



MONTHLY WATER INVENTORY REPORT FOR OHIO

August 2015

Compiled By Scott C. Kirk

Hydrologist, Water Inventory Unit

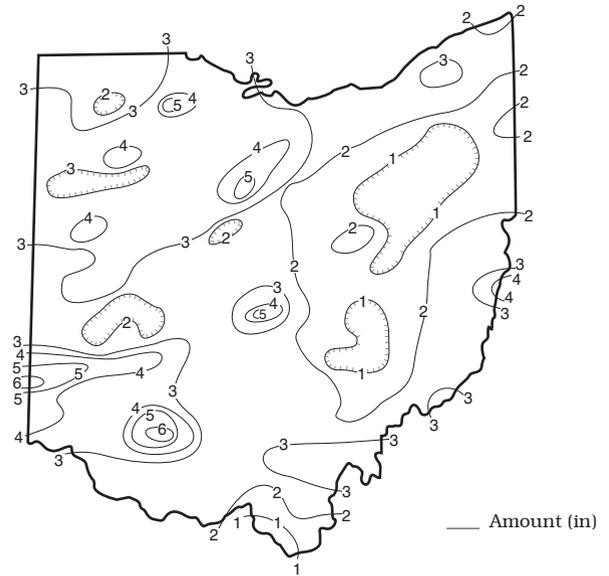
<http://soilandwater.ohiodnr.gov/water-use-planning/water-inventory-levels>

PRECIPITATION during August was below normal throughout most of the state; only the Southwest Region had above normal precipitation. Scattered locations throughout Ohio also had above normal rainfall. The state average was 2.51 inches, 1.07 inches below normal. Regional averages ranged from 3.65 inches, 0.17 inch above normal, for the Southwest Region to 1.47 inches, 2.30 inches below normal, for the Central Hills Region. This was the fifth driest August on record for the Central Hills Region. Hillsboro (Highland County) reported the greatest amount of August precipitation, 6.70 inches. Oxford (Butler County) also reported more than 6 inches for the month, 6.02 inches. McConnelsville (Morgan County) reported the least amount, 0.55 inch. Several other stations in eastern Ohio reported less than 1 inch of precipitation for August.

Precipitation during August fell as showers and thunderstorms typical of the season with some of these storms being strong with locally heavy downpours. The northwestern half of the state received rain on August 3 with 0.5 to 1 inch amounts common. Showers and thunderstorms on August 6 were confined to southern Ohio with 0.25 to 1 inch of rain reported. Precipitation during August 10-11 was much more widespread with some areas reporting more than 1 inch of rain, but most of east-central Ohio received just light amounts. Scattered storms moved across the state during August 14-15, but were most numerous in northern Ohio. Scattered showers and storms continued through August 17-20 with some areas receiving heavy rain, but most areas reported less than 0.5 inch. Storms during August 19 and 20 brought heavy rains from southwestern to central Ohio. Generally 1-2 inches fell in this area with more than 3 inches reported in parts of Highland County. The last eleven days of the month were much drier across most of the state with storms becoming very widely scattered. Many areas in eastern Ohio received no rain during this period. However, there were a few days during this period with some locations receiving brief heavy downpours. Some of the heaviest precipitation fell on the last two days of the month with isolated areas in the northwestern half of the state receiving more than 0.5 inch of rain.

Precipitation for the 2015 water year is above normal throughout most of the state, but below normal in the Central Hills and Northeast Hills regions. The state average is 37.92 inches, 2.05 inches above normal. Regional averages range from 42.85 inches, 4.47 inches above normal, for the South Central Region to 34.08 inches, 1.17 inches above normal, for the North Central Region.

PRECIPITATION AUGUST



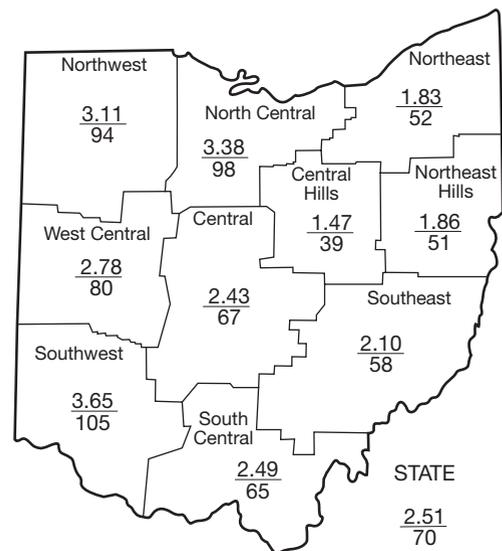
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PRECIPITATION

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	-0.20	+9.21	+8.94	+7.84	+7.64	+2.7
North Central	-0.06	+3.77	+2.94	+1.66	+4.23	+0.9
Northeast	-1.72	+1.90	+1.78	+0.79	+9.98	-1.4
West Central	-0.71	+6.62	+6.83	+2.76	+8.66	-0.3
Central	-1.19	+2.36	+2.84	-1.44	+2.31	-2.3
Central Hills	-2.30	+0.63	+1.23	-2.79	+4.39	-2.4
Northeast Hills	-1.76	+1.01	+1.52	-2.55	+5.84	-2.6
Southwest	+0.17	+5.67	+5.78	+2.80	+5.64	+1.0
South Central	-1.35	+3.16	+5.42	+2.59	+2.68	-1.0
Southeast	-1.54	+0.23	+2.32	-1.12	+0.08	-2.9
State	-1.07	+3.45	+3.96	+1.04	+5.11	

*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	60	68	290	143	113
Great Miami River at Hamilton	3,630	1,996	181	244	154	118
Huron River at Milan	371	62	145	189	148	111
Killbuck Creek at Killbuck	464	115	82	141	124	93
Little Beaver Creek near East Liverpool	496	111	100	186	142	108
Maumee River at Waterville	6,330	1,596	189	453	194	134
Muskingum River at McConnelsville	7,422	2,064	94	153	131	90
Scioto River near Prospect	567	84	171	381	195	127
Scioto River at Higby	5,131	1,815	163	219	142	105
Stillwater River at Pleasant Hill	503	193	266	288	162	114

STREAMFLOW during August was generally above normal in western Ohio and below normal in eastern Ohio. The August flows were less than the flows observed during July statewide. Flows were high enough to be considered excessive in some west-central and southwestern basins.

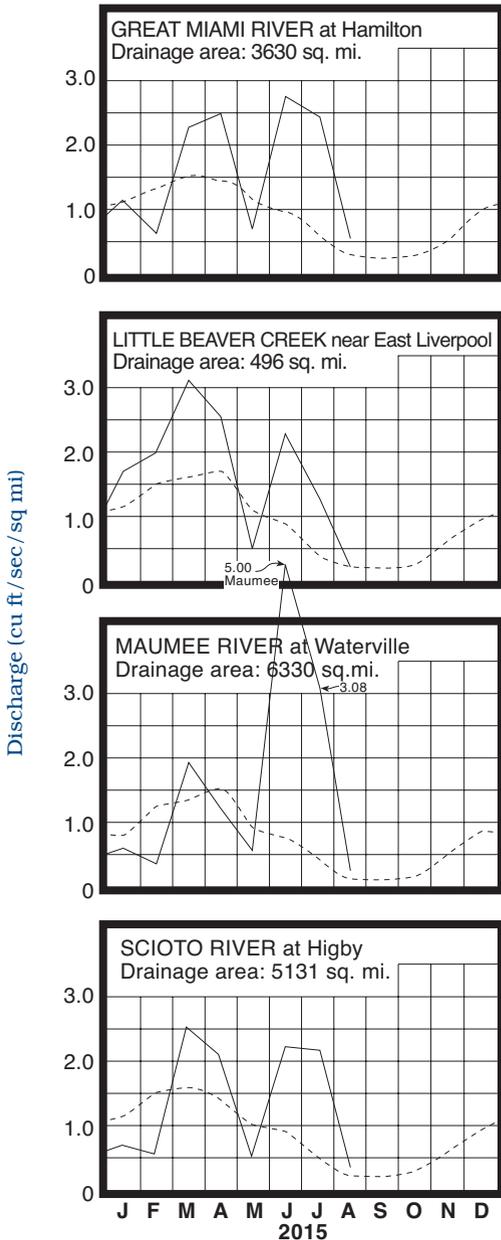
Streamflow at the beginning of the month was above normal in most areas of the state. Greatest flows occurred at various times throughout the month across the state; however, most drainage basins had their greatest flows during the first week of August. Greatest flows in drainage basins in west-central and northeastern Ohio occurred around August 11 while drainage basins in north-central and south-central Ohio experienced greatest flows for the month between August 18 and

21. Lowest flows for the month occurred near the end of August. Flows at the end of the month were below normal throughout much of the state, but above normal in the southwestern and north-central Ohio drainage basins.

RESERVOIR STORAGE for water supply during August decreased in both the Mahoning and Scioto river basins. Storage at the end of the month continued to be above normal in both basins.

Reservoir storage at the end of August in the Mahoning basin index reservoirs was 85 percent of rated capacity for water supply compared with 96 percent for last month and 91 percent for August 2014. Month-end storage in the Scioto basin index reservoirs was 94 percent of rated capacity for water supply compared with 98 percent for last month and 94 percent for August 2014.

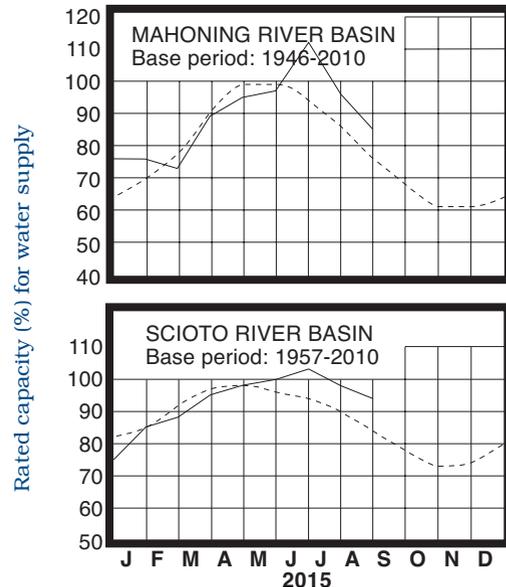
MEAN STREAM DISCHARGE



Base period for all streams: 1981-2010

Normal - - - - Current ———

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 all aquifers throughout Ohio. Net declines during the month were greater than usually observed in most aquifers. Ground water levels declined steadily throughout the month in most aquifers. A few shallow aquifers showed slight improvements following local precipitation, but quickly returned to a rate of decline typical for this time of the year.

Ground water supplies continue to remain adequate throughout Ohio. Levels in aquifers across much of the state are above normal; however, in some aquifers, especially shallow, unconsolidated aquifers, levels have fallen to slightly below normal. Current levels in most aquifers are higher than those recorded in August 2014. Ground water levels can be expected to continue to decline during the next few months. The below normal precipitation across much of the state during August has resulted in soil moisture being reduced considerably when compared to last month. The Ohio Agricultural Statistics Service reports that near the end of August, soil moisture was rated as being short or very short in 32 percent of the state, adequate in 62 percent of the state and surplus in 6 percent of the state. Near-normal precipitation and other climatic conditions during the autumn would be adequate to maintain the current favorable position ground water supplies are in until the 2016 water year recharge period begins.

LAKE ERIE level declined during August. The mean level was 572.90 feet (IGLD-1985), 0.39 foot below last month's mean level and 1.21 feet above normal. This month's mean level is 0.82 feet above the August 2014 level and 3.70 feet above Low Water Datum.

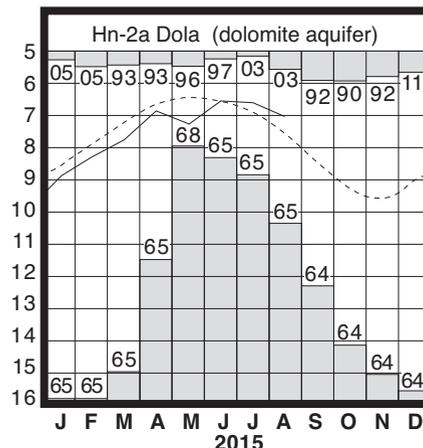
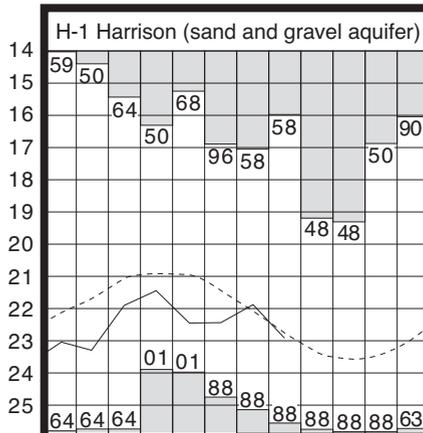
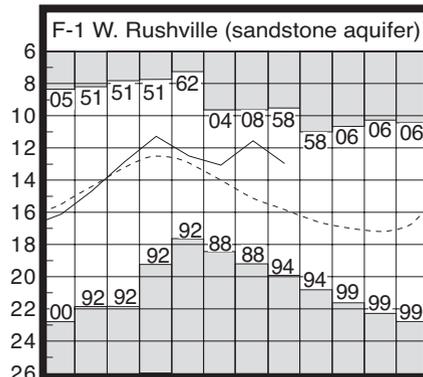
The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during August averaged 2.77 inches, 0.46 inch below normal. For the entire Great Lakes basin, August precipitation averaged 3.24 inches, 0.09 inch above normal. For calendar year 2015 through August, precipitation in the Lake Erie basin has averaged 23.40 inches, 0.60 inch below normal, while the entire Great Lakes basin has averaged 18.71 inches, 2.55 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 above normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 2 inches below normal to as much as 14 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	12.96	+2.86	-1.40	+1.65
Fa-1	Jasper Mill, Fayette Co.	Limestone	8.78	-0.30	-0.63	+0.76
Fr-10	Columbus, Franklin Co.	Gravel	42.02	+2.18	-0.36	+0.39
H-1	Harrison, Hamilton Co.	Gravel	22.91	-0.16	-1.02	+0.84
Hn-2a	Dola, Hardin Co.	Dolomite	7.10	+0.46	-0.50	+0.89
Po-124	Freedom, Portage Co.	Sandstone	76.59	+0.14	-0.40	+0.15
Tu-1	Strasburg, Tuscarawas Co.	Gravel	13.55	-0.05	-1.25	-1.79

GROUND-WATER LEVELS

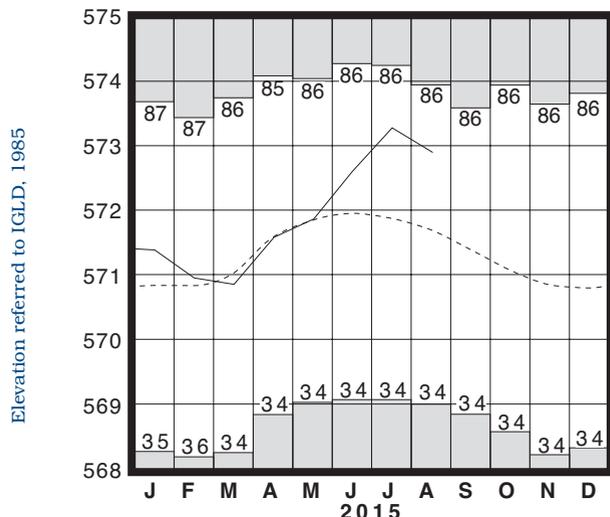
Water level (ft below land surface)



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 for the 2015 calendar year is above normal statewide. The state average is 30.57 inches, 3.33 inches above normal. Regional averages range from 34.30 inches, 4.81 inches above normal, for the Southwest Region to 27.98 inches, 0.67 inch above normal, for the Northeast Hills Region.

SUMMARY

Precipitation during August was below normal throughout most of the state; only the Southwest Region and a few scattered locations across the state had above normal precipitation. Streamflow was generally above normal in western Ohio and below normal in eastern Ohio. Reservoir storage decreased but remained above normal across most of the state. Ground water levels declined statewide. Lake Erie level declined 0.39 foot and was 1.21 feet above the long-term August average.

NOTES AND COMMENTS

Division of Soil and Water Resources Employee Changes

Emily Class, geologist with the ODNR, Division of Soil and Water Resources (DSWR), Water Inventory and Planning Program (WIPP), has resigned her position. Ms. Class has entered the University of Cincinnati to pursue a degree in education. Emily has been with the Division since August 2011. Mitch Valerio, currently an environmental specialist with the DSWR, will assume Emily's responsibilities. These responsibilities include assisting in the operation and maintenance of the Ohio observation well network, collecting, evaluating and disseminating various hydrologic data, and maintaining the Ohio observation well network database. Mitch began his career at ODNR as an intern in 2007 and has been responsible for managing the water withdrawal registration database since May 2013. Mitch can be reached at 614-265-6616 or e-mail at: mitch.valerio@dnr.state.oh.us. The Division of Soil and Water Resources wishes both Emily and Mitch the best in their new endeavors.

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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Ohio Department of Natural Resources

Division of Soil and Water Resources

2045 Morse Road

Columbus, Ohio 43229-6693

John Kasich
Governor

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Mike Bailey
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