



MONTHLY WATER INVENTORY REPORT FOR OHIO

August 2011

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

Compiled By Scott C. Kirk

Hydrologist
Water Inventory Unit

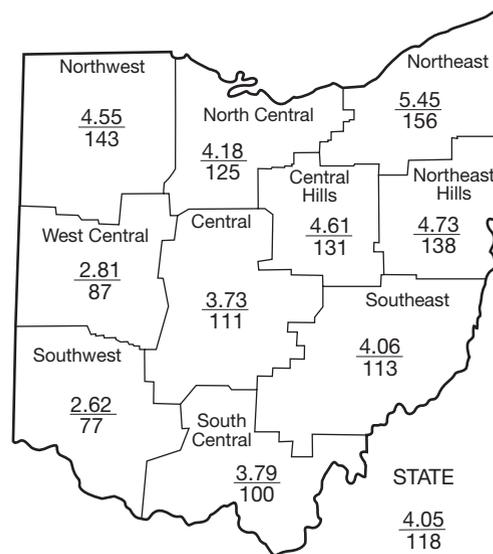
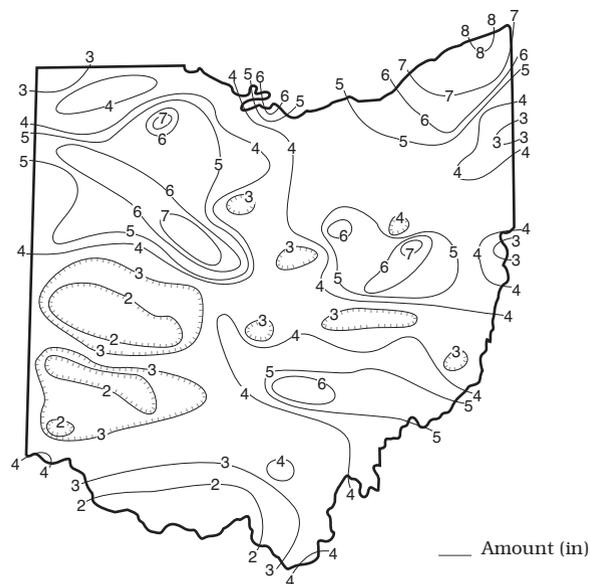
PRECIPITATION during August was above normal throughout much of the state, but below normal in the West Central and Southwest regions and at a few other scattered locations. The state average was 4.05 inches, 0.61 inch above normal. Regional averages ranged from 5.45 inches, 1.96 inches above normal, for the Northeast Region to 2.62 inches, 0.79 inch below normal, for the Southwest Region. Ashtabula (Ashtabula County) reported the greatest amount of August precipitation, 8.60 inches. Eaton (Preble County) reported the least amount, 1.08 inches.

Precipitation during August fell as showers and thunderstorms and varied greatly across the state. In the southwestern one-third of Ohio, most of the precipitation fell during the first nine days of the month. The remainder of the month was rather dry, with the only noteworthy precipitation of about 0.25 inch falling during August 24-25 at some locations. The remainder of the state received showers and thunderstorms on several days with locally severe storms and heavy rain reported in many areas. Small stream and urban flooding was reported following some of these storms. Scattered showers and thunderstorms during August 2-4 were greatest across areas of northern and southwestern Ohio where some locations received around 1 inch of rain. Storms were widespread during August 6-9 with several storms producing heavy rain, hail and strong winds. Most areas received 1 inch of rain where some received about 3 inches at scattered locations throughout the state. Showers and storms during August 14-15 were most numerous in eastern Ohio. Severe storms in north-central and northeastern Ohio on August 14 dumped nearly 5 inches in the Port Clinton area and 3.5 inches in the Cleveland area. Although storms during August 18-21 were widely scattered, they were slow moving with heavy rain. Nearly 2 inches of rain fell across parts of south-central Ohio from these storms on August 19. Numerous storms crossed the state during August 24-25. The heaviest rain fell from northwestern to southeastern Ohio with 1-2 inches common and more than 3 inches reported in areas of southeastern Ohio.

Precipitation for the 2011 water year is above normal statewide. The average for the state is 44.87 inches, 9.80 inches above normal. Regional averages range from 49.82 inches, 14.80 inches above normal, for the Northeast Region to 38.52 inches, 7.00 inches above normal, for the Northwest Region.

Precipitation for the 2011 calendar year is above normal statewide. The average for the state is 36.63 inches, 9.77 inches above normal. Regional averages range from 41.13 inches, 11.87 inches above normal, for the South Central Region to 32.44 inches, 8.51 inches above normal, for the Northwest Region.

PRECIPITATION AUGUST



PRECIPITATION

Region	DEPARTURE FROM NORMAL (IN.) Base period 1951-2000					Palmer Drought Severity Index*
	This Month	Past				
		3 Mos.	6 Mos.	12 Mos.	24 Mos.	
Northwest	+1.36	-1.37	+6.71	+5.98	+6.89	-1.2
North Central	+0.83	+1.70	+9.01	+11.33	+10.22	+1.9
Northeast	+1.96	+2.02	+11.11	+14.12	+13.14	+2.1
West Central	-0.43	-2.33	+5.94	+6.86	+5.80	-0.8
Central	+0.36	+1.06	+8.91	+9.07	+9.94	-0.1
Central Hills	+1.09	+0.81	+6.43	+7.75	+6.90	0.0
Northeast Hills	+1.30	+2.08	+8.37	+9.82	+7.29	-1.5
Southwest	-0.79	-2.07	+7.88	+6.43	+4.72	-1.4
South Central	+0.01	+0.13	+11.16	+10.83	+14.58	-1.1
Southeast	+0.48	+1.19	+7.90	+8.24	+7.82	-0.3
State	+0.61	+0.32	+8.35	+9.06	+8.76	

*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	501	570	87	198	138
Great Miami River at Hamilton	3,630	947	82	84	233	161
Huron River at Milan	371	48	53	68	235	178
Killbuck Creek at Killbuck	464	170	121	126	186	131
Little Beaver Creek near East Liverpool	496	135	99	55	172	128
Maumee River at Waterville	6,330	1,080	111	67	179	122
Muskingum River at McConnellsville	7,422	2,905	100	153	245	111
Scioto River near Prospect	567	535	1,184	133	256	173
Scioto River at Higby	5,131	3,333	253	131	225	152
Stillwater River at Pleasant Hill	503	30	42	70	206	143

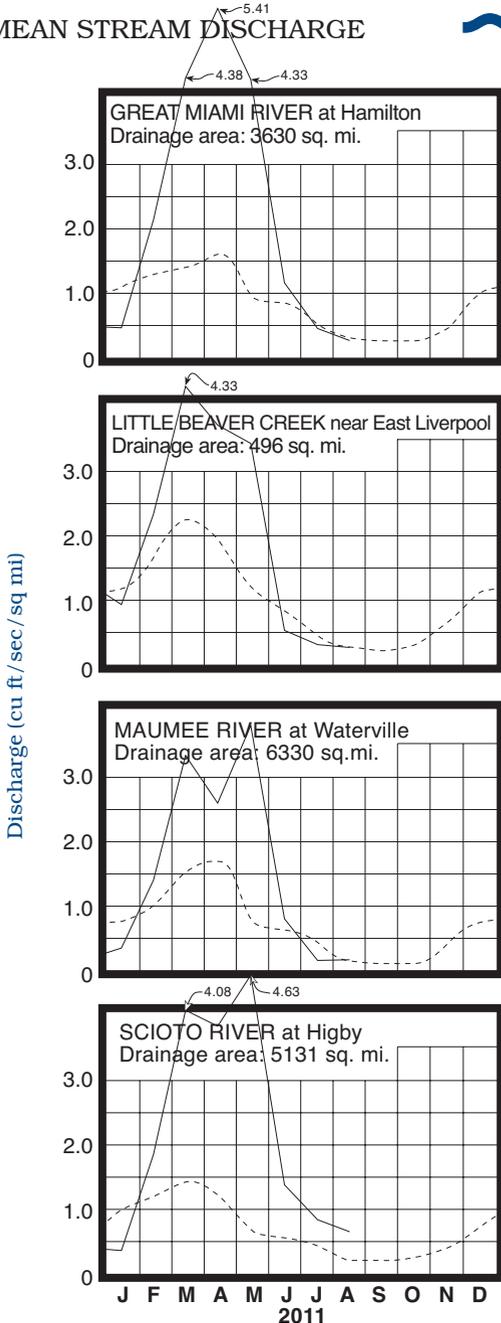
STREAMFLOW during August was above normal across much of Ohio, but below normal in the north-central, west-central and southwestern areas of the state. Flows in the northeastern, central and south-central portions of the state were high enough to be considered excessive for August while flows in the west-central portion were low enough to be considered deficient. August flows were less than the July flows except in northwestern, northeastern and central areas of the state where flows were greater. Preliminary data indicates the Scioto River near Prospect gauging station recorded its fifth greatest monthly flow for August.

Flows at the beginning of the month were generally above normal in the southeastern two-thirds of the state and below normal in the northwestern one-third. Flows in most drainage basins declined during the first week of August. Lowest flows for the month occurred at the end of the first week in northeastern Ohio. Flows increased statewide during the second week as a result of the precipitation that fell during August 6-9. Greatest flows for the month occurred across much of the state following this precipitation, generally between August 9 and 11. Greatest flows occurred around August 15 in northeastern Ohio basins as a result of the heavy rain that fell during August 14-15, while in northwestern and east-central Ohio basins greatest flows occurred following precipitation that fell on August 24 and 25. Lowest flows for the month occurred just prior to the August 24-25 precipitation in basins in northwestern, north-central, central and south-central Ohio. Lowest flows in west-central, southwestern and southeastern Ohio occurred on the last day of the month. At the end of the month, flows were below normal throughout much of the state, but above normal in central, south-central and northeastern Ohio basins.

RESERVOIR STORAGE for water supply during August decreased in both the Mahoning and Scioto river basins. Levels remained above normal seasonal levels in both basins.

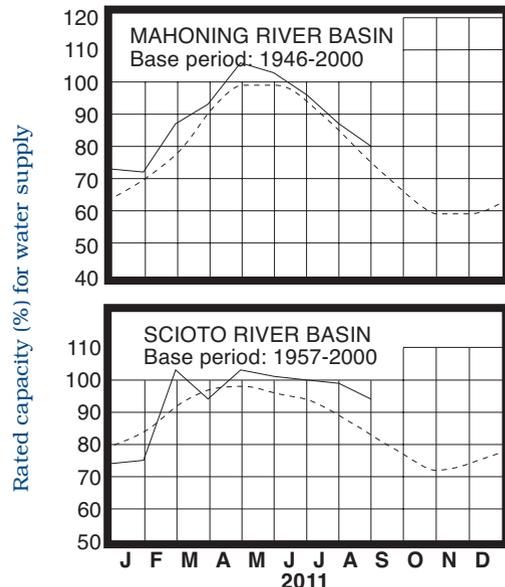
Reservoir storage at the end of August in the Mahoning basin index reservoirs was 80 percent of rated capacity for water supply compared with 87 percent for last month and 84 percent for August 2010. Month-end storage in the Scioto basin index reservoirs was 94 percent of rated capacity for water supply compared with 99 percent for last month and 86 percent for August 2010. Surface water supplies continue to remain at favorable levels across the state.

MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

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 in aquifers throughout the state. Levels in most aquifers declined steadily throughout the month. A few shallow aquifers, especially those adjacent to streams, showed slight improvement following local precipitation, but quickly returned to a steady rate of decline.

Much of west-central and southwestern Ohio has received below normal precipitation during the past 2 or 3 months. This is reflected in ground water levels which are mostly below normal in this part of the state. Ground water levels in aquifers across most of the remainder of Ohio are above normal. Current levels are higher than they were a year ago in most aquifers. A few exceptions are in some consolidated aquifers in eastern Ohio where current levels are slightly lower than they were during August 2010. Overall, the ground water situation in Ohio remains favorable for this time of the year. The Ohio Agricultural Statistics Service reports that near the end of August, soil moisture was rated as being short or very short in 19 percent of the state, adequate in 75 percent of the state and surplus in 6 percent of the state. With near-normal precipitation and other climatic conditions during the coming months, ground water supplies should remain adequate throughout the state.

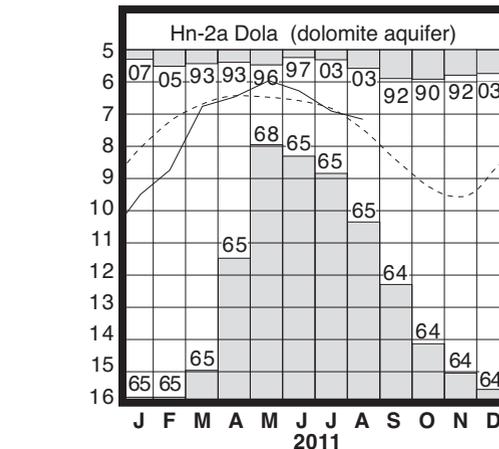
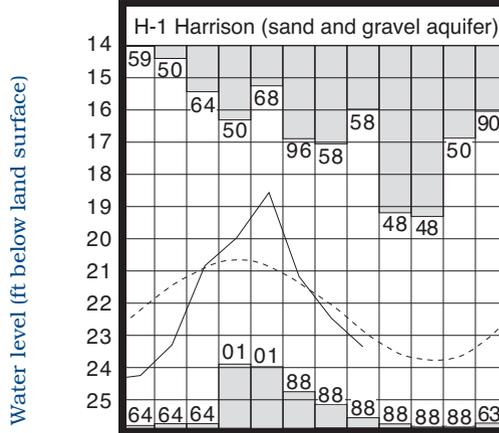
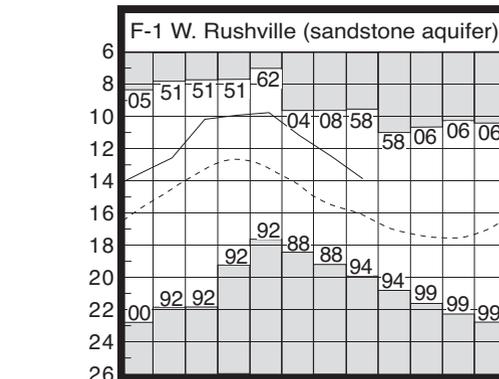
LAKE ERIE level declined during August. The mean level was 572.11 feet (IGLD-1985), 0.33 foot lower than last month's mean level and 0.39 foot above normal. This month's mean level is 0.62 foot above the August 2010 level and 2.91 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during August averaged 3.72 inches, 0.50 inch above normal. For the entire Great Lakes basin, August precipitation averaged 3.38 inches, 0.25 inch above normal. For calendar year 2011 through August the Lake Erie basin has averaged 32.14 inches of precipitation, 8.23 inches above normal, while the entire Great Lakes basin has averaged 24.61 inches, 3.41 inches above normal.

In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, Lake Erie should continue to decline seasonally to near-normal levels by late autumn. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from around 10 inches above to as much as 11 inches below 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	13.88	+2.16	-1.39	-0.24
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.04	-0.72	-0.15	+0.49
Fr-10	Columbus, Franklin Co.	Gravel	43.59	+0.21	-0.23	+1.05
H-1	Harrison, Hamilton Co.	Gravel	23.35	-0.48	-0.89	+0.22
Hn-2a	Dola, Hardin Co.	Dolomite	7.17	+0.32	-0.27	+0.63
Po-124	Freedom, Portage Co.	Sandstone	76.77	+1.19	-0.30	-0.03
Tu-1	Strasburg, Tuscarawas Co.	Gravel	14.24	-0.83	-0.79	+0.16

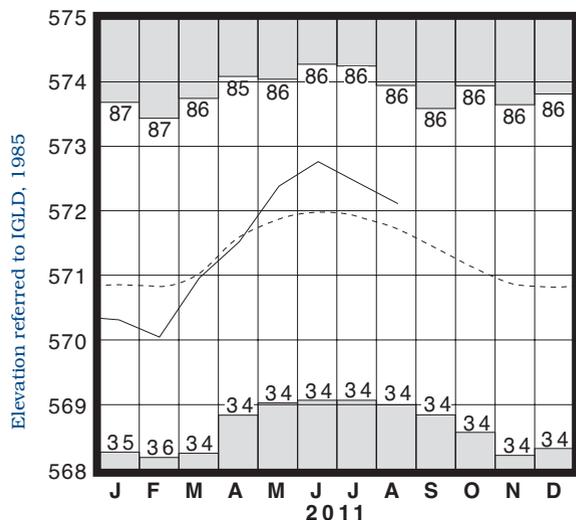
GROUND-WATER LEVELS



Base periods: F-1, 1947-2000 H-1, 1951-2000.

Hn-2a, 1955-2000

LAKE ERIE LEVELS



Base period: 1918-2000

Record high and low, year of occurrence

SUMMARY

Precipitation during August was above normal throughout much of Ohio, but below normal in the West Central and Southwest regions, and a few other scattered locations. Streamflow was generally above normal in northwestern, northeastern, central and south-central Ohio, and below normal elsewhere. Reservoir storage decreased but remained at above-normal levels. Ground water showed seasonal declines, but remained adequate statewide. Lake Erie level declined 0.33 foot and was 0.39 foot above the long-term August average.

NOTES AND COMMENTS

ODNR Director Accepts New Position

Ohio Department of Natural Resources (ODNR) Director David Mustine has accepted a position with JobsOhio as General Manager for Energy. JobsOhio is the state's new non-profit corporation created to support economic recovery and will help oversee efforts to maximize the benefit to Ohio from recent shale gas discoveries. Mr. Mustine has spent many years in the private energy sector, including 16 years at American Electric Power. He was also an investment manager for the Energy Division of Bechtel Investments, Inc. in Houston, TX, specializing in oil and gas joint ventures.

Governor Kasich has appointed Assistant Director Scott Zody to be the Interim Director of ODNR. Scott has spent more than half of his 20-year public service career with the department. Prior to being named Assistant Director in 2011, Scott served ODNR in a number of pivotal roles, including Deputy Director for Recreation and Resource Management, and as Legislative Liaison.

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.



An Equal Opportunity Employer—M/F/H



Ohio Department of Natural Resources

Division of Soil and Water Resources

2045 Morse Road

Columbus, Ohio 43229-6693

John Kasich
Governor

Scott Zody
Interim Director

Ted Lozier
Chief

Ted Lozier
Chief

Printed on recycled
paper containing 30%
post consumer waste.

