



MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2004

<http://www.dnr.state.oh.us/water/pubs/newsltrs/mwirmain.htm>

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Hydrologists
Water Inventory Unit

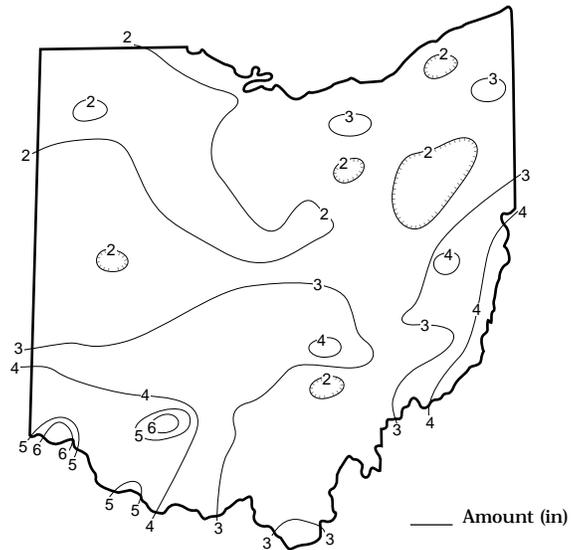
PRECIPITATION during October was generally above normal in the southern half of the state and below normal in the northern half. The average for the state as a whole was 2.69 inches, 0.22 inch above normal. Regional averages ranged from 3.83 inches, 1.21 inches above normal, for the Southwest Region to 1.98 inches, 0.39 inch below normal, for the Northwest Region. Hillsboro (Highland County) reported the greatest amount of October precipitation, 6.39 inches. Fremont (Sandusky County) reported the least amount, 1.35 inches.

The first 12 days of the month were rather dry. Some light and spotty showers fell on October 2 with less than 0.10 inch of rain falling across most of the state. Several days of precipitation occurred during the last 19 days of October. The first significant precipitation for the month occurred as the remnants from Tropical Storm Matthew moved through the state on October 13 with generally 0.25-1.0 inch of rain reported. Two days later showers and thunderstorms produced 0.25-0.50 inch of precipitation across most of the state with a few isolated locations receiving as much as 1 inch of rain. Showers and thunderstorms occurred on October 18 and were most numerous in the southern half of the state. Precipitation amounts from these storms ranged from 1-3 inches in southern Ohio to 0.50-1.0 inch in northern Ohio. On and off showers during October 29-30 were most numerous across the northern half of the state with precipitation amounts of 0.50-1.0 inch common across northern Ohio; less than 0.25 inch of rain was reported in southern Ohio.

Precipitation for the 2004 calendar year is above normal statewide. The average for the state as a whole is 39.42 inches, 7.14 inches above normal. Regional averages range from 49.28 inches, 16.56 inches above normal, for the Northeast Hills Region to 29.59 inches, 0.53 inch above normal, for the Northwest Region.

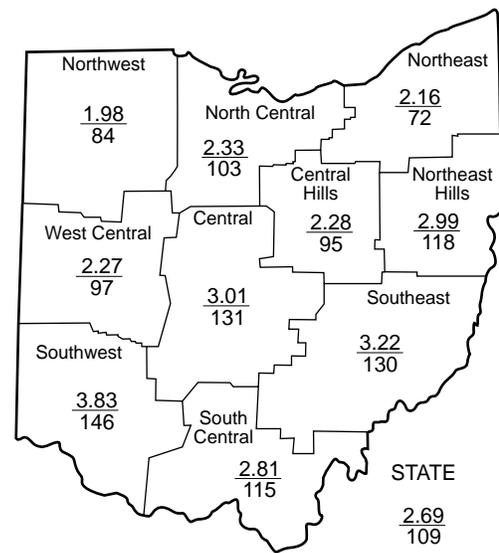
The 2005 water year (October 1, 2004 to September 30, 2005) is off to a good start across most of the state as far as precipitation is concerned. A continuation of near-normal precipitation during the next few months should be beneficial to the state's surface and ground water supplies.

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	-0.39	-0.14	+5.25	+0.40	+7.47	+2.4
North Central	+0.06	-0.08	+6.07	+5.93	+12.01	+2.8
Northeast	-0.82	+1.09	+5.63	+6.84	+17.23	+4.2
West Central	-0.06	-1.46	+2.41	+1.97	+14.68	+2.1
Central	+0.72	+1.31	+6.90	+9.27	+15.75	+3.3
Central Hills	-0.11	+2.75	+8.96	+9.99	+15.54	+4.8
Northeast Hills	+0.46	+8.33	+14.27	+16.53	+25.25	+6.5
Southwest	+1.21	-0.91	+1.80	+1.46	+7.51	+1.4
South Central	+0.37	+4.51	+5.67	+8.91	+17.15	+2.8
Southeast	+0.75	+8.82	+12.80	+16.74	+23.87	+5.1
State	+0.22	+2.42	+6.97	+7.80	+15.57	



*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

River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	This Month		
				% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	133	55	149	146	130
Great Miami River at Hamilton	3,630	798	83	76	128	126
Huron River at Milan	371	80	188	145	211	169
Killbuck Creek at Killbuck	464	145	108	132	175	140
Little Beaver Creek near East Liverpool	496	421	266	611	302	183
Maumee River at Waterville	6,330	870	112	129	172	106
Muskingum River at McConnsville	7,422	6,569	259	611	383	150
Scioto River near Prospect	567	35	129	84	236	161
Scioto River at Higby	5,131	2,885	228	136	166	146
Stillwater River at Pleasant Hill	503	51	81	41	105	104

STREAMFLOW during October was above normal across much of the state, but below normal in western and extreme northeastern Ohio basins. Flows were high enough to be considered excessive in eastern Ohio.

Flows at the beginning of the month were above normal across much of the state. Greatest flows for the month in southeastern Ohio occurred at the beginning of October. Flows decreased statewide during the first 10-12 days of the month as dry weather prevailed. As a result, low flows for the month across most of the state occurred between October 10 and 12. Flows increased statewide following precipitation during October 13-15. Greatest flows in southern Ohio and some northern Ohio basins followed the widespread precipitation that fell on October 18. Greatest flows across the remainder of the state, most notably in the northern half of Ohio, occurred following the

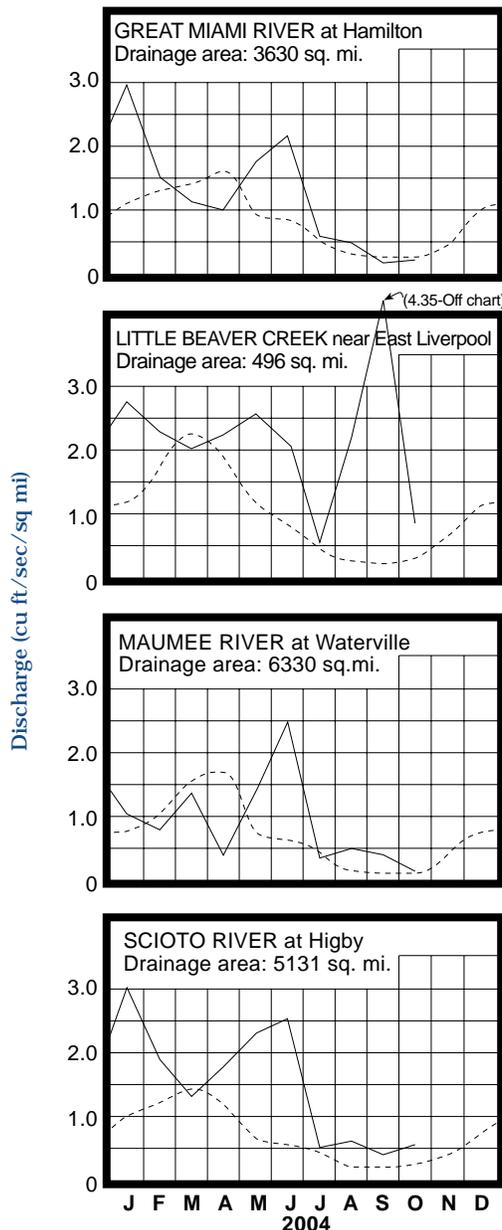
precipitation of October 23. Flows at the end of October were above normal throughout most of the state.

RESERVOIR STORAGE during October decreased in both the Mahoning and Scioto river basins. Storage remained above normal in both basins.

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 72 percent of rated capacity for water supply compared with 86 percent for last month and 82 percent for October 2003. Month-end storage in the Scioto basin index reservoirs was 80 percent of rated capacity for water supply compared with 92 percent for last month and 80 percent for October 2003. Surface water supplies are favorable throughout the state as the 2005 water year begins.

GROUND WATER levels during October generally rose in southern Ohio and declined in northern Ohio. In either case, the net changes from the September levels were more favorable than usually observed. Levels in most aquifers in southern Ohio declined or remained rather stable during the first half of the month and then rose during the second half. Aquifer levels in northern Ohio generally declined throughout the month with some temporary improvement noted following precipitation events.

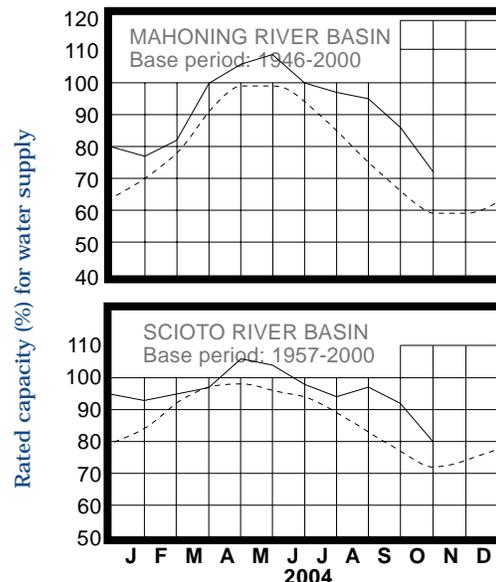
MEAN STREAM DISCHARGE



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

The 2005 water year is off to a good start as far as ground water supplies are concerned. Widespread precipitation during the second half of the month had a positive impact on ground water levels during October and may have brought an early start to the recharge season in many areas of the state. Ground water levels remain above normal across much of the state, but are generally at below normal levels in unconsolidated aquifers in southwestern and central Ohio. Near-normal precipitation and other favorable climatic conditions during the next several months should increase the prospects for a favorable recharge season. The precipitation during the second half of October has also elevated soil moisture across most of the state. The Ohio Agricultural Statistics Service reports that near the end of October, soil moisture was rated as being short or very short in 5 percent of state, adequate in 84 percent of the state and surplus in 11 percent of the state. Current soil moisture conditions bode well for continued improvement in ground water supplies.

LAKE ERIE level declined seasonally during October. The mean level was 571.10 feet (IGLD-1985), which is normal and 0.55 foot lower than last month's mean level. This month's mean level is 0.46 foot higher than the October 2003 level and 1.90 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 2.39 inches which is 0.35 inch below normal. For the entire Great Lakes basin, October precipitation averaged 3.44 inches which is 0.61 inch above normal. For calendar year 2004 through October, the Lake Erie basin has averaged 29.53 inches of precipitation, 0.07 inch above normal, while the entire Great Lakes basin has averaged 29.19 inches, 1.89 inches above normal.

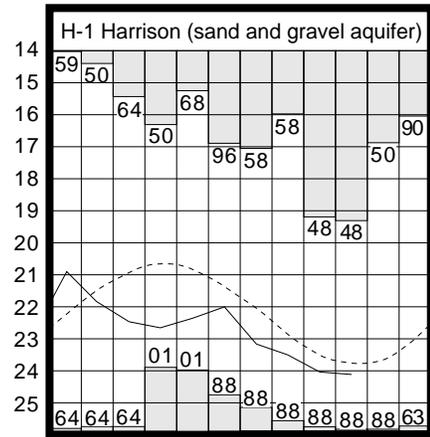
In addition, the USACE reports that based on the current condition of the Great Lakes basin and anticipated weather conditions, the level of Lake Erie should continue to range near normal for the foreseeable future. Deviations from the anticipated weather patterns could result in the level of Lake Erie ranging from as high as 9 inches above normal to as much as 13 inches below the normal seasonal average.

SUMMARY

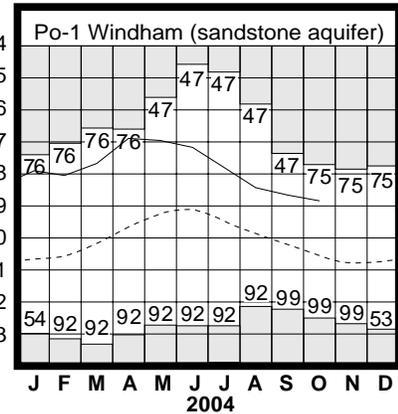
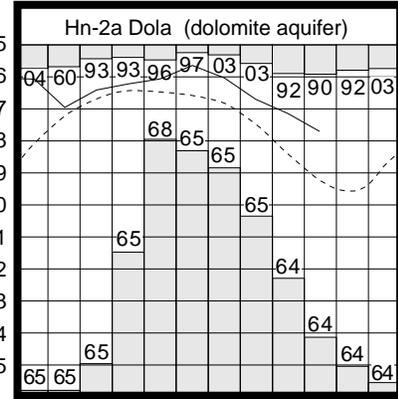
Precipitation during October was generally above normal in the southern half of Ohio and below normal in the northern half. Streamflow was above normal across most of the state, but below normal in western and extreme northeastern Ohio basins. Reservoir storage decreased in the Mahoning and Scioto river basins but remained above normal in both basins. Ground water levels generally rose in southern Ohio and declined in northern Ohio. Lake Erie level declined 0.55 foot.

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	13.62	+3.82	+0.35	+0.39
Fa-1	Jasper Mill, Fayette Co.	Limestone	9.01	+0.07	+0.15	-0.90
Fr-10	Columbus, Franklin Co.	Gravel	44.98	-0.75	+0.13	+0.80
H-1	Harrison, Hamilton Co.	Gravel	24.06	-0.30	-0.03	-0.43
Hn-2a	Dola, Hardin Co.	Dolomite	7.70	+1.53	-0.57	-1.21
Po-1	Windham, Portage Co.	Sandstone	18.84	+1.71	-0.18	-0.46
Tu-1	Strasburg, Tuscarawas Co.	Gravel	12.78	+1.18	-1.12	-1.38

GROUND-WATER LEVELS

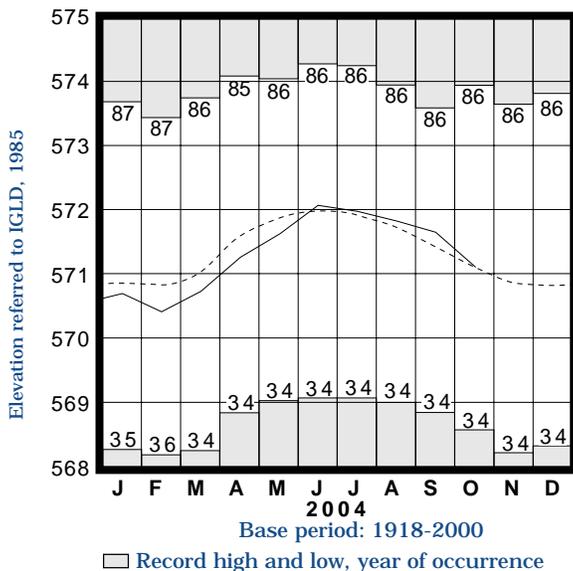


Water level (ft below land surface)



Base periods: H-1, 1951-2000. Hn-2a, 1955-2000.
Po-1, 1947-2000 □ Record high and low, year of occurrence

LAKE ERIE LEVELS



Normal - - - - Current ———

NOTES AND COMMENTS

Much Of Eastern Ohio Receives Presidential Disaster Declaration

Governor Bob Taft announced that President George W. Bush approved federal disaster assistance for residents and business owners in 21 eastern and southeastern Ohio counties. The Presidential Disaster Declaration covers damages sustained from storms and floods on August 27 in Columbiana County and during the month of September across eastern and southeastern Ohio. The counties included in the declaration are: Athens, Belmont, Carroll, Columbiana, Gallia, Guernsey, Harrison, Jefferson, Lawrence, Mahoning, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Stark, Trumbull, Tuscarawas, Vinton and Washington. In addition, Governor Taft announced that he will establish a Long-Term Recovery Committee designed to help these counties rebound from the impacts of this disaster. Federal disaster assistance programs administered through the Federal Emergency Management Agency (FEMA) provide partial remedies and short-term solutions for disaster-related losses. However, with the large number of homes, businesses and infrastructure damaged, recovery from this disaster will be long-term. The Long-Term Recovery Committee will help identify solutions to the long-term problems many of these counties are going to experience. This committee will work with local governments, businesses and individuals affected by the disaster and help meet any unfulfilled needs.

Division of Water Structure Team Receives Recognition

The Ohio Department of Natural Resources (ODNR), Division of Water Floodplain Structure Team, was recently selected as the Governor's Statewide Employee/Team of the Month. In addition, this team was also awarded the ODNR Awards Celebrating Excellence (A.C.E.) team award. The team consisted primarily of Floodplain staff but included other Division of Water, Ohio Emergency Management Agency and FEMA staff. The team was recognized for their commitment to excellence and positive attitude in performing their job responsibilities. The objective of the team was to prepare a statewide inventory identifying structures located in or near flood hazard areas. It was designed to apply the ODNR, Division of Water's floodplain management expertise, geographic information technology and digital flood hazard information to determine a baseline number of structures at risk from flooding. The baseline of statewide flood-risk structures is a link to local mitigation planning and allows the state to make a comprehensive assessment of flood risk related to structures. Flooding is the major natural hazard impacting Ohio and hazard mitigation planning provides an opportunity to reduce disaster losses. Identifying the potential for damage to people, buildings and infrastructure is a fundamental step in the mitigation planning process. Congratulations go out to team leader Cindy Creclius and the other members of the Floodplain Structure Team for this much-deserved recognition.

Lowhead Dam Removal Information

The ODNR, Division of Water, in cooperation with several ODNR divisions and other state agencies, is compiling information on lowhead dam removal. The information is available on the Division of Water's Dam Safety web page at: <http://www.dnr.state.oh.us/water/dsafety/>. This information is designed to assist the decision-making process of individuals, conservation groups, and local governmental entities considering a dam removal project. Some of the information included on the web page includes the definition of a lowhead dam, a map of lowhead dam locations in Ohio, case studies of removal projects in Ohio, federal and state agencies actively involved in lowhead dam removal and potential funding sources for lowhead dam removal projects. For more information, please contact Blaine Gerdes at (614) 265-6734.

50-Year Anniversary Highlights

Notable September and October Events From The Past 50 Years

September 13-14, 1979: Heavy rains from the remnants of Hurricane Frederic moved into the state from the southwest late on September 13 and continued on the 14th. Greatest amounts of rain fell within a wide band from Cincinnati through Columbus to Youngstown where 4-7 inches were reported. Major flooding occurred within this band of heaviest rains.

October 1963: Near-record or record-dry conditions prevailed statewide. The state average of 0.25 inch still ranks as the driest month of record for the state as a whole. Many rain gages, especially in western Ohio, received no measurable rain for the month. The state was already in the midst of a drought and the lack of precipitation during October 1963 helped produce record low streamflow and ground water levels across many areas of Ohio.

October 1983: Above normal rainfall statewide alleviated the drought conditions that had persisted for most of the 1983 calendar year. Record or near-record amounts of rain fell in the southern half of Ohio, where 6-10 inches of rain were reported for the month.

October 19, 1989: Snow fell across northern and western Ohio with up to 6 inches in southwestern Ohio. The weight of the wet, heavy snow combined with leaves on trees caused hundreds of trees and limbs to break, resulting in many power outages.

ACKNOWLEDGMENTS



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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.



Bob Taft

Governor

Samuel W. Speck

Director

Dick Bartz

Chief

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