



MONTHLY WATER INVENTORY REPORT FOR OHIO

October 2010

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PRECIPITATION during October was below normal throughout most of the state, but above normal in the North Central and Northeast regions. The state average was 2.01 inches, 0.46 inch below normal. Regional averages ranged from 3.28 inches, 0.30 inch above normal, for the Northeast Region to 1.07 inches, 1.30 inches below normal for the Northwest Region. Painesville (Lake County) reported the greatest amount of October precipitation, 6.05 inches. Hicksville (Defiance County) reported the least amount, 0.38 inch. Several other areas in northwestern Ohio reported less than 1 inch of precipitation for the month.

Precipitation during October fell as rain with the least amount falling across the western one-third of Ohio. Showers fell on several days during the first week of the month. The rain was generally light across the state with most areas reporting less than 0.25 inch during this period. However, the rain was heavier across north-central and northeastern Ohio where 1-3 inches was reported during the first week of October. Showers crossed the state during October 13-15. Amounts were generally light but some locations from west-central to northeastern Ohio received 0.50-1.5 inches. Light showers fell in the central one-third of the state on October 18 with 0.25-0.50 inch falling in that part of the state, but little or no rain elsewhere. Much needed rain fell throughout the state during October 26-27 as a cold front moved across the state with strong thunderstorms that contained brief heavy rain and several tornadoes. Precipitation from this system was greatest across southeastern Ohio with generally 1-2 inches reported, tapering to less than 0.25 inch in northwestern Ohio. The last few days of the month were dry with only a few showers in extreme northeastern Ohio. The dry conditions during much of the month were once again beneficial to farmers as the fall harvest and planting of winter wheat neared completion.

Precipitation during the 2010 calendar year is below normal across most of the state with only the North Central and South Central regions being above normal. The state average is 30.97 inches, 1.31 inches below normal. Regional averages range from 36.62 inches, 1.97 inches above normal, for the South Central Region to 27.91 inches, 1.15 inches below normal, for the Northwest Region.

The 2011 water year (October 1, 2010 to September 30, 2011) is not off to a particularly good start as far as precipitation is concerned, except in areas of north central and northeastern Ohio. Near-normal precipitation during the next several months should provide adequate recharge for water supplies. According to the NOAA Climate Prediction Center, current predictions point to above normal temperatures and precipitation across most of Ohio during the upcoming winter season.

(continued on back)

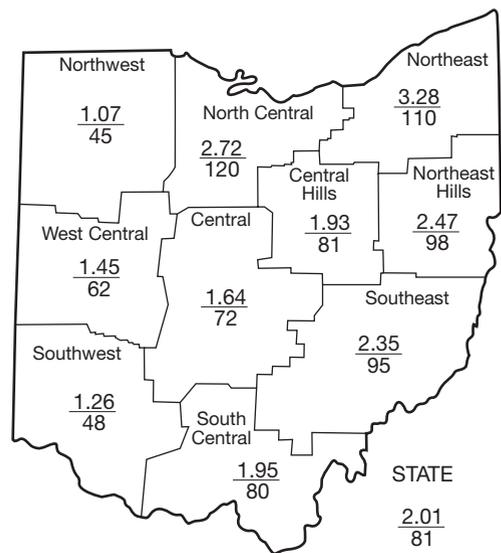
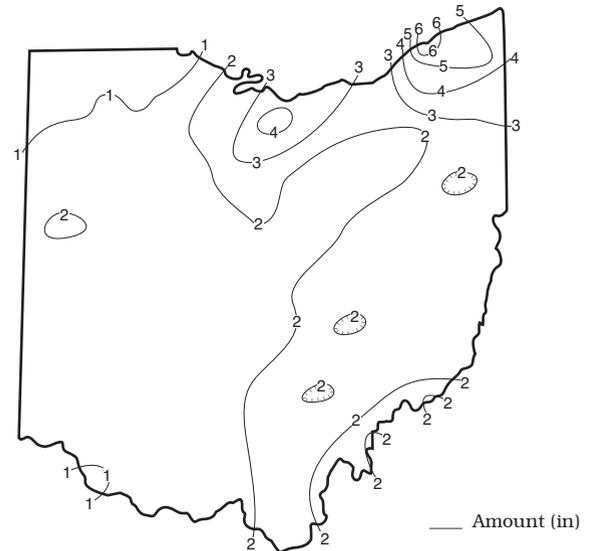
PRECIPITATION

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	-1.30	-3.63	+0.06	-2.63	+1.37	-2.0
North Central	+0.45	-0.66	+3.08	-1.26	+0.90	+0.6
Northeast	+0.30	-1.18	+1.24	-2.03	+2.13	+0.2
West Central	-0.88	-1.86	-0.13	-4.37	-4.16	-1.9
Central	-0.65	-1.75	+0.48	-3.68	-1.81	-1.6
Central Hills	-0.46	-2.05	+0.66	-3.25	-2.00	-1.2
Northeast Hills	-0.06	-1.57	+0.61	-2.42	-4.74	-1.2
Southwest	-1.36	-4.47	-1.75	-7.83	-6.58	-2.6
South Central	-0.49	-1.24	+5.84	+0.78	+4.69	-1.0
Southeast	-0.12	-1.06	+1.88	-2.27	-1.83	-1.0
State	-0.46	-1.95	+1.19	-2.90	-1.22	

*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

PRECIPITATION OCTOBER



Average (in)
Percent of normal

MEAN STREAM DISCHARGE

This Month

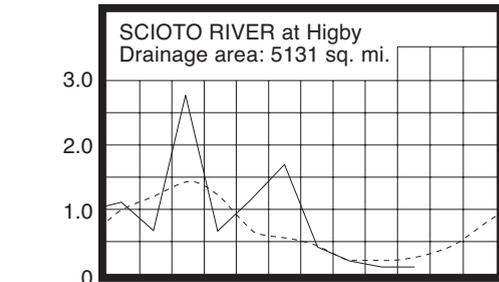
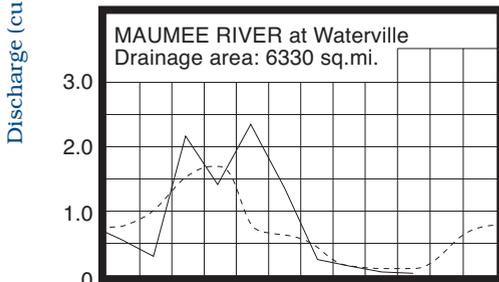
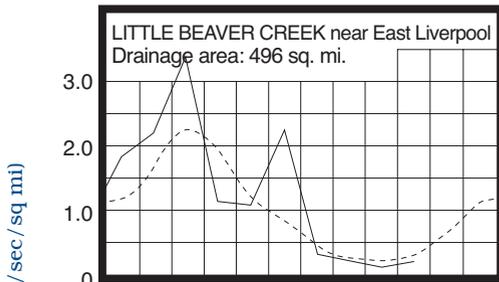
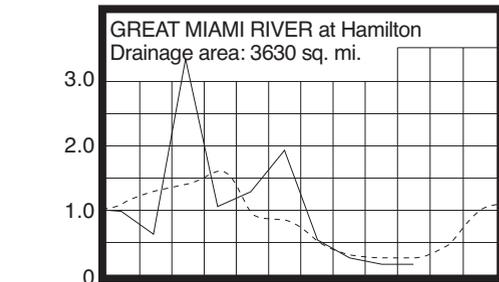
River and Location	Drainage Area (Sq. Mi.)	Mean Discharge (CFS)	% of Normal	% of Normal Past		
				3 Mos.	6 Mos.	12 Mos.
Grand River near Painesville	685	213	89	29	72	81
Great Miami River at Hamilton	3,630	586	61	50	103	97
Huron River at Milan	371	69	162	38	93	65
Killbuck Creek at Killbuck	464	96	72	47	86	82
Little Beaver Creek near East Liverpool	496	99	63	44	100	98
Maumee River at Waterville	6,330	209	27	30	137	91
Muskingum River at McConnelsville	7,422	1,229	48	75	137	70
Scioto River near Prospect	567	17	63	25	107	78
Scioto River at Higby	5,131	542	43	36	88	87
Stillwater River at Pleasant Hill	503	45	72	32	115	95

STREAMFLOW during October was below normal throughout most of the state, but above normal in some north-central and northeastern Ohio basins. Flows were low enough to be considered deficient across the southwestern two-thirds of the state. Flows during October were seasonally greater than the September flows throughout most of the state.

Flows at the beginning of the month were below normal nearly statewide. Greatest flows for the month occurred during the first week across northern Ohio. Greatest flows for the remainder of the state occurred during October 27-28, following widespread precipitation that fell on October 26. Lowest flows for the month varied, but generally occurred near the beginning of the month in northeastern Ohio and just before the October 26 precipitation

across most other areas of the state. Streamflow at the end of October was below normal throughout most of the state, but above normal in north-central and northeastern Ohio.

MEAN STREAM DISCHARGE

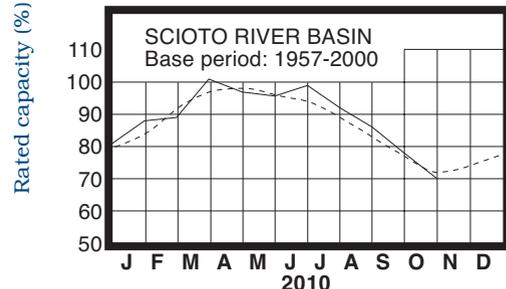
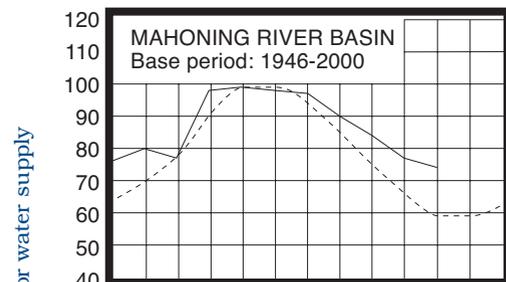


Base period for all streams: 1971-2000

RESERVOIR STORAGE for water supply during October decreased in both the Mahoning and Scioto river basins. Storage remained above normal in the Mahoning basin reservoirs, but fell to below normal in the Scioto basin reservoirs.

Reservoir storage at the end of October in the Mahoning basin index reservoirs was 74 percent of rated capacity for water supply compared with 77 percent for last month and 74 percent for October 2009. Month-end storage in the Scioto basin index reservoirs was 70 percent of rated capacity for water supply compared with 78 percent for last month and 84 percent for October 2009. In spite of the continuation of dry conditions across much of the state during October, surface water supplies are adequate at the start of the 2011 water year.

RESERVOIR STORAGE FOR WATER SUPPLY



Normal - - - - Current ———

GROUND-WATER LEVELS

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

GROUND WATER levels during October declined in most aquifers across the state. Net declines during October from last month's levels were greater than normally observed.

Ground water storage continues to remain at below normal levels in most areas of the state. Only a few consolidated aquifers in eastern Ohio have above normal levels. Current levels are lower than they were at this time last year in northern Ohio and higher in southern Ohio.

The 2011 water year is not off to a very good start as far as ground water supplies are concerned. Near normal precipitation and other climatic conditions during the next several months will be needed to adequately recharge ground water supplies. A continuation of below normal precipitation during this period would have adverse effects on the state's ground water supplies. In spite of the recent dry conditions, ground water supplies remain adequate across the state. However, current conditions remain unfavorable for recharge. The Ohio Agricultural Statistics Service reports that at the end of the month, soil moisture was rated as being short or very short in 57 percent of the state, adequate in 41 percent of the state and surplus in 2 percent of the state.

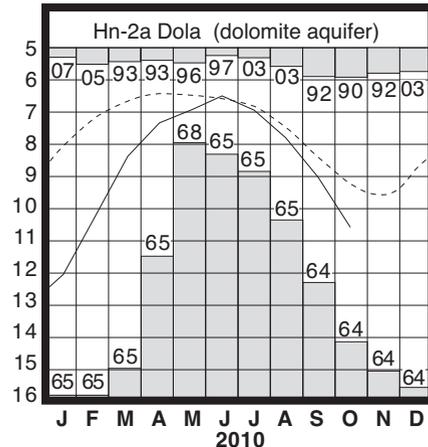
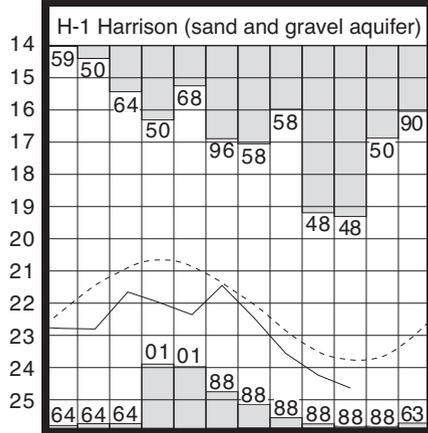
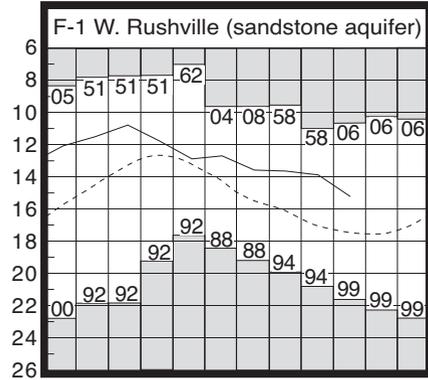
LAKE ERIE level declined during October. The mean level was 570.77 feet (IGLD-1985), 0.16 foot lower than last month's mean level and 0.33 foot below normal. This month's mean level is 0.52 foot lower than the October 2010 level and 1.57 feet above Low Water Datum.

The U.S. Army Corps of Engineers (USACE) reports that precipitation in the Lake Erie basin during October averaged 2.41 inches, 0.36 inch below normal. For the entire Great Lakes basin, October precipitation averaged 2.13 inches, 0.75 inch below normal. For calendar year 2010 through October, the Lake Erie basin has averaged 29.24 inches of precipitation, 0.58 inch below normal, while the entire Great Lakes basin has averaged 26.15 inches, 1.28 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 5 inches above to as much as 15 inches below the normal seasonal level.

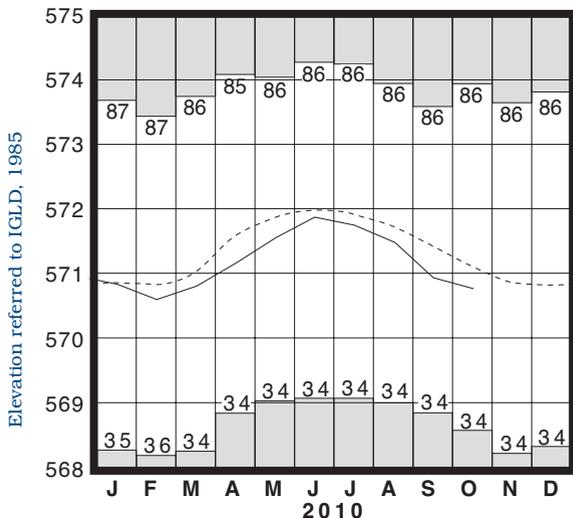
Index Well	Location	Aquifer	Mean This Month	Departure From Normal	Change in feet from:	
					Last Month	Year Ago
F-1	W. Rushville, Fairfield Co.	Sandstone	15.22	+2.22	-1.34	-0.93
Fa-1	Jasper Mill, Fayette Co.	Limestone	11.79	-2.71	-0.97	-2.31
Fr-10	Columbus, Franklin Co.	Gravel	45.46	-1.23	-0.12	+0.07
H-1	Harrison, Hamilton Co.	Gravel	24.63	-0.87	-0.41	-0.90
Hn-2a	Dola, Hardin Co.	Dolomite	10.59	-1.36	-1.58	+1.14
Po-124	Freedom, Portage Co.	Sandstone	77.44	+0.91	-0.29	+0.90
Tu-1	Strasburg, Tuscarawas Co.	Gravel	15.34	-1.38	-0.26	+0.83

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

Normal - - - - - Current ———

(Precipitation continued from front)

The August-October 2010 period has been unusually dry throughout most of the state with the western one-third exceptionally dry. During these 3 months, 4.43 inches of precipitation has fallen in the Southwest Region, 4.47 inches below normal, while in the Northwest Region, 4.69 inches of precipitation has fallen, 3.63 inches below normal. This ranks as the 4th driest August-October period during the past 128 years of record for the Southwest Region and the 5th driest for the Northwest Region. An example of how dry it has been in some areas of the state is in Fernbank (Hamilton County) where a total of 3.08 inches of rain has fallen during the August-October period, 6.96 inches below normal.

SUMMARY

Precipitation during October was below normal throughout most of Ohio, but above normal in the North Central and Northeast regions. Streamflow was below normal across most of the state, but above normal in some areas of north-central and northeastern Ohio. 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 and remained below normal throughout much of the state. Lake Erie level declined 0.16 foot and was 0.33 foot below the long-term October average.

NOTES AND COMMENTS

Severe Storms Affect Ohio, Second Observation Well Destroyed

For the second month in a row, severe storms left their mark on Ohio. On October 26, severe storms moved across the state with many areas experiencing brief heavy rain, damaging winds and tornadoes. Among the hardest hit areas were Auglaize and Allen counties in northwestern Ohio and areas in a line from Hamilton County in southwestern Ohio through Franklin and Licking counties in central Ohio. High winds caused a portion of a building to collapse in West Carrollton (Montgomery County). The debris fell on top of observation well MT-55 destroying the site. This is the second observation well to be destroyed by severe storms in the past 2 months. On September 16, severe storms rolled through areas of the state with high winds, heavy downpours, large hail and several tornadoes. Considerable damage was caused by these storms across many areas of the state. The hardest hit areas were in Athens, Meigs, Perry and Wayne counties. The tornado in Wayne County was on the ground for an estimated 12 miles and cut a path of destruction through The Ohio State University OARDC campus located in Wooster. Several buildings were destroyed and greenhouses on the OARDC campus could not withstand the estimated 130 mph winds. Observation well WN-8, located on the OARDC campus, was directly in the path of this tornado and was destroyed.

Both observation well WN-8 and MT-55 will be out of service until necessary repairs are completed at the sites. The casing on WN-8 was damaged and will have to be replaced. Hopefully, this repair will be completed in early November, and the gauge re-installed shortly thereafter. At the current time, it is uncertain when MT-55 will be back in operation.

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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