



MONTHLY WATER INVENTORY REPORT FOR OHIO

August 2013

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<http://www.ohiodnr.gov/tabid/4191/Default.aspx>

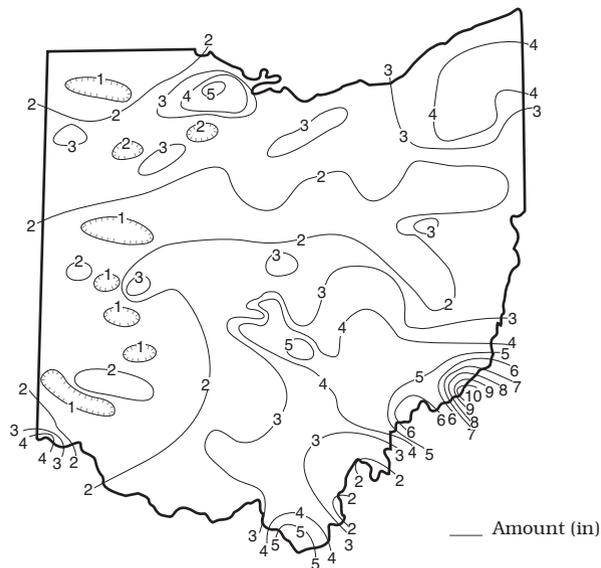
PRECIPITATION for August was below normal throughout most of Ohio; only the Southeast Region had above normal precipitation. The state average was 2.55 inches, 1.03 inches below normal. Regional averages ranged from 4.03 inches, 0.39 inch above normal, for the Southeast Region to 1.33 inches, 2.16 inches below normal, for the West Central Region. This was the sixth driest August on record for the Southwest Region and the eighth driest for the West Central Region. Newport (Washington County) reported the greatest amount of August precipitation, 10.23 inches. Lakeview (Logan County) reported the least amount, 0.67 inch.

Precipitation during August fell as showers and thunderstorms and varied greatly across the state. Most of Ohio received the bulk of the month's precipitation during the first 10 days of the month. Showers and isolated thunderstorms during the first three days of August brought 0.25-0.50 inch across most of the state with 1-2 inches reported in some areas of northwestern Ohio. Showers and storms were widespread during August 7-10 with amounts of between 1 and 2 inches reported at most locations throughout the state. The next two weeks of August were rather dry across most of Ohio with just some light showers reported on a day or two. Several areas reported no rain at all during this period; however, unusually heavy rain fell in parts of southeastern Ohio during August 12-13. Between 2 and 5 inches of rain was observed in areas in Athens, Meigs, Vinton and Washington counties. Rain returned to the state on August 22 and 23 with most areas receiving 0.25 inch or less. However, once again, heavier rain fell across parts of southeastern Ohio with 1-1.5 inches reported. Storms during August 27-28 were heaviest in northern Ohio with 0.50-1.0 inch totals reported, while on August 31 precipitation was heaviest in southern Ohio.

Precipitation for the 2013 water year is above normal throughout most of the state with only the West Central and Southwest regions having below normal precipitation. The state average is 38.52 inches, 2.65 inches above normal. Regional averages range from 42.66 inches, 6.83 inches above normal, for the Northeast Region to 33.83 inches, 1.74 inches above normal, for the Northwest Region.

Precipitation for the 2013 calendar year is above normal in most of northern and southeastern Ohio, and below normal elsewhere. The state average is 28.61 inches, 1.37 inches above normal. Regional averages range from 30.79 inches, 5.93 inches above normal, for the North Central Region to 25.65 inches, 1.25 inches below normal, for the West Central Region.

PRECIPITATION AUGUST

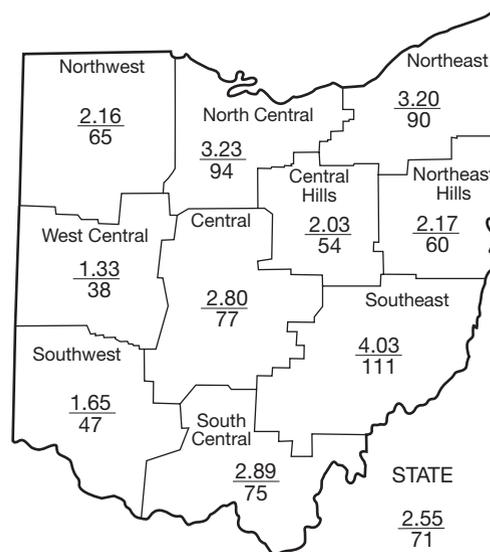


PRECIPITATION

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	-1.15	+2.84	+1.10	+2.51	+8.05	-0.5
North Central	-0.21	+7.01	+5.58	+10.91	+17.19	+2.6
Northeast	-0.35	+6.23	+3.80	+8.52	+13.87	+0.7
West Central	-2.16	-0.67	-1.22	+2.22	+6.13	-2.3
Central	-0.82	+3.71	+2.31	+4.85	+7.41	-1.6
Central Hills	-1.74	+5.57	+3.30	+6.85	+9.51	-1.1
Northeast Hills	-1.45	+4.00	+0.53	+2.61	+3.10	-2.4
Southwest	-1.83	+0.79	-0.67	-0.25	+3.49	-2.1
South Central	-0.95	+3.60	-0.60	+2.52	+4.35	-1.5
Southeast	+0.39	+6.63	+2.50	+5.41	+8.18	+0.6
State	-1.03	+3.96	+1.64	+4.59	+8.10	

*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	376	427	267	107	107
Great Miami River at Hamilton	3,630	1,067	97	91	103	100
Huron River at Milan	371	183	427	258	136	153
Killbuck Creek at Killbuck	464	187	134	180	123	107
Little Beaver Creek near East Liverpool	496	237	214	119	89	82
Maumee River at Waterville	6,330	1,381	163	126	115	97
Muskingum River at McConnellsville	7,422	3,598	164	166	104	88
Scioto River near Prospect	567	229	467	222	151	155
Scioto River at Higby	5,131	1,758	158	131	99	91
Stillwater River at Pleasant Hill	503	43	59	60	88	97

STREAMFLOW during August was above normal throughout most of the state, but below normal in basins in west-central and southwestern Ohio. Flows were high enough to be considered excessive in some basins, mainly in the northeastern areas of the state. Conversely, flows were low enough to be considered deficient in a few basins where precipitation was much below normal, most notably in west-central Ohio. Flows during August were noticeably less than the July flows statewide.

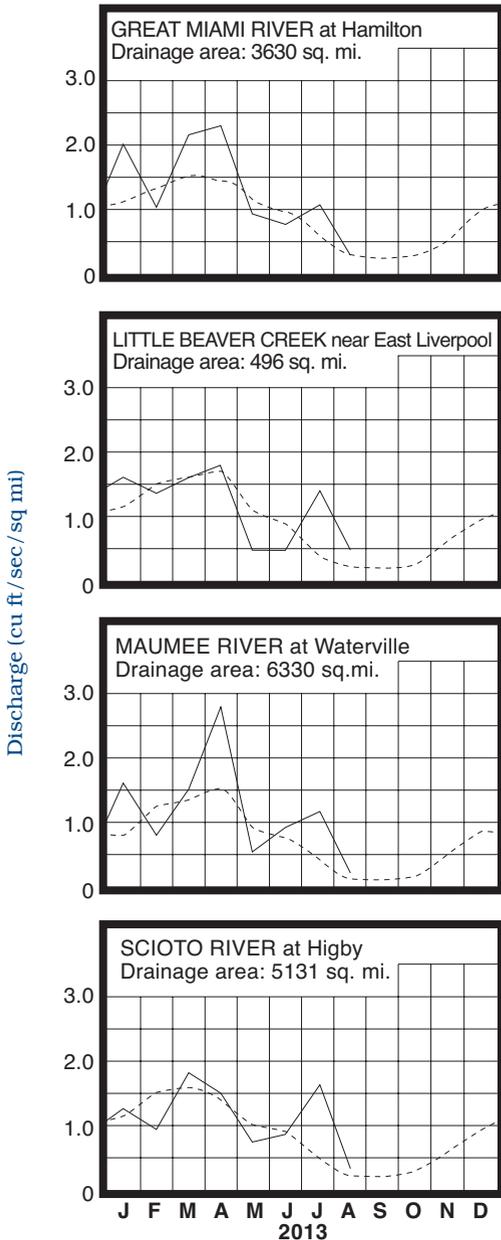
Flows at the beginning of the month were above normal throughout most of the state with just a few basins in western Ohio below normal. Generally, flows declined slowly during the first few days of the month and then increased following some of the month's most

widespread precipitation during August 7-10. As a result, greatest flows for the month occurred during August 8-11 throughout most of the state. A few basins in southeastern Ohio had their greatest flows for the month just after heavy rain fell on August 13. Basins in northeastern Ohio had their greatest flows near the end of the month following local precipitation. Lowest flows for the month occurred during August 21-22 across much of the state, although many basins had their lowest flows for August at or near the end of the month. Flows at the end of August were above normal in eastern Ohio and below normal in western Ohio.

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

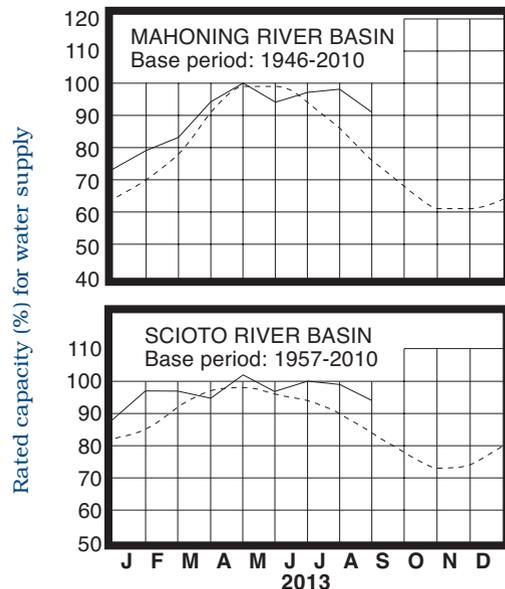
Reservoir storage at the end of August in the Mahoning basin index reservoirs was 91 percent of rated capacity for water supply compared with 98 percent for last month and 60 percent for August 2012. Month-end storage in the Scioto basin index reservoirs was 94 percent of rated capacity for water supply compared with 99 percent for last month and 76 percent for August 2012. Surface water supplies are at favorable levels for this time of the year.

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 seasonally across most of the state, but a few aquifers showed a small improvement due to recharge from locally above normal precipitation during July. Net declines during August from July levels were less than normally observed across most areas of the state. Generally, ground water levels in most unconsolidated aquifers and some shallower consolidated aquifers rose following the August 7-10 precipitation and then declined the remainder of the month. Levels in consolidated aquifers tended to steadily decline throughout most of August.

As a result of the above normal precipitation that most of Ohio has received during the summer months, current ground water levels are higher than they were last year at this time throughout most of the state. Ground water levels are also above normal across most of Ohio, but remain below normal in many aquifers in the southwestern quarter of the state where summer precipitation has not been as favorable. The next few months are typically the driest time of the year across the state, thus little or no recharge can be expected during the next two or three months. This is usually the time of year when ground water storage reaches its lowest level for the year. However, with near-normal precipitation during these next few months, ground water supplies should remain favorable throughout the state until the recharge season begins later this year. The Ohio Agricultural Statistics Service reports that soil moisture near the end of August was rated as being short or very short in 29 percent of the state, adequate in 65 percent of the state and surplus in 6 percent of the state.

LAKE ERIE level declined during August. The mean level was 571.78 feet (IGLD-1985), 0.23 foot lower than last month's mean level and 0.09 foot above normal. This month's mean level is 0.78 foot above the August 2012 level and 2.58 feet above Low Water Datum.

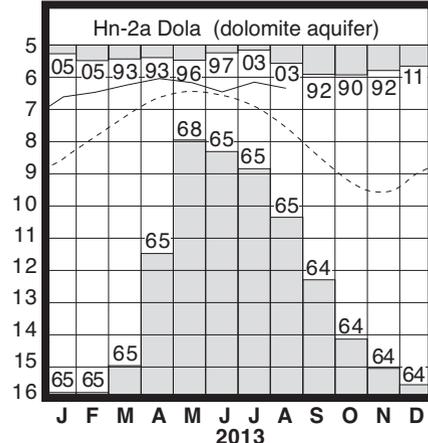
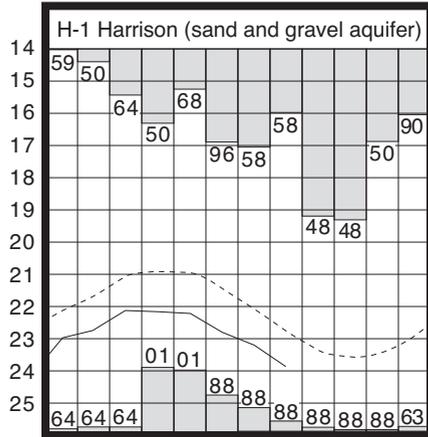
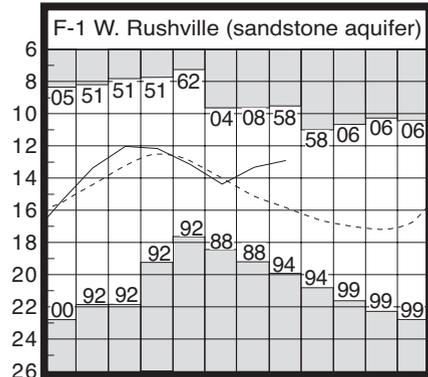
The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during August averaged 2.65 inches, 0.56 inch below normal. For the entire Great Lakes basin, August precipitation averaged 3.28 inches, 0.14 inch above normal. For calendar year 2013 through August, the Lake Erie basin has averaged 26.31 inches of precipitation, 2.38 inches above normal, while the entire Great Lakes basin has averaged 24.12 inches, 2.87 inches above normal.

In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should range from near-normal to about 3 inches below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 8 inches above normal to as much as 14 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	12.90	+2.92	+0.41	+3.02
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.59	-1.11	-1.05	+1.15
Fr-10	Columbus, Franklin Co.	Gravel	43.48	+0.72	-0.07	+1.12
H-1	Harrison, Hamilton Co.	Gravel	23.88	-1.13	-0.68	+0.39
Hn-2a	Dola, Hardin Co.	Dolomite	6.33	+1.23	-0.17	+2.49
Po-124	Freedom, Portage Co.	Sandstone	76.70	+0.03	-0.03	-0.06
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.27	+0.23	+0.27	+2.37

GROUND-WATER LEVELS

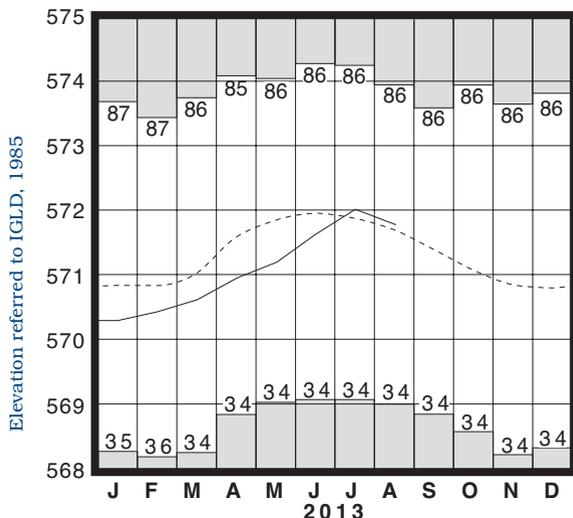


Water level (ft below land surface)

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 ———

SUMMARY

Precipitation during August was below normal throughout most of Ohio with only the Southeast Region having above normal precipitation. Streamflow was above normal across much of the state, but below normal in west-central and southwestern Ohio basins. Reservoir storage declined seasonally in the Mahoning and Scioto river basins, but remained above normal in both basins. Ground water levels declined seasonally in most aquifers. Declines were less than usually observed during August and ground water levels improved to above normal across much of the state. Lake Erie level declined 0.23 foot and was 0.09 foot above the long-term August average.

NOTES AND COMMENTS

Water Resources Data For Ohio Available On-Line

The Water Resources Division of the U.S. Geological Survey (USGS) recently announced the availability of the following report:

Water Resources Data For The United States, Water Year 2012.

This report contains data from cooperative long-term surface water and ground water networks as well as data collected as part of special short-term projects. Beginning with the 2006 annual report, paper reports are no longer produced. The USGS annual Water Data Report is part of a national web-based product with a "Site Data Sheet" available for each individual station that can be viewed and/or downloaded. Site Data Sheets contain all surface-water, ground-water and/or water-quality data that were collected at a particular site in a given water year. Site Data Sheets for water year 2012 in Ohio have been completed and are available at: <http://wdr.water.usgs.gov/wy2012/search.jsp>. Connecting to this web site will take you directly to the Site Data Sheet search page. Site Data Sheets are indexed by USGS station number and physical location, which includes state, county and hydrologic unit. If you have any questions or comments, please contact James Mangus with the USGS at (614) 430-7727 or e-mail: jpmangus@usgs.gov. Water Resources Data-Ohio reports for water year 2002-2011 can also be accessed online at: <http://wdr.water.usgs.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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