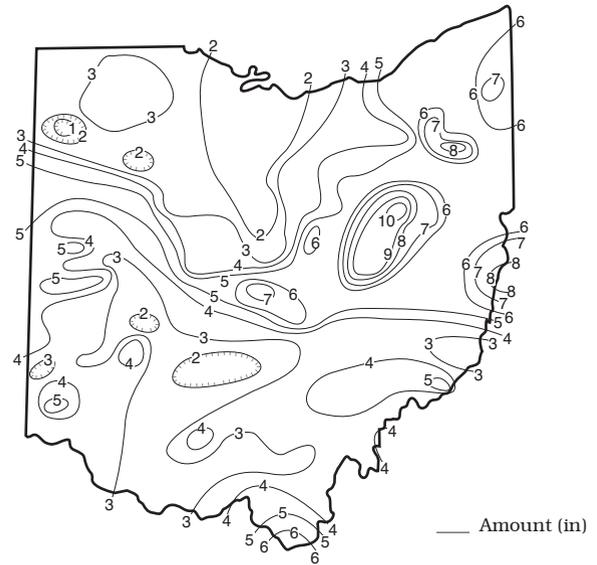
Precipitation during August fell as showers and thunderstorms typical of the season. Locally severe storms with heavy rain were reported in many areas of the state. Most areas received some precipitation during every week of the month. Storms developed nearly every day in the first week. During this period, the greatest amount of precipitation fell across northern Ohio. Some areas reported as much as 3 inches of rain while southern Ohio received less, especially in southwestern and areas of southeastern Ohio. Thunderstorms, some severe with heavy rain, fell across the state during August 10-12. Most of the state received more than 1 inch of precipitation during this period with the greatest amounts falling across eastern and areas of northwestern Ohio. Some locations reported more than 3 inches. Urban and small stream flooding was widespread in several counties, especially in eastern and areas of northwestern Ohio. Storms during August 19-22 brought the greatest amounts of rain to west-central, southwestern and northeastern Ohio, where more than 4 inches were reported from some areas. Minor flooding was again a concern in several counties. Storms crossed the state on the last day of August with generally 0.25-0.50 inch of rain reported and more than 2 inches at some locations; little or no rain was reported in northwestern Ohio from these storms.

Precipitation for the 2014 water year is above normal statewide. The state average is 40.50 inches, 4.63 inches above normal. Regional averages range from 45.81 inches, 9.98 inches above normal, for the Northeast Region to 33.00 inches, 0.91 inch above normal, for the Northwest Region.

Precipitation for the 2014 calendar year is above normal throughout most of Ohio, but below normal in the Northwest, Southwest and South Central regions. The state average is 29.52 inches, 2.28 inches above nor-

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PRECIPITATION AUGUST



Average (in)
Percent of normal

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	0.00	-1.02	-2.10	+0.03	+2.64	-1.4
North Central	-1.74	-0.65	+0.50	+2.25	+13.73	+0.5
Northeast	+2.18	+5.75	+7.45	+9.40	+18.01	+1.9
West Central	+0.21	+1.53	+2.43	+6.01	+7.95	-0.8
Central	-0.33	+0.81	+2.55	+3.93	+8.35	-1.0
Central Hills	+0.97	+3.52	+5.49	+6.66	+13.12	+0.5
Northeast Hills	+3.58	+5.79	+7.77	+8.39	+10.85	+0.6
Southwest	-0.02	+0.30	+0.05	+3.01	+2.75	-1.4
South Central	-0.31	-0.66	-1.52	+0.37	+2.74	-2.7
Southeast	+0.89	+0.33	+0.34	+1.30	+6.71	-2.1
State	+0.54	+1.56	+2.28	+4.11	+8.64	

*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

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	749	851	179	137	123
Great Miami River at Hamilton	3,630	1,188	108	109	122	137
Huron River at Milan	371	47	110	133	152	171
Killbuck Creek at Killbuck	464	438	313	190	156	133
Little Beaver Creek near East Liverpool	496	407	367	162	136	113
Maumee River at Waterville	6,330	1,404	166	81	124	116
Muskingum River at McConnelsville	7,422	6,764	308	145	138	112
Scioto River near Prospect	567	95	194	105	118	140
Scioto River at Higby	5,131	2,301	206	115	116	118
Stillwater River at Pleasant Hill	503	125	172	97	101	118

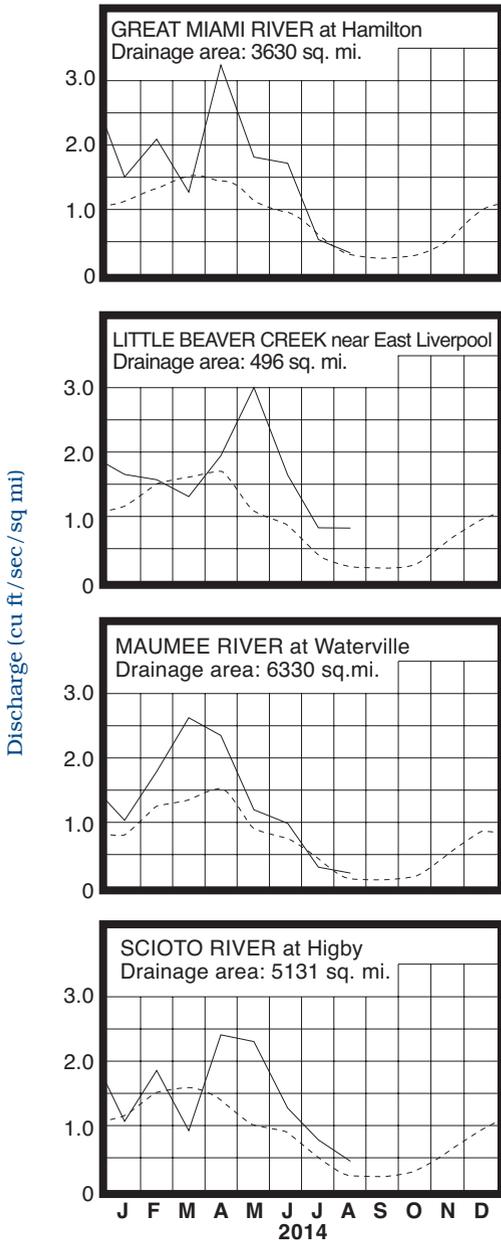
STREAMFLOW during August was above normal throughout most of the state. Flows in the eastern half of Ohio were high enough to be considered excessive. August flows were seasonally less than the July flows across most of the state, but greater in some northeastern Ohio streams. Preliminary data indicates the Grand River near Painesville gauging station recorded its fourth greatest monthly flow for August.

Flows at the beginning of the month were above normal throughout most of the state. Streamflow increased during the first week as most of Ohio received rain during this period. Drainage basins in central and north-central Ohio had their greatest flows for August during the first week of the month. Flows decreased from these peaks, then increased again following the August 10-12 precipitation and following the August 19-22 rainfall. Greatest flow across the remainder of the state occurred during the August 20-24 period. Low flows for the month occurred at various times through the month, but generally occurred around August 10 in east-central and southeastern drainage basins, just before the storms of August 19-22 in much of western Ohio, and on the last day of the month in northeastern and central Ohio. Flows at the end of the month were above normal across much of the state, but below normal in north-western and central Ohio drainage basins.

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

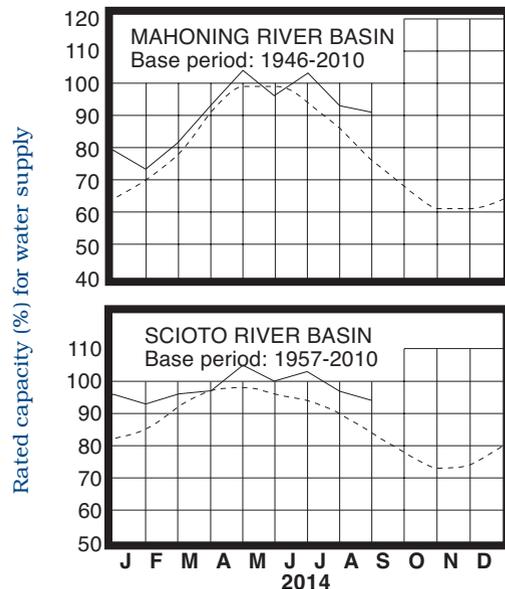
Reservoir storage at the end of August in the Mahoning basin index reservoirs was 91 percent of rated capacity for water supply compared with 93 percent for last month and 91 percent for August 2013. Month-end storage in the Scioto basin index reservoirs was 94 percent of rated capacity for water supply compared with 97 percent for last month and 94 percent for August 2013. Surface water supplies have been in excellent condition across Ohio throughout the summer high-use period.

MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

RESERVOIR STORAGE FOR WATER SUPPLY



GROUND-WATER LEVELS

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

GROUND WATER levels during August declined in most aquifers throughout the state. Generally, water levels in consolidated aquifers steadily declined throughout the month while levels in unconsolidated aquifers showed some improvement following local precipitation, but soon returned to a rate of decline typical for the month of August.

Ground water storage continues to remain above normal in most aquifers in the eastern half of the state and below normal in aquifers in the western half. Current ground water levels in most unconsolidated aquifers are higher than the levels recorded in August 2013 while they are lower in most consolidated aquifers. Ground water supplies remain adequate throughout the state. Adequate precipitation during the upcoming recharge season would go a long way in ensuring that ground water supplies remain at favorable levels across the state. The Ohio Agricultural Statistics Service reports that soil moisture at the end of August was rated as being short or very short in 27 percent of the state, adequate in 64 percent of the state, and surplus in 9 percent of the state.

LAKE ERIE level declined during August. The mean level was 572.08 feet (IGLD-1985), 0.10 foot below last month's mean level and 0.39 foot above normal. This month's level is 0.30 foot above the August 2013 level and 2.88 feet above Low Water Datum.

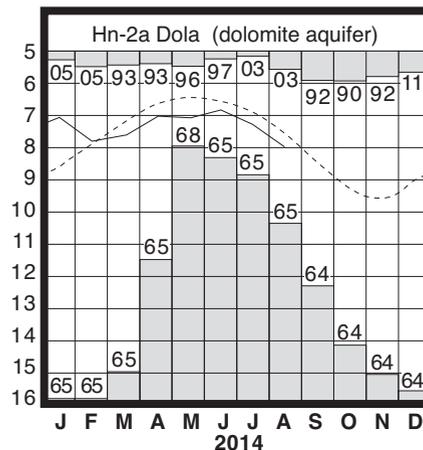
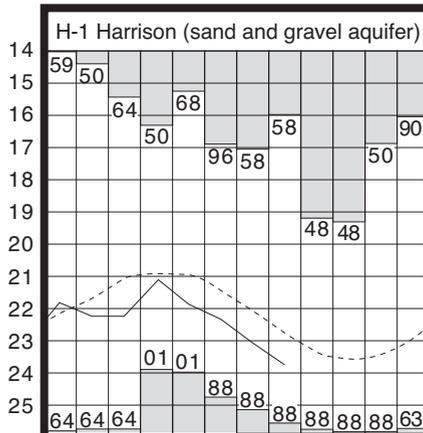
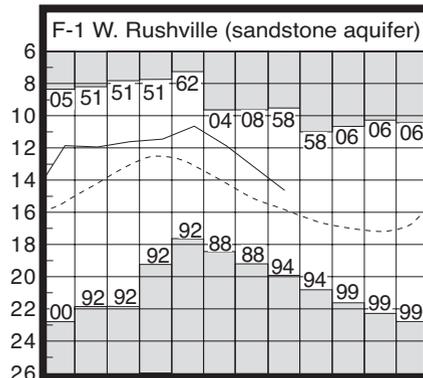
The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during August averaged 3.69 inches, 0.48 inch above normal. For the entire Great Lakes basin, August precipitation averaged 3.71 inches, 0.57 inch above normal. For calendar year 2014 through August, precipitation in the Lake Erie basin has averaged 23.93 inches, which is normal. Precipitation in the entire Great Lakes basin during this period has averaged 22.67 inches, 1.44 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 17 inches above to around 7 inches below the normal seasonal level.

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	14.61	+1.21	-1.25	-1.71
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.54	-1.06	-0.81	+0.05
Fr-10	Columbus, Franklin Co.	Gravel	42.41	+1.79	-0.44	+1.07
H-1	Harrison, Hamilton Co.	Gravel	23.75	-1.00	-0.72	+0.13
Hn-2a	Dola, Hardin Co.	Dolomite	7.99	-0.43	-0.70	-1.66
Po-124	Freedom, Portage Co.	Sandstone	76.74	-0.01	-0.31	-0.44
Tu-1	Strasburg, Tuscarawas Co.	Gravel	11.76	+1.74	-0.02	+1.51

GROUND-WATER LEVELS

Water level (ft below land surface)

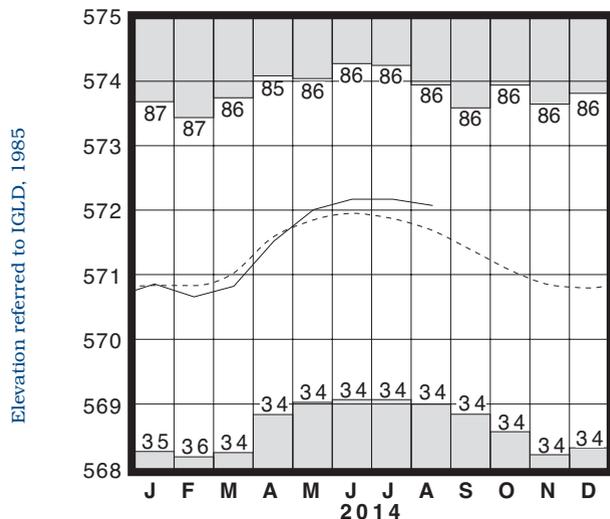


Base periods: F-1, 1947-2010; H-1 1951-2010.

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

Normal - - - - Current ———

LAKE ERIE LEVELS



Base period: 1918-2010

■ Record high and low, year of occurrence

(Precipitation continued from front)

mal. Regional averages range from 34.28 inches, 6.97 inches above normal, for the Northeast Hills Region to 23.62 inches, 0.62 inch below normal, for the Northwest Region.

SUMMARY

Precipitation during August was generally above normal in the eastern one-third, west-central and extreme south-central areas of the state, and below normal elsewhere. Streamflow was above normal throughout most of the state with some flows in eastern Ohio high enough to be considered excessive. Reservoir storage decreased but remained above normal. Ground water storage declined in most aquifers and levels remained above normal in eastern Ohio and below normal in western Ohio. Lake Erie level declined 0.10 foot and was 0.39 foot above the long-term August average.

NOTES AND COMMENTS

Lake White Dam Leak Discovered

During a routine maintenance inspection at Lake White State Park on Friday, August 29, 2014, park employees noticed an unusual amount of seepage along the southern edge of the Lake White dam spillway. As a precautionary measure, the Ohio Department Natural Resources (ODNR) lowered the lake level to winter pool. People with boats on Lake White were urged to remove them before lake levels were drawn down. It was hoped that the problem could be identified at this level, but seepage continued. The lake level continues to be lowered further to better address the problem and find possible solutions to fix the leak. The current plan is to lower the lake level 10 feet below winter pool, which will be 13 feet below normal pool. An engineering consulting company has been hired to help determine the cause of the leak and the remediation that will be required. ODNR has also been consulting with other state and local officials. Employees from Lake White State Park, ODNR Division of Soil and Water Resources Dam Safety Program and Division of Engineering will continue to be on site to monitor the situation closely.

Lake White is located near Waverly in Pike County. It is a recreational lake that was built in 1935. The Lake White dam impounds about 5,287 acre-feet of water. In the past, it has had a history of overtopping flows due to insufficient spillway capacity. The last occurrence of overtopping was in October 2006 following heavy rains in a short amount of time. At that time ODNR was in the process of phase one of upgrading and repairing the dam and spillway. Work began on the dam in May of 2006 and was completed in September of 2007. Phase two repairs are currently in design.

Boating activities on Lake White will remain at a reduced level for the foreseeable future. However, the remainder of Lake White State Park remains open to the public. Updated information will be available on the ODNR Parks website at parks.ohiodnr.gov.

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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