



# MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2008

<http://www.dnr.state.oh.us/tabid/4191/Default.aspx>

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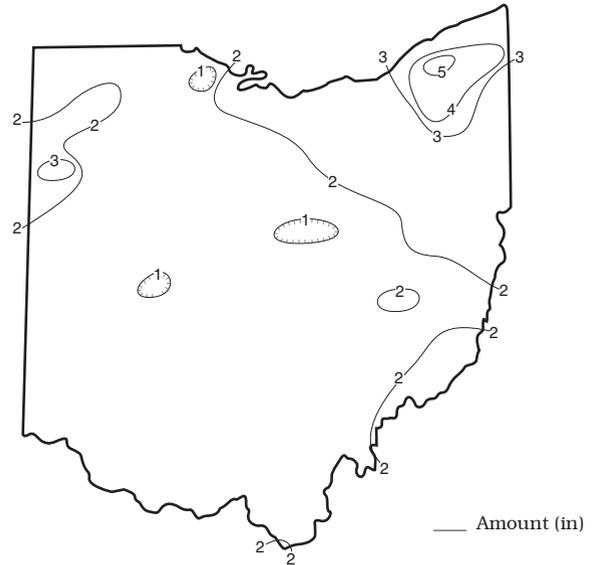
**PRECIPITATION** during October was below normal throughout most of the state with only a few locations, mainly in northeastern Ohio, receiving above normal amounts. The state average was 1.84 inches, 0.63 inch below normal. Regional averages ranged from 2.90 inches, 0.08 inch below normal, for the Northeast Region to 1.42 inches, 0.91 inch below normal, for the West Central Region. Chardon (Geauga County) reported the greatest amount of October precipitation, 5.93 inches. Greer (Knox County) reported the least amount, 0.65 inch.

A weather system at the beginning of the month brought 0.25-0.50 inch of rain to northeastern Ohio. For the remainder of the state, most of the October precipitation fell during 2 periods. The first was on October 8 when widespread precipitation was greatest across the southeastern half of the state where around 1 inch of rain was reported. Precipitation amounts decreased to the north and west to about 0.25 inch in northwestern Ohio. The second period was during October 24-25 when much of the state received between 0.50 and 1.0 inch of rain, but a large area in northern Ohio received less than 0.25 inch. The only other notable precipitation occurred in northeastern Ohio during October 27-29 when showers and a few snow showers fell across the region. Most of the area reported less than 0.25 inch of precipitation, but nearly 1 inch fell in the snowbelt counties, including 1-3 inches of snow.

Precipitation for the 2008 calendar year is above normal statewide. The average for the state is 37.30 inches, 5.02 inches above normal. Regional averages range from 40.81 inches, 8.55 inches above normal, for the Northeast Region to 34.76 inches, 5.70 inches above normal, for the Northwest Region.

The 2009 water year (October 1, 2008-September 30, 2009) is not off to a particularly good start as far as precipitation is concerned. Near-normal precipitation across the state during the next several months would be favorable for both surface and ground water supplies.

## PRECIPITATION OCTOBER

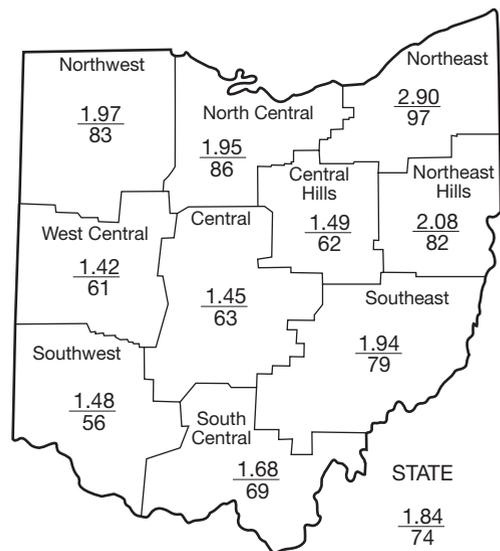


## PRECIPITATION

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	-0.40	-1.42	+0.55	+8.20	+14.51	+0.6
North Central	-0.32	-1.21	+1.63	+9.64	+16.67	+1.4
Northeast	-0.08	-0.67	+2.60	+11.68	+14.03	+3.2
West Central	-0.91	-3.58	+0.46	+8.21	+13.52	-1.8
Central	-0.84	-2.51	+0.70	+6.22	+9.18	-1.6
Central Hills	-0.90	-2.83	-1.46	+3.89	+7.34	-1.4
Northeast Hills	-0.45	-2.14	-1.10	+4.96	+6.34	-1.3
Southwest	-1.14	-4.25	-0.86	+5.81	+4.19	-2.0
South Central	-0.76	-2.99	0.00	+6.77	-1.64	-1.8
Southeast	-0.53	-3.39	+0.74	+7.53	+2.70	-1.6
State	-0.63	-2.50	+0.32	+7.29	+8.67	

\*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	343	143	54	87	140
Great Miami River at Hamilton	3,630	710	74	67	149	172
Huron River at Milan	371	32	74	58	127	203
Killbuck Creek at Killbuck	464	94	70	48	78	129
Little Beaver Creek near East Liverpool	496	88	56	47	57	122
Maumee River at Waterville	6,330	314	41	24	103	159
Muskingum River at McConnelsville	7,422	1,159	46	89	166	122
Scioto River near Prospect	567	18	66	20	140	188
Scioto River at Higby	5,131	990	78	45	118	153
Stillwater River at Pleasant Hill	503	55	88	37	157	180

**STREAMFLOW** during October was below normal across most of the state with a few exceptions in extreme northeastern Ohio where some flows were above normal. Flows were low enough to be considered deficient in some basins in northwestern and southeastern Ohio. Flows during October were less than those observed during September throughout most of the state.

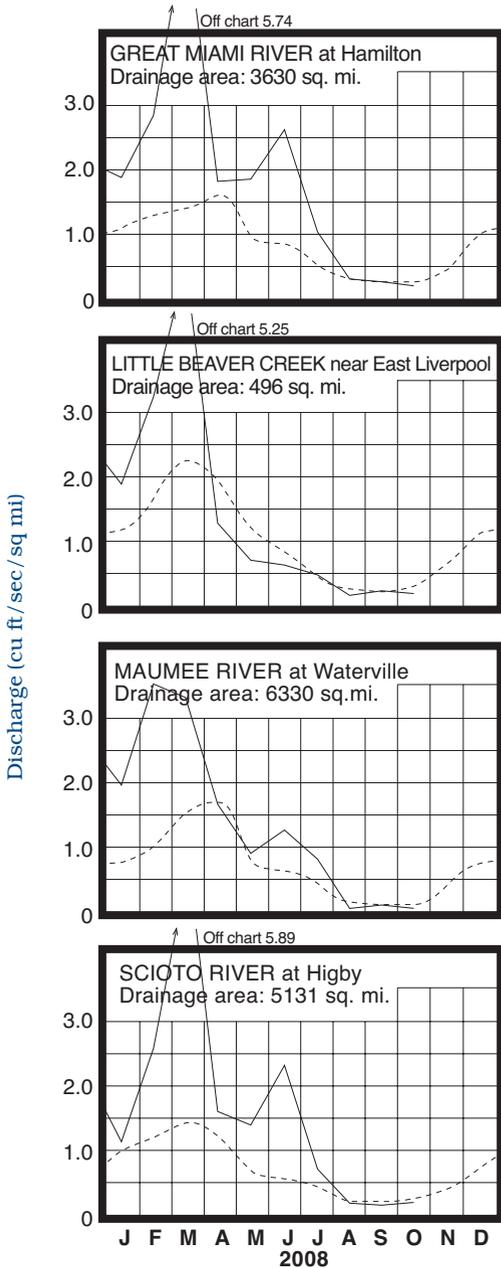
Streamflow at the beginning of October was below normal statewide. Flows declined during the first week of the month, reaching monthly low flows across the central one-third of Ohio on October 7. Flows increased statewide following the October 8 precipitation. Flows then declined during the next week or so with lowest flows for the month occurring around October 14-15 across northeastern and south-central

Ohio, and on October 23 across northwestern and southeastern Ohio. Following widespread precipitation on October 24-25, greatest monthly flows were reached during October 25-26 throughout most of the western two-thirds of the state. Greatest flows in eastern Ohio occurred near the end of the month. Streamflow at the end of October was below normal across most of the state, but was above normal in some basins in northeastern and south-central Ohio.

**RESERVOIR STORAGE** during October decreased in both the Mahoning and Scioto river basins. At the end of October, storage remained above normal in the Mahoning River basin, but fell to below normal in the Scioto River basin.

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 78 percent of rated capacity for water supply compared with 83 percent for last month and 72 percent for October 2007. Month-end storage in the Scioto basin index reservoirs was 62 percent of rated capacity for water supply compared with 78 percent for last month and 70 percent for October 2007. Surface water supplies are adequate at the start of the 2009 water year.

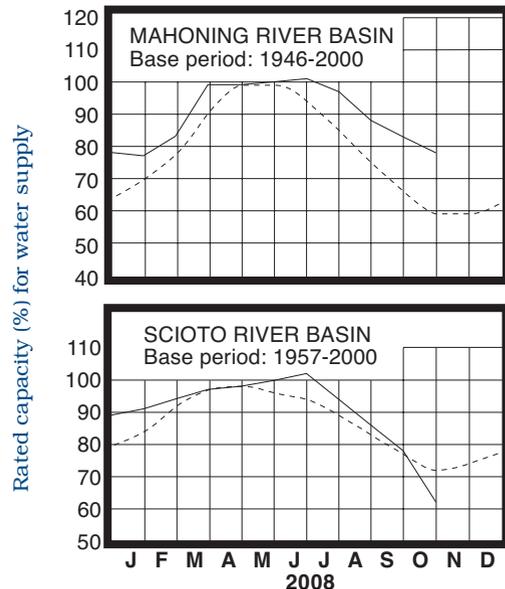
### MEAN STREAM DISCHARGE



Base period for all streams: 1971-2000

Normal - - - - Current ———

### RESERVOIR STORAGE FOR WATER SUPPLY



## GROUND-WATER LEVELS

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

**GROUND WATER** levels declined during October across the state. Net declines from last month's levels were greater than usually observed, a result of the below normal precipitation during the past 3 months. Levels in most aquifers declined steadily throughout October with the exception of slight increases noted during the last week of the month in some shallower aquifers.

Ground water supplies are adequate throughout Ohio. However, several months with below normal precipitation has resulted in ground water levels falling below normal throughout most of the state with the exception of some consolidated aquifers in eastern Ohio that remain above normal. Current levels are higher than they were at this time last year across most of the state, but are lower in some northern Ohio aquifers.

The new 2009 water year is off to a slow start in terms of precipitation. The Ohio Agricultural Statistics Service reports that at the end of October, soil moisture was rated as being short or very short in 57 percent of the state, adequate in 42 percent of the state and surplus in 1 percent of the state. However, the recharge season is just beginning and with a return to near-normal precipitation over the next several months there should be ample opportunity to adequately replenish the state's ground water supplies.

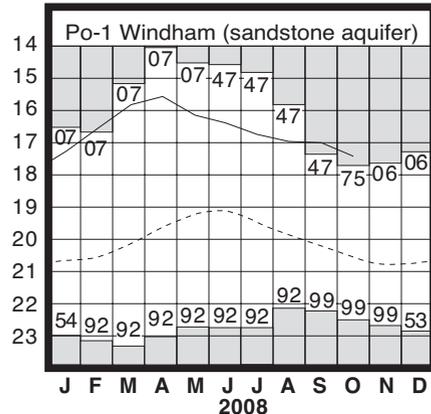
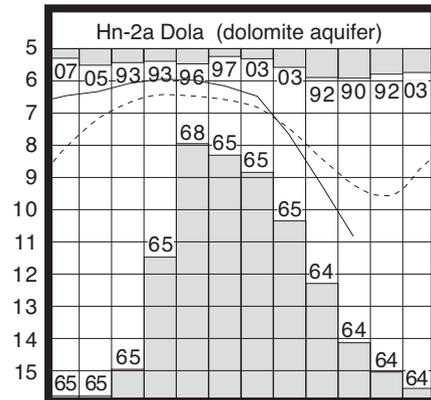
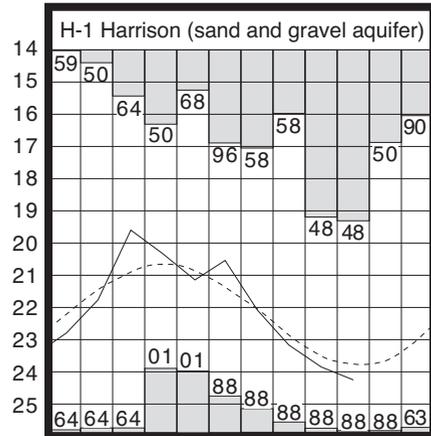
**LAKE ERIE** level declined during October. The mean level was 570.90 feet (IGLD-1985), 0.39 foot lower than last month's mean level and 0.20 foot below normal. This month's mean level is 0.20 foot higher than the October 2007 level and 1.70 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 2.58 inches, 0.16 inch below normal. For the entire Great Lakes basin, October precipitation averaged 2.25 inches, 0.58 inch below normal. For calendar year 2008 through October, the Lake Erie basin has averaged 33.30 inches, 3.71 inches above normal, while the entire Great Lakes basin has averaged 30.30 inches, 2.96 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 remain below normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the levels of Lake Erie ranging from about 6 inches above normal to as much as 15 inches below the normal seasonal levels.

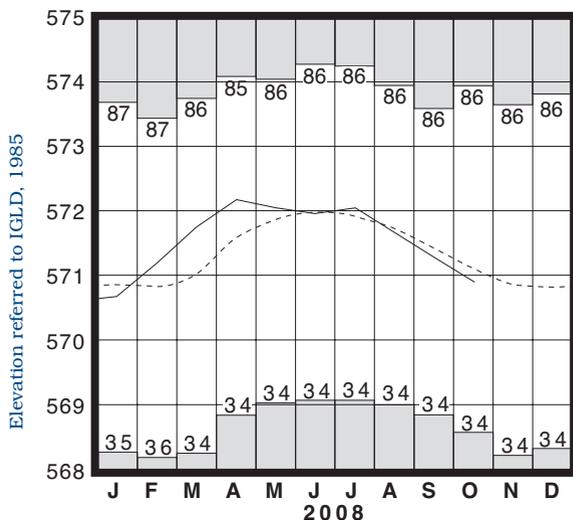
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	15.38	+2.06	-1.26	+2.46
Fa-1	Jasper Mill, Fayette Co.	Limestone	10.52	-1.44	-0.83	+2.17
Fr-10	Columbus, Franklin Co.	Gravel	45.59	-1.36	-0.45	+0.37
H-1	Harrison, Hamilton Co.	Gravel	24.25	-0.49	-0.41	+0.62
Hn-2a	Dola, Hardin Co.	Dolomite	10.82	-1.59	-1.61	-3.10
Po-1	Windham, Portage Co.	Sandstone	17.41	+3.14	-0.41	+1.17
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.35	-1.39	-0.40	-0.07

## GROUND-WATER LEVELS



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000.  
Po-1, 1947-2000

## LAKE ERIE LEVELS



Base period: 1918-2000

■ Record high and low, year of occurrence

Normal - - - - Current ———

## SUMMARY

Precipitation during October was below normal throughout most of the state with only a few locations, mainly in northeastern Ohio, receiving above normal precipitation. Streamflow was below normal across most of the state, but above normal in some northeast Ohio basins. Reservoir storage decreased in both the Mahoning and Scioto river basins. Storage remained above normal in the Mahoning River basin, but fell to below normal in the Scioto River basin. Ground water levels declined seasonally and are below normal across most of the state. Lake Erie level declined 0.39 foot and was 0.20 foot below the long-term October average.

## NOTES AND COMMENTS

### Floodplain Program Manager Retires

Cynthia J. Crecelius, Program Manager of the Floodplain Management Program of the ODNR, Division of Water, retired on September 30, 2008 after 30 years with the Division. Cindy began her career at ODNR as a college intern in 1978. In October 1984, she became a planner in the Floodplain Management Program. In 1998, she was promoted to Program Manager, which also serves as the State Coordinator of the National Flood Insurance Program. Throughout her career, Cindy maintained the focus of the Floodplain Management Programs mission: reduce flood risk and protect the floodplain resources. She continuously worked to strengthen flood damage reduction legislation, promote higher standards and resource protection. Cindy continuously talked of three main goals the Floodplain Management Program strives to reach: effective customer service, effective education and effective partnerships. Under her leadership, these goals were effectively reached. In 2002, the Floodplain Management Program was awarded the Platinum Level-Tom Lee State Award for Excellence by the Association of State Floodplain Managers in recognition of outstanding floodplain management programs or activities at the state level. Cindy also received many individual honors and marks of distinction throughout her career at ODNR as well. Cindy noted that the effectiveness of the program is due to the many partners, resources and creative energy behind their products and services. Throughout her career, Cindy has helped build and maintain these partnerships. Because her vision for the Ohio Floodplain Management Program was long-term, these partnerships will continue to grow. The Division of Water staff wishes Cindy the best in her retirement and thank her for the many years of dedicated service to the Division and the State of Ohio.

## ACKNOWLEDGMENTS

This report has been compiled from Division of Water 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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