



MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2012

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

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Water Inventory Unit

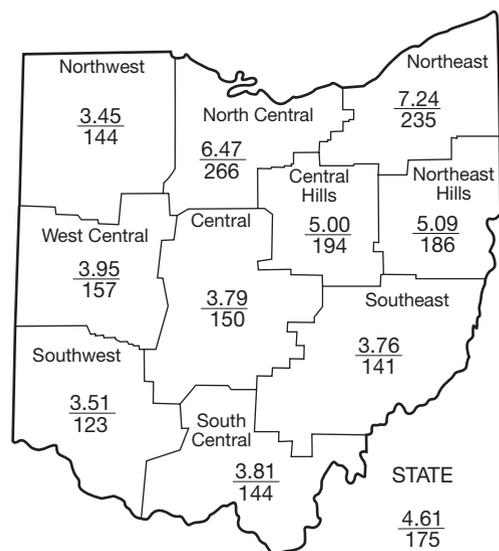
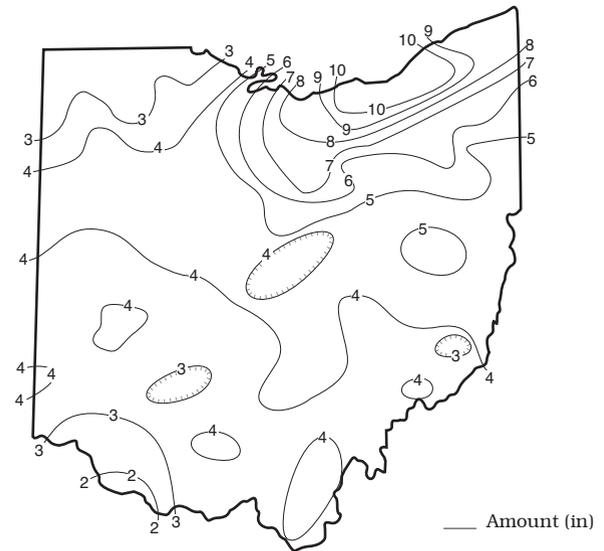
PRECIPITATION during October was above normal throughout most of the state, and in northeastern Ohio, noticeably above normal. Only a few areas, mainly in northwestern and southwestern Ohio, received below normal precipitation for the month. October is traditionally one of the driest months of the year. The state average was 4.61 inches, 1.97 inches above normal. This was the tenth wettest October during the past 130 years for the state as a whole. Regional averages ranged from 7.24 inches, 4.16 inches above normal, for the Northeast Region to 3.45 inches, 1.06 inches above normal, for the Northwest Region. This was the wettest October on record for the North Central Region and the second wettest for the Northeast Region, eighth wettest for the Central Hills Region and the ninth wettest for the Northeast Hills Region. Cleveland Hopkins International Airport (Cuyahoga County) reported the greatest amount of October precipitation, 10.40 inches. Elyria (Cuyahoga County) and Chardon (Geauga County) also reported more than 10 inches of precipitation during October. Captain Anthony Meldahl Locks and Dam (Clermont County) reported the least amount, 1.57 inches.

The month started with several days of precipitation during the first week, with precipitation totals during this period ranging from about 0.50 inch in southeastern Ohio to 1-2 inches across most of the remainder of the state. Scattered showers were common throughout Ohio during October 13-19. Most of the state received between 0.50-1.0 inch of rain during this period, but again areas in southeastern Ohio received less. The wettest period was during the last week of the month across the state. Rain began during October 26-27 as a cold front passed through the state. This was followed closely by the remnants of Hurricane Sandy, which moved into the state on October 28 and impacted Ohio for the next several days. Rain was widespread, but heaviest in the eastern half of the state and lightest in northwestern Ohio. This series of storms produced around 0.50 inch of precipitation in extreme northwestern Ohio, 1-2 inches across the remainder of western Ohio, 2-3 inches in eastern Ohio and as much as 7 inches in areas of northeastern Ohio. High winds were also associated with the remnants of Hurricane Sandy, causing significant damage and power outages in northeastern Ohio. Some areas of Ohio received their first snowfall of the season on October 30, but accumulations were light.

Precipitation during the 2012 calendar year is below normal throughout most of the state, but above normal in the North Central and Northeast regions. The state average is 32.06 inches, 0.99 inch below normal. Regional averages range from 35.96 inches, 2.92 inches above normal,

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PRECIPITATION OCTOBER



Average (in)
Percent of normal

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	+1.06	+3.53	-1.33	+2.14	+14.39	-0.6
North Central	+4.04	+7.23	+4.14	+8.10	+23.94	+3.5
Northeast	+4.16	+6.14	+3.70	+5.78	+25.05	+3.8
West Central	+1.44	+3.92	+0.69	+2.62	+16.14	+0.5
Central	+1.27	+1.94	-1.30	+2.71	+15.39	+0.1
Central Hills	+2.42	+3.70	+0.83	+3.38	+15.03	+2.0
Northeast Hills	+2.35	+2.58	-0.37	+0.14	+13.31	-0.6
Southwest	+0.65	+0.63	-2.53	+1.65	+15.11	-0.7
South Central	+1.16	+0.78	+0.41	+0.34	+16.17	-0.6
Southeast	+1.10	+2.27	+0.21	+1.27	+14.76	+0.7
State	+1.97	+3.27	+0.43	+2.79	+16.90	

*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	1,264	472	128	64	95
Great Miami River at Hamilton	3,630	1,367	133	64	53	126
Huron River at Milan	371	851	1,579	260	94	141
Killbuck Creek at Killbuck	464	188	133	58	45	103
Little Beaver Creek near East Liverpool	496	193	156	49	34	76
Maumee River at Waterville	6,330	1,213	121	41	24	108
Muskingum River at McConnelsville	7,422	2,263	98	44	41	89
Scioto River near Prospect	567	639	1,831	232	103	150
Scioto River at Higby	5,131	2,135	143	71	58	115
Stillwater River at Pleasant Hill	503	250	306	90	42	98

STREAMFLOW during October was above normal throughout most of the state. Flows were high enough to be considered excessive in some basins, especially in the northeastern quarter of the state. Flows during October increased seasonally from the flows recorded during September. Preliminary data indicates that flows in some basins in north-central and northeastern Ohio were at record or near-record high October flows, including the greatest October flow for the Huron River at Milan.

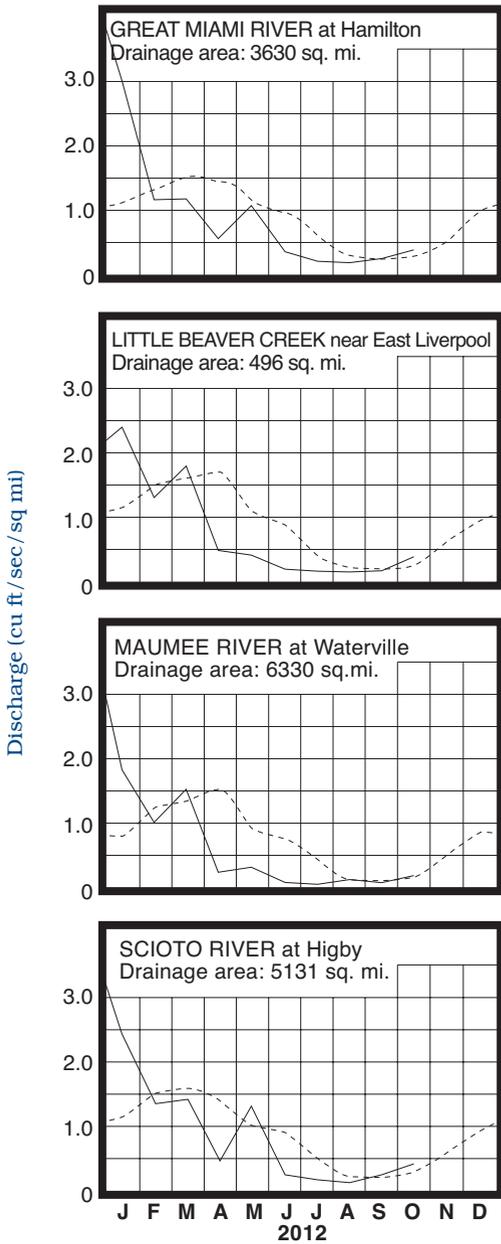
Flows at the beginning of the month were generally below normal across northern Ohio and above normal in southern Ohio. Drainage basins in western Ohio had their greatest flows for the month near the end of the first week. Although lowest flows for the month varied across the state, they generally occurred

during October 14-19 in western, central and southeastern Ohio and during October 22-24 across northern and south-central Ohio. Flows increased during the last week of the month in response to widespread precipitation during this period. Basins in the eastern two-thirds of the state had their greatest flows for October near or at the end of the month. Streamflow at the end of October was above normal throughout Ohio and high enough to be considered excessive in many basins in the eastern half of the state.

RESERVOIR STORAGE for water supply during October increased in both the Mahoning and Scioto river basins. Storage improved to above normal in both basins.

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 65 percent of rated capacity for water supply compared with 57 percent for last month and 74 percent for October 2011. Month-end storage in the Scioto basin index reservoirs was 76 percent of rated capacity for water supply compared with 74 percent for last month and 90 percent for October 2011. Surface water supplies are favorable throughout the state as the 2013 water year recharge season begins.

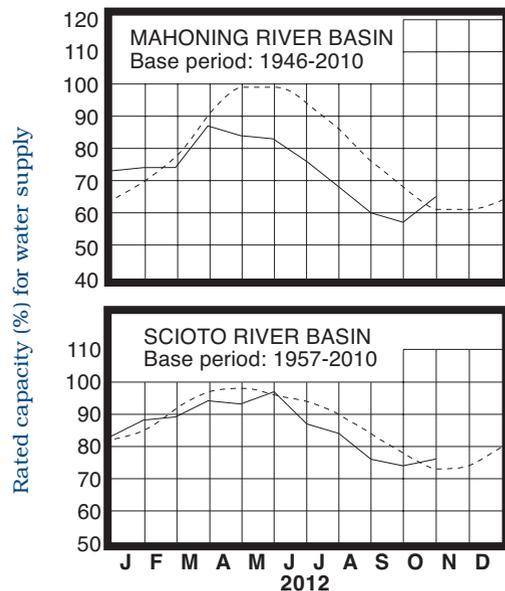
MEAN STREAM DISCHARGE



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

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	17.45	-0.47	-0.36	-2.45
Fa-1	Jasper Mill, Fayette Co.	Limestone	13.99	-4.65	-1.57	-4.41
Fr-10	Columbus, Franklin Co.	Gravel	45.02	-0.26	+0.16	-1.23
H-1	Harrison, Hamilton Co.	Gravel	24.35	-0.78	-0.04	-0.61
Hn-2a	Dola, Hardin Co.	Dolomite	9.73	-0.48	+0.50	-2.81
Po-124	Freedom, Portage Co.	Sandstone	77.25	-0.20	-0.18	-0.48
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.74	-1.61	+0.08	-1.01

GROUND WATER levels during October showed mixed responses across the state, staying rather stable or rising slightly in some areas, but declining in other areas. October is usually a month when ground water levels decline throughout the state.

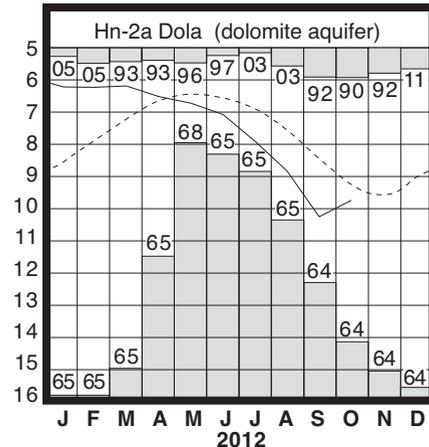
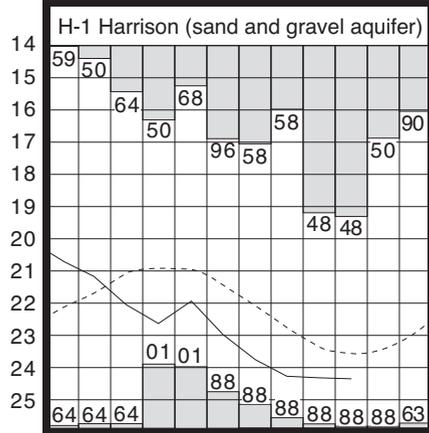
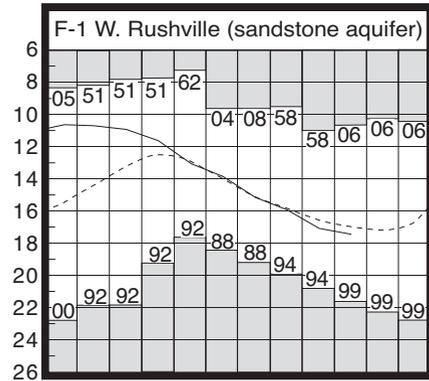
Ground water supplies remain adequate throughout Ohio despite the fact that ground water levels continue to be below normal throughout most of the state. Ground water levels range from about 0.25 foot to more than 4.5 feet below normal across Ohio. Current levels are lower than they were a year ago statewide from 0.5 foot to nearly 4.5 feet. The above normal precipitation during October improved soil moisture conditions across most of the state and bodes well for adequate improvement during the upcoming recharge season. However, near-normal climatic conditions during the next several months will be necessary for this positive trend to continue. The Ohio Agricultural Statistics Service reports that soil moisture near the end of October was rated as being short or very short in 10 percent of the state, adequate in 48 percent of the state and surplus in 42 percent of the state. Water supply managers with ground water sources should monitor their respective situations closely throughout the recharge season.

LAKE ERIE level declined during October. The mean level was 570.31 feet (IGLD-1985), 0.39 foot lower than last month's mean level and 0.75 foot below normal. This month's mean level is 1.44 feet lower than the October 2011 level and 1.11 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 4.42 inches, 1.65 inches above normal. For the entire Great Lakes basin, October precipitation averaged 4.10 inches, 1.22 inches above normal. For calendar year 2012 through October, the Lake Erie basin has averaged 27.60 inches, 2.28 inches below normal, while the entire Great Lakes basin has averaged 26.02 inches, 1.47 inches below normal.

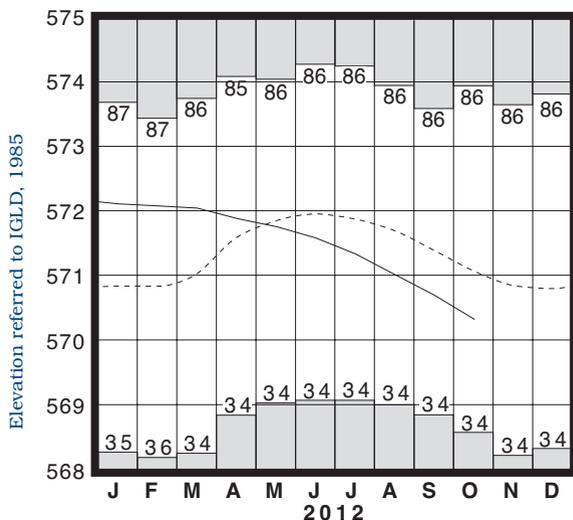
In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should remain below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from about 2 inches above normal to as much as 14 inches below the normal seasonal average.

GROUND-WATER LEVELS



Base periods: F-1, 1947-2010; H-1 1951-2010.
Hn-2a, 1955-2010

LAKE ERIE LEVELS



Base period: 1918-2010

■ Record high and low, year of occurrence

Normal - - - - Current ———

(Precipitation continued from front)

for the Northeast Region to 26.99 inches, 2.57 inches below normal, for the Northwest Region.

The 2013 water year (October 1, 2012 to September 30, 2013) is off to a good start as far as precipitation is concerned with October 2012 being the tenth wettest October on record. Near-normal precipitation during the next several months should provide adequate recharge for water supplies throughout Ohio.

SUMMARY

Precipitation during October was above normal throughout most of Ohio and noticeably above normal in northeastern Ohio. Streamflow was above normal statewide and high enough to be considered excessive in some areas of the state. Reservoir storage increased and improved to above normal. Ground water showed mixed responses and remained below normal throughout most of Ohio. Lake Erie level declined 0.39 foot and was 0.75 foot below the long-term October average.

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://www.dnr.state.oh.us/tabid/21817/Default.aspx>. Comments and suggestions regarding this report are always welcome.

Lake Erie Protection Fund Proposals Sought

The Ohio Lake Erie Commission is soliciting proposals for the Lake Erie Protection Fund to inventory water conservation measures by industry sector. Funding will be considered for proposed projects that gather, organize, and/or catalogue information on existing best management practices for water use sectors. Funding will also be considered for identification of new best management practices within each water use sector. Use sectors shall include but not be limited to water used for industry, water supply, mineral extraction or processing, agriculture (including plant nurseries), irrigation and electrical power generation purposes.

One grant up to \$30,000 will be available. Proposals are due February 1, 2013. Please visit the Commission's website at <http://lakeerie.ohio.gov/LakeErieProtectionFund.aspx> for application materials and to obtain more information about the Lake Erie Protection Fund. If you have any further questions, please contact Rian Sallee, the Commission's Grants Coordinator, at 419-621-2040.

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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